

Plymouth

Plymouth lies in the extreme southwest of Devon bounded by the River Tamar and Cornwall to the west, Plymouth Sound and the English Channel to the south, and the South Hams and Dartmoor National Park to the east and north.

Early plant recording in Plymouth was summarised by T.R.A. Briggs in his excellent *Flora of Plymouth* (Briggs 1880). This includes all earlier published records including significant contributions relating to the Plymouth area made by George Banks (Banks 1830), Rev. John Jacob (Jacob 1835–37), I.W.N. Keys (Keys 1866–71) who was resident in the town for many years, and his own work published in *The Phytologist* and *Journal of Botany* between 1860 and 1880. The significance of Briggs' contribution to our knowledge of the flora of the Plymouth area in the 19th century cannot be overstated. He continued to publish notes in the *Journal of Botany* until 1889. An obituary, written by his good friend Rev. William Moyle Rogers (Rogers 1891) also appears in the *Journal of Botany*. Like most 19th century botanists Briggs collected a great many herbarium specimens. Sadly, most of those stored at the Plymouth Institution were destroyed during a second world war bombing raid in 1942 (Masson Phillips 1942). The few rescued specimens are now at Plymouth Museum. However, Briggs shared much of his material with botanists in other parts of the country and many of his specimens survive in collections elsewhere.



Plymouth Hoe.

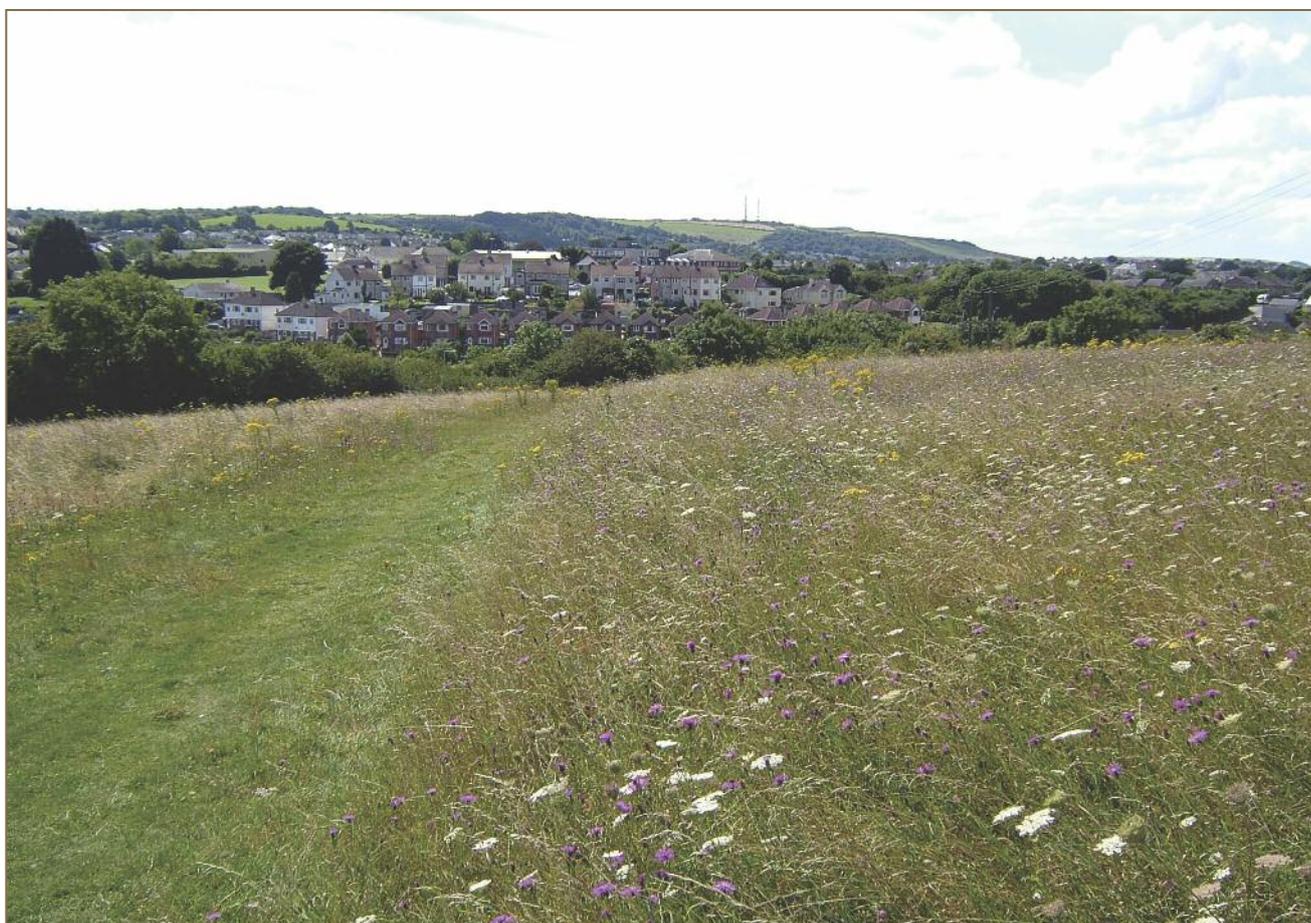
Between June 1987 and September 1988 a Community Programme to survey the flora and habitats within the city, funded by the Manpower Services Commission, was carried out by Andy Stevens and others (Stevens 1990). The survey was conducted at the 500 m square level and gives a very detailed picture of the city at that time.

Plymouth sits on both calcareous Devonian limestone and acidic Devonian shales. The shales are punctuated by outcrops of lava, grit and tuff which support a neutral to moderately acid loving flora. It is the largest urban area in Devon with a population of just over 256,000 in 2011 and many of the natural features have been covered by urban development. Briggs and the other 19th century botanists would not recognise most of the city today. Despite this, fragments of semi-natural habitat still occur throughout the city area. Because of its coastal situation at the mouths of the River Tamar and River Plym, and the varied geology, a wide variety of habitats can still be found within the city boundaries. These include: semi-natural ancient woodland, limestone and neutral grasslands, fen, saltmarsh, sea cliffs, waste ground, railway embankments and old quarries and walls.

The main botanical interest occurs on or near the limestone that extends from Mount Wise at the mouth of the Tamar, across the Hoe, Prince Rock and Cattedown and then extends to the east of the Plym Estuary as far as Elburton. This band is 8 km from west to east and between 0.5 and 1.5 km wide. There is another area of limestone, outside the city boundary in the Yealmpton area to the east. Botanically, these areas are not nearly so rich as the Torbay limestone, but are certainly not without interest. From Mount Wise to the Citadel on the Hoe, the coast is mainly a low limestone cliff, although much modified in places. There are also small scattered areas of limestone grassland and a lot of old walls, as well as amenity grassland. Field Eryngo *Eryngium campestre* still grows near Devil's Point where it was first recorded by John Ray in 1662. Typical limestone grassland species such as Salad Burnet *Sanguisorba minor* and Wild Clary *Salvia verbenaca* occur in places, and Quaking-grass *Briza media*, Autumn Lady's-tresses *Spiranthes spiralis* and Sainfoin *Onobrychis viciifolia* at Mount

Wise. Although probably introduced, Spiny Restharrow *Ononis spinosa* is also at Mount Wise. Other species of interest in the Hoe and Eastern Kings area include both Ivy and Carrot Broomrapes *Orobancha hederiae* and *O. minor* subsp. *maritima*, Knotted Hedge-parsley *Torilis nodosa*, Rough Clover *Trifolium scabrum*, Toothed Medick *Medicago polymorpha*, Sea Fern-grass, *Catapodium marinum*, Bulbous Meadow-grass *Poa bulbosa* and Crested Hair-grass *Koeleria macrantha*. Billacombe open space has areas of limestone grassland with some scrub. It holds a typical limestone flora and has a large colony of Field Eryngo. Pale St John's-wort *Hypericum montanum*, Carline Thistle *Carlina vulgaris* and Hoary Rockcress *Arabis hirsuta* also grow in this area, and Yellow-wort *Blackstonia perfoliata* nearby. There is an excellent show of Columbine *Aquilegia vulgaris* at Billacombe where it is certainly native. There are old limestone quarries at Oreston, Radford, Billacombe, Turnchapel and Hooe which have small areas of limestone grassland and scrub, and Mount Batten has an excellent show of Greater Knapweed *Centaurea scabiosa*. Spurge Laurel *Daphne laureola* is found at Radford and Brixton. The cliffs at Jennycliff are one of the few Devon sites for native Maidenhair Fern *Adiantum capillus-veneris*, and Dwarf Elder *Sambucus ebulus* grows on the clifftop close to the car park. Just beyond the city boundary the limestone at Yealmpton is mostly wooded or built over. Here areas of semi-natural ancient woodland support a rich ground flora including Solomon's-seal *Polygonatum multiflorum* in what is probably its only native site in Devon. The nationally uncommon Southern Polypody *Polypodium cambricum* is found in a number of places on the limestone, and both Bee Orchid *Ophrys apifera* and Pyramidal Orchid *Anacamptis pyramidalis* are found in a few scattered sites.

Elsewhere, Plymouth Pear *Pyrus cordata* is found in two hedges in the Derriford and Estover areas of the city, where it was first recognised by Briggs as a British species in 1865 (Briggs 1880). Mossy Stonecrop *Crassula tillaea*, a tiny member of the stonecrop family, found by Briggs in 1861 in three quarries in the parishes of Egguckland and Shaugh Prior in the Plym Valley was still to be found at Cann Slate Quarries in 2007. The principal populations of Wavy-leaved St John's-wort *Hypericum undulatum* are found further north, but this is



The open space at Billacombe.



Boringdon Park in 2006 during the early stages of landscaping.

another species first recognised by Briggs as part of the British flora in the Plymouth area. It can still be found in small open flushes in the woodland by the River Tamar at Warleigh Point, just outside the city boundary, where he saw it in 1870. A small population of Wild Service-tree *Sorbus torminalis* is also known there. Other national rarities occurring in the Plymouth area are more recent arrivals. Balm-leaved Figwort, *Scrophularia scorodonia*, primarily recorded in the Plym Valley, was added to the city flora in 1988 having spread from its core populations around Kingsbridge in the South Hams. Wall Bedstraw *Galium parisiense* was first found in Plymouth in 1997 and is now known from several locations in the city; a reflection of its spread to other locations in South Devon. Northern Yellow-cress *Rorippa islandica*, first distinguished from Marsh Yellow-cress *R. palustris* in 1968 is known, in Devon, only at Saltram and Marsh Mills and one other site in North Devon.

Other important habitats include the small patches of saltmarsh, mainly on the Plym Estuary and in Tamerton Creek where a range of common saltmarsh species can be found. Bulbous Meadow-grass *Alopecurus bulbosus*, once known by the River Plym at Chelson Meadow, was lost to landfill soon after 1989. Scattered around the city are several small areas of moderately herb rich neutral grassland. Blagdon's Meadow by the River Plym where the flora includes Burnet-saxifrage *Pimpinella saxifraga*, Wild Parsnip *Pastinaca sativa*, Glaucous Sedge *Carex flacca*, Autumn Lady's-tresses *Spiranthes spiralis*, Bee Orchid and Southern Marsh-orchid *Dactylorhiza praetermissa* is notable. Corky-fruited Water-dropwort *Oenanthe pimpinelloides* is occasional on grassy verges though much commoner further east in Devon, and Greater Burnet-saxifrage *Pimpinella major*, once more or less restricted to Plymouth and adjacent areas of southwest Devon, is the commonest white flowered umbellifer flowering in late summer and appears to be slowly spreading. There are a number of semi-natural ancient woodlands around the city, including Woodland, Budshead, Southway, Whitleigh and Bircham Woods, and also woods in the Forder and Plym valleys. Ancient woodland indicator species such as Wild Garlic *Allium ursinum*, Moschatel *Adoxa moschatellina*, Pignut *Conopodium majus*, Yellow Pimpernel *Lysimachia nemorum*, Wood Millet *Milium effusum*, Common Twayblade *Neottia ovata*, Bluebell *Hyacinthoides non-scripta* and Primrose *Primula vulgaris* can all be found.

Introduced species are a common feature of many port cities and Plymouth is no exception. Prostrate Toadflax *Linaria supina* from France was introduced to Cattedown Quarry with ballast from Rouen around 1837 from where it spread along the railway system. Perhaps the most famous introductions are Plymouth Thistle *Carduus pycnocephalus*, known since 1868; and a subspecies of Bladder Campion with pink flowers *Silene vulgaris* subsp. *macrocarpa*, from the Mediterranean, known here since 1921. Both can still be found at their only British site on Plymouth Hoe. Yellow Figwort *Scrophularia vernalis* is still found at Ham where it was recorded by Briggs in 1861 and Abraham-Isaac-Jacob *Trachystemon officinalis*, Blue-eyed-Mary *Omphalodes verna* and Turkish Squill *Scilla bithynica* are all well naturalised at Tamerton Foliot. Grecian Foxglove *Digitalis lanata* was found recently by the Plym Estuary (Pullen 2012). In the vicinity of Millbay Dock Narrow-leaved Pepperwort *Lepidium ruderae* has been known since Briggs' time. More recent introductions located there include Mediterranean Hair-grass *Rostraria cristata*, Spreading Hedge-parsley *Torilis arvensis* subsp. *purpurea*, Compact Brome *Anisantha madritensis*, Greek Sea-spurrey *Spergularia bocconeii* and Saltmarsh Aster *Aster squamatus*. Many of these probably arrived via boat traffic between Roscoff in France or Santander in northern Spain. Other recent introductions include Hairy Rocket *Erucastrum gallicum*, found in the city centre and Narrow-leaved Ragwort *Senecio inaequidens* found at Derriford. It is somewhat less surprising that *Cotoneaster* species naturalise around the city where the seeds are stimulated to germinate having passed through birds feeding on the berries of garden plants. Of the 28 species found naturalised in Devon, 20 have been found in Plymouth. These include Open-fruited *Cotoneaster bacillus*, Fang's *Cotoneaster* *C. fangianus* and Late *Cotoneaster* *C. lacteus* at their only sites in the County.

In 2006 a notable collection of plants was found at Boringdon Park during the development of a new golf course (Fenwick 2007). These were associated with thousands of tonnes of soil and rubble imported from all over the Plymouth and surrounding area for landscaping the site. The flora on the site fell into four main groups: aliens of horticultural origin, seed aliens probably from bird seed, imported natives including archaeophytes, and native species. Amongst these, Busy Lizzie *Impatiens walleriana*, Petunia *Petunia* × *hybrida* and Painted Tongue *Salpiglossis sinuata* were found with familiar garden vegetables including marrows, pumpkins and tomatoes. Niger *Guizotia abyssinica*, Common Ragweed *Ambrosia artemisiifolia*, Hemp *Cannabis sativa* and Green Nightshade *Solanum physalifolium* were found alongside Pale Weasel-snout *Misopates calycinum*, new to Devon. Grasses included Common Millet *Panicum miliaceum*, Canary-grass *Phalaris canariensis*, Foxtail Bristle-grass *Setaria italica* and Annual Beard-grass *Polypogon monspeliensis*. Notable archaeophytes included Small Toadflax *Chaenorhinum minus*, Nettle-leaved Goosefoot *Chenopodium murale* and Henbane *Hyoscyamus niger*, while Broad-leaved Spurge *Euphorbia platyphyllos* was also new to Devon.

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