Ecological Flora of the Central Chilterns

Section 18: Fabaceae, Polygalaceae

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Family: **Fabaceae** (Legumes)

This family of plants is one of the most influential ecologically because of their ability to fixate nitrogen from the atmosphere, an element essential to all life but one which does not readily enter into combination with other elements to form compounds that can be used by plants. Legumes (and a few individual members of other families) have nodules among their roots containing bacteria called Rhizobia. It is these bacteria that can extract nitrogen to form usable compounds. This process not only enables the legumes to grow, but when they die the nitrogen is released into the soil and becomes available to other plants. Traditional farming methods in this area in the 19th century included systems of rotation whereby crop-fields were left fallow every few years and sown with clover, sainfoin or lucerne, in order to replenish nitrogen resources in the soil. With the advent of inorganic nitrogenous fertilisers this practice has become quite rare, although it is still used as a part of organic farming methods. Beans may also be grown as a staple crop in rotation with crops like wheat or oilseed-rape to achieve a similar effect.

Many legumes are also important food resources for man, largely through their nutritious seeds - eg peas, beans, lentils. All members of the family have their seeds protected by pods, while the flowers are almost all of the "pea-flower" kind, with five petals forming a tubular shape, an upper one referred to as the "standard", two lateral ones or "wings", and two lower fused along a keel and concealing the stamens and style. (See rest-harrow flower, right.)

**White clover** *Trifolium repens*

This is one of our most abundant native plants, found in almost all grassland, improved and unimproved, wet or dry, and rough bare places, especially, but not entirely, on the clay.

**Identification** Low creeping perennial, rooting as it spreads, with small trefoil leaves, each of the leaflets typically having a more or less distinct whitish chevron mark. Flowers, white, in long-stalked globular multi-flowered heads, sweet-smelling. A mass of white clover in full flower on a sunny day emits a heady honeyed scent.

**Notable sites** Ubiquitous in all grasslands, including lawns, churchyards, cow pasture, chalk turf (eg Prestwood Picnic Site) and paths.

**NVC** It is one of the defining plants in MG5 and MG6 pastures, and in MG8 water-meadows. It also has a central presence in some sub-communities of M22 fen meadow, MG7 leys (ploughed land sown to grass) and CG2 chalk grassland.

**Galls** Four are currently recognised in inland Britain. One is recorded locally, caused by the midge *Dasineura trifolii*.

**Mines** Eight leaf-miners are known from clovers in this country, none known locally.

**Other ecological associates** The scent and abundant nectar attract many bees. The plant is the food-plant of many insects appreciative of the nitrogen-enrichment. The majority of these are beetles, particularly weevils, 13 of which are known locally as feeding on clovers. The commonest of these are *Sitona hispidulus, S. lepidus, Apion dichromum*, and *A. trifolii*, all of which can reach pest proportions. Clover leaves with perforations caused by these are very common. Other weevils recorded locally are *A. assimile, seniculus, and varipes*; and *S. puncticollis*.
sulcifrons and macularius. Two others that feed on white clover on calcareous grassland Hypera nigrirostris and H. postica have not been noted since the early 20th century. The pollen-beetle Meligethes carinulatus also attends clover. Most of the day-flying moths seen on our best chalk grasslands - Narrow-leaved five-spot burnet, Shaded broad-bar, Mother Shipton and Burnet companion - all feed as caterpillars on clover. Other moths recorded are Latticed heath and Ancylis badiana. Immigrant Clouded yellow butterflies lay their eggs on clover, and they were seen in numbers over a clover-crop near Great Kingshill in 2009. Three sawfly larvae also occur - Nematus myosotidis, Tenthredo arcuata and T. schaefferi ab. perkinsi, the latter being particularly prevalent. The Lucerne plantbug Adelphocoris lineolatus and the leafhopper Macrosteles sexnotatus also feed on clovers as adults. The micro-fungus Cercospora zebrina has been found on white clover, as has Cymadothes trifolii, which creates a conspicuous black blotch, and Pseudopeziza trifolii (dark brown spots). Lastly, clover is the preferred host of the parasitic plant Common broomrape Orobanche minor ssp minor, which often appears (but not every year) at Prestwood Picnic Site.

**Human associations** White clover is one of the resting crops used in rotational agricultural to replenish nitrogen and to support honey-bees, so that the nectar and pollen of white clover is a major component of our honey. Seed for this is often imported from abroad (hence an alternative name of Dutch clover). The flowers may be sucked for their nectar (although you may also get a mouthful of resident thrips and other insects). Four-leaved genetic sports are considered "lucky", but you may use up your luck finding them. Such sports can be created artificially and are cultivated for gardeners (I came across a winery in Monmouthshire selling them in pots). It may be the fabled "shamrock" of Ireland, although this might refer to any clover. (And "shamrocks" sold in garden centres are often the unrelated wood-sorrel!) The plant does not exhibit any medicinal properties.

**Derivation** "Trefoil", a general name for the clovers and the origin of their genus Trifolium, means "three-leaved". "Clover" is from the Old English clāfre, from the ancient Germanic term for clover, reflecting the long-standing importance of clovers as agricultural crops. It may be from an Indo-European root for "split", referring to the divided leaves (cf. Greek glyphēin "carve", our own word "cleaver" or axe). "Shamrock" is from the Gaelic seamar "clover".

**Varieties** There is substantial variation within our white clover population, with a range of genetic strains causing some populations to have leaves missing the white chevron mark (eg the prevalent form in my own lawn in Prestwood) or sporting a large purple mark. The flowers are often partly or wholly pink and may even be red, and some have longer flower-stalks producing a looser head. Some of these strains may have been introduced from abroad with crop-seed, although others may be reactions to soil nutrients.
Red clover *Trifolium pratense*

Our second commonest clover, also found in a wide range of grassland, although not as abundantly except in agricultural pastures and rough land, although it is more conspicuous in flower.

**Identification** Much hairier and larger in all its parts than white clover, usually with pink-purple flowers, although these are sometimes cream. The leaves may or may not have white markings. There are no small bracts at the base of the individual flowers as there are in white clover.

**Notable sites** Ubiquitous, especially in farmland.

**NVC** Major constant in MG5 pasture (along with white clover) and in some M22 fen meadows.

**Galls** Five galls in this country, of which that caused by the weevil *Apion seniculus* (which also feeds on white clover) is known locally.

**Mines** As for white clover.

**Other ecological associates** These are mostly the same as white clover, although the two *Tenthredo* sawflies appear to be restricted to *repens*, as are the weevil *Apion dichroum*, and the fungus *Cercospora zebrina*. *Apion trifolii* also regularly occurs. Other microfungi occur causing brown spots, eg *Ascochyta trifolii*, and the powdery mildew *Erysiphe trifolii*.

**Human associations** Used as an agricultural crop to an even greater extent than white clover.

**Varieties** Like white clover, there are many genetic strains. The variety *sativum* introduced from abroad as a crop plant is larger, with less toothed leaflets and hollow stems. It is often naturalised along roadsides and in rough ground, including gardens.
Lesser trefoil *Trifolium dubium*

Lesser trefoil, which is native, is widespread in our area in grassland on clay and chalk. Although annual it is persistent.

**Identification** Prostrate plant with yellow heads of flowers, much smaller than the clovers. It is most easily confused with Black medick *Medicago lupulina*, with which it is surprisingly similar, except in seed when the latter has a cluster of black coiled pods, while lesser trefoil has a simple head of drooping brown pods. In flower it does not have hairy leaves and calyx like *lupulina*, the flowers are a deeper yellow, and the tips of the leaflets are simple, not with a distinct sharp tooth as *lupulina* (see below, *Medicago*).

**Notable sites** All sorts of grassland, especially shorter turf (eg churchyards) or rough ground.

**Galls** Four known; that of the fly *Dasineura leguminicola* is recorded locally at Prestwood Picnic Site.

**Mines** As for the clovers.

**Other ecological associates** Latticed heath and Burnet companion caterpillars feed on trefoils, as they do on clovers. The weevil *Apion nigritarse* and the plant bug *Coriomeris denticulatus* are also recorded locally.

**Human associations** Too small to be of much significance, although it has been cultivated. Some think this is the original “shamrock”.

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**Hop trefoil *Trifolium campestre***

Occasional in short dry turf; a native annual, but less persistent in any one location than *T. dubium*.

**Identification** Similar to *dubium* but larger, with individual flowers over 4mm, not under, and heads with over 25 flowers, not fewer. The lemon-yellow flowers, usually held more erect, are quite conspicuous.

**Notable sites** Regularly to be found at Prestwood Picnic Site. May also occur in road verges, eg Cryers Hill Road.

**Ecological associates** As for *T. dubium*.

**Derivation** The flower-heads look like small hops.
Alsike clover *Trifolium hybridum*

Although a native, this plant is infrequent in our area and probably occurs mainly as a result of introduction for cultivation along with other clovers. Druce (1926) has it as a "common relic of cultivation".

**Identification** Like a large white clover (heads about 25mm across, only up to 20mm in white clover), but usually pinkish. The plant is more erect, not creeping, and the leaves have narrower leaflets that lack white chevrons.

**Notable sites** Records are scattered over our area, but as an annual it is rarely persistent. It has been found most recently in a couple of fields at Hampden Bottom Farm (most usually in Warren field) and at Nairdwood Lane Allotments; it has also appeared in disturbed areas in woodlands and is sown as part of farm conservation areas.

**Ecological associates** It shares some of the galls and mines of both red and white clovers, although the plant is too scarce locally for any to have been observed. It similarly attracts bee pollinators. I have found the common bug *Closterotomus norwegicus* feeding in its flower-clusters.

**Human associations** Introduced from the continent as a crop.

**Derivation** *Alsike* is a Swedish town where it was extensively cultivated and exported. The pronunciation therefore involves a short "i" (and should really have the final "e" sounded too) - "al-sick(-uh)".

**Varieties** The cultivated form is sometimes differentiated as subspecies *hybridum*, which has hollow, not solid, stems and larger flower-heads. Our records do not differentiate the cultivated form, but I suspect that they are all of this type.

Slender trefoil *Trifolium micranthum*

Only four sites have been recorded for this cryptic plant in our area, but it is easily overlooked, being slender, few-flowered and creeping in the well-mown short turf of lawns.

**Identification** It has small trefoil leaves and tiny yellow flowers well-stalked and thus not forming a head, only 2-6 together.

**Notable sites** In a lawn at Upper Hollis off Martinsend Lane; in a mown stretch of verge along Greenlands Lane; in the lawns of Missenden Abbey. I have also seen it in natural short grassland at Hatches Bank.

**Ecological associates** Not observed locally (no galls are mentioned for this plant in Redfern & Shirley 2011).
**Zigzag clover *Trifolium medium***
While this native clover has been recorded from five sites locally, it never seems to persist for long. Druce (1926) only mentions it for the Naphill area and says that it is "very local and rather rare". It was recorded near Naphill in 2005 but is no longer at this site. It is probable that it only ever occurred in our area as a casual and has never been established. It was recorded at Prestwood Picnic Site in both 1990 and 1993 (but not since, despite regular surveys). It was seen in 2017 at the side of the bridleway by Angling Spring Wood.

**Identification**  Like red clover but with narrower leaflets, darker purple flowers, and the stipules at the base of the leaf-stalks with linear teeth (whereas those of red clover are triangular with long bristles from the tips). A distinct "jizz", once familiar, marks out the flowers.

**Derivation**  The stems often scramble in a zigzag fashion, but this is hardly an identification feature.

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**Haresfoot clover *Trifolium arvense***
There has only been one early record of this distinctive clover, at Heath End in 1999, and it was not seen again in our area until 2016, when Val Marshall discovered it by London Road, Great Missenden, after disturbance of the road verge. It was not included for our area in Druce (1926). It has cylindrical pale pink soft-bristly flower-heads and inhabits bare sandy ground, avoiding chalk.

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**Knotted clover *Trifolium striatum***
Although "local" in Druce (1926), we have no definite records of this plant. It is a small prostrate pale pink clover growing in short turf on sand and therefore, like haresfoot clover, unlikely to find a permanent station in an area with our geology. It is easily overlooked when not flowering, although the ribbed calyx expands around the head in fruit and becomes more obvious ("knotted"). The leaves are very hairy both sides.
Egyptian (Berseem) clover *Trifolium alexandrinum*

This foreign import is included in modern seed-mixes because of its superior ability (present in various degrees by all our legumes) to “fix” nitrogen occurring in the soil, thus making it available to other plants. It is used mostly in grassland mixes, but is also useful with crops. It was planted experimentally with oil-seed rape in a field at Great Hampden by farmer Ian Waller in 2017, where it flowered in November. It is a distinct clover because of its slender but erect stance, the whole plant softly hairy, and relatively small white flower-heads on long stalks from the base of leaves that are placed exactly opposite each other. The individual flowers have no bracts, and the stipules at the base of the leaves are split into long needle-like segments with long hairs. It remains to be seen whether it will occur in future years as a wild "escape" if it successfully seeds.
Common bird’s-foot trefoil *Lotus corniculatus*

Widespread on dry soils, but no longer "abundant" as was claimed by Druce (1926). Its major habitats of short-turf chalk grassland and grass-heath (once prevalent on the commons) are now very much reduced in the area.

**Identification**  This sprawling perennial has attractive golden-yellow to orange flowers and, in fruit, 3cm-long black pods. The flowers do not grow in tight heads like most of the clovers and trefoils reviewed above. The leaves are divided into five leaflets, but the basal pair are at the base of the stalk and look like large stipules, so that the leaves appear trefoil. The plant has a few long hairs but appears mostly glabrous. The stem is square in cross-section and solid. Acute angle between upper sepals (which are not tight to the flower) distinguishes it from *pedunculatus* below.

**Notable sites**  All the main chalk-grassland sites with some short turf have this plant - eg Prestwood Picnic Site, Little Stocking Meadow, Meadsgarden Field. It also occurs at the rare survivals of grass-heath in Widmere Field and by Sheepwash Pond. It grows well in my own garden meadow and spreads into bare places such as paving.

**NVC**  *Lotus corniculatus* features as a principal, element in many chalk grassland types (CG2, 3, 5, 6), in MG5 unimproved meadows, and in a sub-community of U1 grass-heath.

**Galls**  Eight gall-causers known, although some of them are rare. The galls of the fly *Contarinia loti*, which affect the flowers, have been noted locally.

**Mines**  Six known, but none yet recorded locally.

**Other ecological associates**  Six-spot burnet caterpillars feed on bird’s-foot trefoil, and also those of Latticed Heath, Burnet Companion and *Endotricha flammealis*. The weevils *Apion loti* and *Hypera plantaginis* have also been found. The plant-bug *Coriomerus denticulatus*, noted above on clovers, also feeds on *Lotus*. The rust fungus *Uromyces pisi-sativi* causes brown spots. Visited by bees, especially the mason bee *Hoplitis claviventris*.

**Human associations**  Like the clovers, bird’s-foot trefoil appears to have played no part in folk customs, even though it has probably gathered one of the longest lists of folk-names (Mabey 1996), presumably because of its attractiveness, especially when it occurs, as it so often does, in extensive colonies.

**Derivation**  The long seed-pods, radiating from a single point, are in the form of a bird’s foot.

**Varieties**  Our native species is var. *corniculatus*. Variety *sativus* with hollow stems, more erect and with larger leaves, is introduced from abroad, probably with commercial seed for re-seeding road verges etc. Although not specifically recorded locally, it may well be found along road verges or field-edges if sought for.
Greater bird’s-foot trefoil *Lotus pedunculatus*

This plant occurs scattered across our area where unimproved damp grassland occurs. Its distribution does not seem to have changed much since Druce (1926) considered it "local" in our area.

**Identification**  Like a larger *L. corniculatus*, this plant is usually more robust, and often distinctly hairy. The stem is hollow, but it can be separated from var. *sativus* of common bird’s-foot trefoil by the calyx teeth spreading in bud and the two upper ones having an acute angle between them (‘sinus’), whereas this angle is obtuse in *corniculatus*.

**Notable sites**  Well-established at Widmere Field, Angling Spring Wood, a long-grass meadow beside the west edge of Peterley Wood, Barnes’s Grove, and formerly at Haypole before it was converted to horse paddocks.

**NVC**  It is a key component of M23 "rush-pasture".

**Ecological associates**  Largely as for common bird’s-foot trefoil.

**Human associations**  None known.

Narrow-leaved (or slender) bird’s-foot trefoil *Lotus tenuis*

There is only one record for this plant in our area. It usually grows in bare places or sparse grass on clay. It was recorded (as *L. glaber*) by Alan Showler in 2003 from Speen Access Field, which does not appear to be its typical habitat, so it may have been a chance introduction. It is regarded by Maycock & Woods (2005) as rare in Bucks. The leaflets of its upper leaves are more than four times as long as wide and more acute than those of *L. corniculatus*. The whole plant is wirier and sparser. The angle between the upper calyx lobes is acute. The flower is a paler lemon yellow.
Bush vetch *Vicia sepium*

Widespread in our area, and the commonest of our vetches, *Vicia sepium* is mainly a hedgerow plant. Druce (1926) records it at Hughenden in 1864 and says that it is "very common on chalk wood edges”.

**Identification** The leaves are typically "vetch" - long and pinnate with up to nine pairs of leaflets, the tips extended as branched tendrils, used for scrambling within scrub. The leaflets have a distinctive shape (see picture below), including a narrow hooked point. The "pea-type" flowers are in several heads up the stem, like a short spike. They are a rather dull purple, fading to dingy blue.

**Notable sites** It occurs in many hedges across Hampden Bottom Farm, along Bryants Bottom Road, Hobbshall, Hyde and Whitefield Lanes, and at Great Missenden station; in scrub at Little Stocking Meadow; and by woods such as Longfield and Hatches, Hampdenleaf, Rook, Widnell, Weyburns, Chalkpit and Angling Spring.

**Galls** Five are known, but none noted locally.

**Mines** About ten leaf-miners, three recorded locally: the uncommon fly *Agromyza felleri* and the much commoner *A. vicifoliae* and *Liriomyza congesta* (the last also occurs on many other related plants).

**Other ecological associates** Like the clovers, the vetches are popular with beetles, especially weevils. Weevils recorded locally are *Apion aethips*, *A. craccae*, *A. ervi*, *A. viciae*, the abundant *Sitona lineatus*, *S. macularius* (not since 1919), and *Bruchus rufimanus*. Also the leaf-beetle *Derocrepis rufipes*, the lucerne plantbug *Adelophocoris lineolatus*, and the moths *Shaded Broad-bar*, *Pea moth* *Cydia nigricana* and *Ancylis badiana*. Small sooty spots on the leaves are caused by the fungus *Uromyces viciae-fabae*.

**Human associations** None known, surprisingly for such a common plant.

**Derivation** "Vetch" is from the Latin *vicia*, used as the Genus name. The Latin name is derived from *vincire* "to bind", from the tendrils used to cling on to other plants.

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Common vetch *Vicia sativa*

This native species is quite common. It is still true as Druce (1926) says: “rather common, rarely permanent”. Its status is confused by introduction of alien sub-species for cultivation. In fact, it is quite likely that none of our plants in this area are truly native. The native sub-species *nigra* is more a plant of sandy areas and coastal regions. Although it occurs in our area, these plants are likely to have been introduced. Sub-species *segetalis* was a very early prehistoric introduction and probably accounts for many of our plants. Sub-species *sativa* is a modern introduction that commonly occurs as a casual around agricultural land.

**Identification** Unlike bush vetch, the flowers are solitary or in pairs, although their brighter pink-purple colour can make them more conspicuous. The leaflets do not narrow like those of *sepium* but broaden towards the tip, which is indented with a small tooth or "mucro".

**Notable sites** The distribution of the different sub-species is obscured by them usually being lumped together in earlier records. Ssp *nigra* occurs mainly around the fields on Hampden Bottom Farm, where it is clearly an escape. Ssp *segetalis* also occurs at Hampden Bottom but is more scattered, including grassland at Prestwood Picnic Site and Acrehill Field. Ssp *sativa* accounts for many more records and is widely scattered, including most churchyards and Missenden Abbey, but seldom in established natural grassland.

**Ecological associates** As for bush vetch, along with other *Vicia* spp.

**Human associations** Traditionally used in agriculture as a nitrogen-fixer, like the clovers. It grows better in open fields than *V. sepium*, which needs semi-shade.
Varieties  The upper petal (standard) is paler than the wings in both ssp segetalis and sativa, while the flowers of ssp nigra are uniformly coloured. The upper leaves of nigra are also much narrower than those of the lower leaves, while the other two ssp exhibit a gradual narrowing of the leaflets with height, with no clear demarcation between lower and upper leaves. Segetalis and sativa can really only be separated by the fruit pods, which are hairless and dark (brown or black) in the former, and often hairy and more yellowish-brown in the latter.

Tufted vetch *Vicia cracca*

Our other native hedgerow vetch is much less frequent than bush vetch, but much more striking. Druce (1926) has it as "very common", so this species may well have declined locally. 20th-century records are also more numerous than more recent ones, so that the decline may well be continuing.

**Identification**  The tall narrow spike of vivid blue-purple flowers marks this species out. It usually has more pairs of leaflets than bush vetch (up to 15).

**Notable sites**  There is a large patch beside the Grims Dyke path just west of Hampden House. Other recent records are Broomfield Farm, Hughenden Allotments, Little Burnham Wood and Flaxmans field, Hampden Bottom. It may have gone from Brickfields, Acrehill Field and Haypole because of neglect or change of management, even though it was at all three in the first decade of this century.

**Ecological associates**  As for other *Vicia* spp.
Hairy tare *Vicia hirsuta*

The tares are small-flowered native annual vetches and this species is the commoner of the two that occur locally, being quite frequent in dry rough grassy places. **Identification** The very pale lilac flowers (to 5mm long) occur in spaced spikes of from 2 to 7 and can easily be obscured by the surrounding herbage in which they scramble. The leaves are pinnate with around seven pairs of narrow leaflets and end in branched tendrils. The black fruit pods are more showy. These are distantly hairy, giving the species its common and specific names. **Notable sites** Roadsides, and edges of woods and fields with long grass are the best places to look. It is common by fields around Great Hampden, beside Sandwich Wood, in the meadow below Angling Spring Wood, and in allotments like those at Greenlands Lane. **Galls** Three or four galls are known, but none recorded locally. **Mines** Six leaf- or stem-miners are possible, but again not recorded locally so far. **Other ecological associates** None recorded in our area. **Human associations** This rather insignificant plant appears to have made little impression on mankind except as a frequent, but not usually troublesome, weed of cultivation. **Derivation** "Tare" was originally used for any vetch, and it may only be botanists who have given it a more restricted connotation for just these small-flowered species. It is used in the Bible to translate quite different, more injurious, arable weeds like darnel.

Smooth tare *Vicia tetrasperma*

This tare grows in similar places to *hirsuta* but only occasional in our area. **Identification** The flowers are larger than in hairy tare (up to 8mm), fewer (1-2) and a deeper colour, but the leaves just have up to six pairs of leaflets and unbranched tendrils. The pods are brown and hairless (smooth). **Notable sites** Much the same as hairy tare, this plant has been found on Hampden Bottom Farm, in Angling Spring Wood, Sandwich Wood and the neighbouring Home Field, and various allotments. **Galls** Largely as for hairy tare, but one midge appears to be more particular to smooth tare: larvae of *Dasineura loewiana* swell up the leaflets, making them pod-like. It was recorded in Angling Spring Wood in 2004. **Mines** *Liriomyza congesta* (noted on bush vetch above) has also been seen on smooth tare.
Slender tare *Vicia parviflora*

Not known in our area, this rare tare may grow elsewhere in the Chilterns (it is cultivated in the cornfield at College Lake Nature Reserve). It is like smooth tare but may have up to 4 flowers and fewer pairs of leaves (to 4), the latter having longer leaflets.

Broad bean *Vicia faba*

This familiar garden vegetable occurs very occasionally as an escape from cultivation. Its pink-based white flowers are conspicuous with a large black patch. The greyish pinnate leaves have broad leaflets. Most cultivated beans in our area are grown for export to the Middle East to make falafel and are smaller and coarser than our garden vegetable, although still edible. They have a special range of ecological associates, including the black aphid *Aphis fabae* (attended by ants), the rust *Uromyces viciae-fabae* and the Broad Bean Weevil *Bruchus rufimanus*, which is locally common where this plant is cultivated.
Wood vetch *Vicia sylvatica*
Not recorded in our area, this large scrambling vetch grows at Dancer's End Nature Reserve not so far away in the Buckinghamshire Chilterns. It has also been seen recently near Goring in Oxfordshire and Tring in Hertfordshire. It is more abundant on northern sea-cliffs. The large and beautiful flowers have a creamy-white lip and delicately purple-veined upper petals or standard.

Fodder vetch *Vicia villosa*
This fodder plant may escape and become naturalised from time to time in the Chilterns, although I have not seen it in our area. It has tall showy spikes of bluish flowers, brighter than those of wood vetch but paler than those of tufted vetch, and pinnate leaves.
Black medick *Medicago lupulina*

This widespread prostrate plant is annoyingly similar to lesser trefoil, despite being in a different genus. What makes it distinct is that its fruits, like all medicks (*Medicago*), consist of coiled pods.

**Identification** In the absence of fruits black medick can be separated from lesser trefoil by its brighter yellow flowers, hairy sepals and hairier leaflets with a small tooth (apiculus) at the tip instead of being indented. The fruits are black and very conspicuous when ripe.

**Notable sites** Any short turf, especially on chalk, is likely to have this plant, eg Prestwood Picnic Site, chalk slopes on Hampden Bottom Farm, Little Stacking Meadow, the meadow below Angling Spring Wood.

**Galls** Five gall-causers are known, two locally. The mite *Aceria plicator* can cause the growth of a tangled mass of leaflets at tip of a shoot (known as phyllanthy). The white grubs of the midge *Jaapiella jaapiana* feed inside a folded leaflet, usually a few together, the leaflet becoming slightly swollen along the folded midrib.

**Mines** Eight leaf-miners are recorded, but just one locally - the common fly *Liriomyza congesta* which affects many other members of the Fabaceae as well.

**Other ecological associates** The rust *Uromyces pisi-sativi* causes brown spots, as it also does on other related plants. The commonest weevil that grazes the leaves is *Apion pisi*, but another weevil *Hypera postica* was also recorded in the 1920s and may have recently been overlooked. The plant-bug *Coriomeris denticulatus* feeds on medicks, clovers etc.

**Human associations** Apparently none.

**Derivation** “Black” from the seed-heads. “Medick” (which can also be spelled without the ‘k’) has no reference to medicinal use, but derives from the ancient Greek *mēdikē* or lucerne (a larger medick used as a fodder plant), itself originally meaning “of the Medes”, a people neighbouring the Persians in classical times, from which lucerne may have been imported by the Greeks. Its current English use for the whole group of plants to which lucerne belongs is probably from bookish Latin *medica* used by botanically-minded medieval monks.
**Lucerne Medicago sativa ssp. sativa**

This taller medick is an introduction only seen occasionally in our area and, although perennial, does not tend to survive long in any one locality. As a fodder crop it has worldwide distribution and is perhaps the commonest source of animal fodder.

**Identification** Typical trefoil leaves and coiled pods. The, blue- or red-purple flowers are held in a head.

**Notable sites** It occurs now and again in various pastures on chalk or clay, most recently (2014-15) in Home Field behind Nairdwood Farm.

**Galls** Just one of the six known galls is recorded locally, a fungus *Physoderma alfalfae* which distorts young shoot tips.

**Mines** Of eight known, three have been recorded on lucerne locally, the flies *Agromyza nana*, *A. frontella* and *Scaptomyza graminum*.

**Other ecological associates** The lucerne plantbug *Adelphocoris lineolatus* occurs, but despite the name it also feeds on clovers and other fabaceous plants.

**Human associations** Introduced from Europe and Asia where it is extensively cultivated as animal fodder and its occurrence locally is no doubt as an agricultural relic, sometimes perhaps as a contaminant among other fodder seeds. The seeds themselves are poisonous, but they become harmless once they have sprouted. In Asia it has long been used for human consumption and has been believed to have beneficial medicinal effects there and in this country. The sprouts and seedlings (under the alternative name of alfalfa) are used in modern cookery for their nutrient value, particularly in vegetarian dishes and salads.

**Derivation** "Lucerne" is derived from the Provençal word *luzerno* or "glow-worm" (itself derived from the Latin *lux* "light"), because of the shiny pale brown seeds. "Alfalfa" is directly taken from the Arabic *al* "the" - *façfaçah* "best sort of fodder". The more distant root in ancient Sanskrit for "food" *bhaktam* demonstrates the plant’s historic lineage and its importance in Middle and Far Eastern cultures.

**Varieties** The plant is grown extensively in the United States and Europe and many cultivated strains have been developed with wide differences in flower colour, leaf size and seed colour. Subspecies *falcata* (sickle medick) has pods that are not coiled but slightly curved and yellow flowers. It is native in East Anglia and sometimes found as a casual in the wild - Druce (1926) mentions it as occurring rarely in our area - but it has been long extinct here.

Subspecies *varia* (sand lucerne) is a hybrid between the other two subspecies and can occur naturally and also as an introduced form of fodder. It has curved to slightly coiled pods and flower colours with an incredible range from yellow through green and purple to black! It has never been recorded locally, but has occurred casually elsewhere in the Chilterns.
Lucerne shoot galled by Physoderma alfalfa

Mine of Agromyza nana on lucerne

Mine of Agromyza frontella on lucerne

Mine of Scaptomyza graminum on lucerne

Spotted medick *Medicago arabica*
This low, more or less prostrate, native perennial only occurs occasionally in our area and is rarely persistent, preferring sandier soils. It is generally found at the side of tracks or roads.  
**Identification** The conspicuous black spots on the trefoil leaves make this plant easy to "spot" and to identify. It has many fewer flowers per head than black medick and the green coiled pods are spiny.  
**Notable sites** There is only one record from before the 21st century (Hughenden Valley), but it has been seen there since and at Prestwood Sports Centre, Dennerhill Lane, by Greenside and The Glebe in Prestwood.  
**Ecological associates** No galls are recorded in Britain and the mines are probably as for black medick. No associates recorded locally.
**Meadow vetchling *Lathyrus pratensis***

Also known as "meadow pea", this is a widespread inhabitant of bushy places or long grass, where it scrambles with its tendrils over other plants.

**Identification** The yellow flowers are in short spikes. The tendrils come from between the single pair of narrow leaflets, which have large pointed arrow-shaped stipules at their base. The ripe pods are black.

**Notable sites** Widely recorded, eg Boss Lane, Kingstreet Lane, Mapridge Green Lane, but seen most recently at Sandwich Wood (west edge) and on Hampden Bottom Farm.

**Galls** Eleven galls are recorded in Britain, but none have been seen locally.

**Mines** Eight known in this country, and two recorded locally, *Liriomyza congesta* (as for bush vetch above) and *Agromyza varicornis*.

**Other ecological associates** The micro-fungi *Isariopsis carnea* & *Ramularia deusta* are known.

**Human associations** None.

**Grass vetchling *Lathyrus nissolia***

This easily overlooked native plant occurs only in a few places locally, but where it is found it can be abundant. Interestingly there are no local records before 1994 and it is not mentioned in Druce (1926), so that it seems to have been a recent colonist. Elsewhere I have often noticed it in grassy verges by new roads, so it does seem to be able to travel around.

**Identification** The leaves are so like grass that, unless it is flowering, it is almost impossible to pick out this plant in the long grass where it always grows. It has just one or two smallish flowers on long slender stalks, but these are bright crimson and fairly noticeable even among grass. The green pods are also long and slender.

**Notable sites** Although seen in just over a dozen fields, there are two where its presence is particularly prominent - Rectory Field (which has no public access) and Stony Bank, which has a public footpath that passes through the main colony. Timing, however, is everything and to catch the flowers your best chance is mid-June.

**Ecological associates** No galls are known, although leaf-miners on meadow vetchling are also likely to occur on this plant.

**Human associations** None.
Broad-leaved everlasting-pea *Lathyrus latifolius*

Garden escape occasionally encountered on bushy roadsides.

**Identification** Like meadow vetchling this has a simple pair of oval leaves from between which comes a tendril, although in this case the latter is branched, and the whole plant is much larger in all its parts, with bright pink flowers in spikes. The stems have broad wings.

**Notable sites** There are no records before 2001, when it was seen at Brickfields. Since then it has also been seen in Hughenden Valley, Little Kingshill, and in Prestwood on the Lovell Estate and the High Street.

**Ecological associates** No galls are known, but there are ten possible leaf-miners. None have been noted locally.

**Human associations** Cottage garden plant.

**Derivation** The plant is perennial, which may be why it has the epithet "everlasting", as the flowers do not seem to have an extended lifetime.

**Varieties** The rare native *Lathyrus sylvestris*, Narrow-leaved everlasting-pea, may occur in the Chilterns, but it does not seem to have been seen for some time. It has dowdier flowers and narrower leaflets. Tuberous or Fyfield pea *Lathyrus tuberosus* is a plant introduced for its edible tubers that grew at Sands Bank, High Wycombe, 1984-86, but I do not think it survives there. It has bright red flowers and oval leaflets. It was once naturalised at Fyfield, Essex, which is how it gained its name.
Spring pea *Lathyrus vernus*
Spring pea is a garden perennial that has purple flowers, long-pointed oval leaves, stems that are hardly winged (but sharply angled) and no tendrils. I found it naturalised at Peterley Manor Farm (near the greenhouses) in 2015, although I am not aware that it was ever cultivated there.

Common restharrow *Ononis repens*
Rest-harrow is a denizen of chalk slopes that have not been fertilised and is restricted locally to a few of the best grassland sites.

**Identification** The pink pea-flowers are borne along very hairy, somewhat woody stems that sprawl over the turf or grow erect in longer grass. The leaves are simple, well-toothed, with large stipules at their base. The hairs have glands at the tip that give a resinous odour.

**Notable sites** It is abundant on Speen Access Field. Also at Prestwood Picnic Site, Meads Garden Field, Coombe’s Orchards and a field beside Gomms Wood, Cryer’s Hill; and on grass verges beside Deep Mill Lane, Bryants Bottom Road and Cryer’s Hill Road.

**Galls** Only one gall is known in south England, caused by a mite distorting whole shoots, but it has not been noted locally despite a dedicated search.

**Mines** Only two leaf-miners may occur in our region, one of which, that of the fly *Liriomyza cicerina*, occurs sparsely in our area.

**Other ecological associates** In the last few years the pretty red-and-black bug *Corizus hyoscyami*, previously only known from the south coast, has moved into our area and has been found on rest-harrow at Prestwood Picnic Site. *Gampsocoris punctipes* is a rest-harrow specialist that feeds on the glandular secretions. Although small, its banded and spotted antennae and legs (and the bright green immature stages) are conspicuous. Another bug on rest-harrow, *Dicyphus annulatus* has not been recorded since 1969. The weevil *Apion ononicola* was recorded once, but as long ago as 1919, although feeding damage to leaves that might be caused by it is still seen. Local moths whose caterpillars feed on rest-harrow include *Marasmarcha lunaeductyla*, bordered sallow and satyr pug (whose larvae have been found on rest-harrow at the Picnic Site). A rust fungus occurs commonly and may be *Uromyces anthyllidis f. ononidis*, although no rust is recorded on rest-harrow in the British list.

**Human associations** Like the bulk of this family, rest-harrow seems not to have had any medicinal applications. Its thick roots were, according to Mabey (1996), sometimes chewed like liquorice.

**Derivation** "Rest" in this case is short for "arrest" and the name refers to its thick roots obstructing ploughs. As a perennial of established grassland, this could only have occurred when breaking up virgin land.

**Varieties** Our plant is ssp *repens*. Subspecies *maritima* only occurs on the coast. Spiny rest-harrow *Ononis spinosa*, with stout spines and bushier, is now rare in the Chilterns, but still found around Pitstone Hill and Ivinghoe.
Sainfoin *Onobrychis viciifolia*

Once a typical plant of our area ("common" in Druce 1926), because it was once used as a fodder crop, sainfoin is now distinctly uncommon, but occurs occasionally beside agricultural land on chalk.

**Identification** Distinctive with its stout spike of pink pea-flowers and pinnate leaves with narrow leaflets.

**Notable sites** Most consistently seen at Stonygreen Bank, where it is well established in chalk grassland (first recorded in 1986, although the Davis family who own the farm remember it there long before that). Also regularly at a field north of Broomfield Farm and one on Hampden Bottom Farm (where it was known to have been sown in 2007).

**Galls** None of the three that might occur are known locally.

**Mines** Only one leaf-miner is known on sainfoin in Britain, the moth *Aproaerema anthyllidella*, which has been recorded (from light-traps) at Walter’s Ash. It affects many other genera within the Fabaceae as well.

**Other ecological associates** Like most of the Fabaceae, sainfoin flowers are popular with bees which cross-fertilise it. It is thought that the grass *Bromus interruptus*, now extinct in the wild, had some relationship with this plant.

**Human associations** European strains were introduced as a fodder plant in the 17thC, but it may have been native in chalk grassland.

**Derivation** The word was introduced from France where it was used by medieval monks for the original Latin *sānum fēnum* "healthy hay" (referring to its use as a fodder crop), although this was originally used for lucerne and only later extended to sainfoin as well, for which it eventually became the single referent.

**Varieties** Plants in chalk grassland (like those at Stonygreen) are lower, more prostrate and deeper pink; these represent the native form (ssp. *viciifolia*). Introduced plants (ssp. *decumbens*) are usually more erect and robust, and this applies to our other local records.

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**Goat’s-rue *Galega officinalis***

Attractive introduced plant that is becoming increasingly common beside roads and on wasteland.

**Identification** Bushy perennial with tall spikes of lilac flowers and pinnate leaves.

**Notable sites** Long known (since at least 1986) in the Brickfields and Sports Centre area of Prestwood; also recently along Watchet Lane, Little Kingshill, and at HUGHENDEN Valley and Cryers Hill.

**Galls** None known in Britain.

**Mines** The fly *Liriomyza congesta*, found on other members of the Fabaceae, also mines the leaves of goat’s-rue.

**Other ecological associates** The flowers lack nectar and are seldom visited by bees.
**Human associations** Introduced in the 16thC from south Europe into cottage gardens as a medicinal herb. Potions derived from the leaves are diaphoretic (promoting sweating - used against fevers) and galactogogic (increasing milk secretion in cows). It was once used in a folk remedy against worms. The juice is bitter and turns saliva green (tasting is not recommended).

**Derivation** "Rue" was commonly used for any herb, especially with cut leaves. The abnoxious smell of the crushed leaves is probably why it received the "goat's" prefix.

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**Kidney vetch** *Anthyllis vulneraria*

This native of established chalk grassland has never been common in our area and occurs in just a few key sites.

**Identification** Low, sprawling plant with rounded heads of yellow flowers among white-downy sepals. The greyish leaves are of two types - pinnate up the stem, but lower ones either undivided and lanceolate or with a pair or two of very small basal lobes.

**Notable sites** Currently at two local sites, Prestwood Picnic Site (about 20 plants) and Speen Access Field (several strong colonies). Formerly at three other sites.

**Galls** None known in Britain.

**Mines** Only three leaf-miners are known for certain on kidney vetch in this country. All are recorded locally - the moth *Aproaerema anthyllidella* and the fly *Liriomyza congesta*, both occurring on many other plants in the Fabaceae, and another fly *Scaptomyza graminum*, found on many other plants besides.

**Other ecological associates** Kidney vetch is celebrated among naturalists as the foodplant of the uncommon Small Blue butterfly, which occurs generally around the colonies at Speen Access Field. The rust fungus *Uromyces anthyllidis* commonly causes dark brown spots on the leaves. Bumble bees pollinate the flowers (I have seen *Bombus hortorum* visiting).

**Human associations** None, although there are vague references to its being used to heal wounds (a local name in some places is "woundwort" and the specific Latin name contains the same connotation - *vulnus* "wound").

**Derivation** There are many references to this vetch's common name being derived from the fact that it was used to treat kidney complaints, but there seems to be no evidence that the plant was ever used for such a purpose, so this is just a supposition in a circular attempt to explain the name. Other sources mention the "kidney-shaped flowers", but I can see nothing kidney-shaped about them at all. All one can say with certainty is that no-one really knows how it got its name!

**Varieties** Our plants are almost all yellow-flowered, but occasional pink/red-orange ones have been seen at Prestwood Picnic Site. These are, however, just a matter of natural variation and they are not the red-flowered variety *coccinea* which occurs only on the coasts of Cornwall and West Wales.
Tall (or Golden) melilot *Melilotus altissimus*

Tall plant of rough places that was probably introduced from Europe by the first men to come to Britain. It was not mentioned for our area by Druce (1926) - nor were any other melilots.

**Identification** Erect, lanky plant with spikes of small yellow flowers and trefoil leaves.

**Notable sites** Due to the instability and temporariness of its wasteland habitat there is no established site. In the last few years it has been seen at Brickfields, Great Missenden station car-park and a field near Honor End. There are older records from Little Kingshill and Hughenden.

**Galls** Although two weevils in the genus *Tychius* can cause galls, one of them has only been seen once in this country and the other apparently feeds on seeds within the pods without causing a gall.

**Mines** There are five flies that cause mines on melilot in this country and all of them are common in our area -
Agromyza frontella, A. nana, Chromatomyia horticola, Liriomyza cicerina and L. congesta.

Other ecological associates The only one noted locally is the plant-bug Coriomeris denticulatus. Pollination is by bees, with which it is very popular, so that where common it is an excellent honey plant.

Human associations Once used as a fodder plant and a common escape in previous centuries. Powder from the dried plant has been used medicinally. It has a strong scent of hay from the chemical coumarin. Packed with clothes, dry melilot can scent them and inhibit moths.

Derivation From the Latin mel “honey” (from the sweet scent of the flowers) and lotus, a term originally for the renowned Asian water-lily, but employed in Europe for the clovers and trefoils (as in the use of Lotus for the bird’s-foot trefoil genus).

White melilot Melilotus albus
Rare in our area, this is a white-flowered version of tall melilot. I only have one record this century, from a field on Hampden Bottom Farm (2015). There are two records from the previous century - Great Missenden station car-park 1999 and Little Hampden 1985.

Ribbed melilot Melilotus officinalis
Even rarer than white melilot, I discovered this plant in the same field on Hampden Bottom Farm in 2015. There had only been one previous record, Monkton Wood in 1987. With yellow flowers like Melilotus altissimus, it is distinguished by smaller pods (<5mm), mostly one-seeded (not 2), brown when ripe and not hairy; the keel on the flower is shorter than the wings, but about the same length in altissimus.

Horseshoe vetch Hippocrepis comosa
Always rare in our area it is now extinct, although it still grows in a few of the best chalk grassland slopes left in the Chilterns (eg Yoesden Bank, Aston Rowant). Superficially like a small kidney vetch or bird’s-foot trefoil, but with a non-woolly head of smaller deep yellow flowers, pinnate leaves, and narrow brown pods in the usual “bird’s-foot” pattern, wavy and breaking into short segments, each with the eponymous horseshoe shape. It is the food-plant of the Chalkhill and Adonis Blues, which are consequently rare also, but usually present where there is plenty of horseshoe vetch. There is a pre-WWII record of chalkhill blue from Prestwood Picnic Site, so it presumably once grew there. As conditions gradually improve again at this site, it could eventually be considered a candidate for re-introduction of this plant, although it will be best to see if the current colony of kidney vetch is capable of growing and attracting small blue first. The biggest problem, as at many such sites, is that the size of suitable habitat has been reduced by house-building over the parts of once more extensive territory that were best for the plants and butterflies, so that there is a limit on its potential holding capacity.
Bird’s-foot *Ornithopus perpusillus*

Another rare plant that has become extinct locally, bird’s-foot is quite different from bird’s-foot trefoil with which it shares its name. The plant, which often lies flat to the ground, has pinnate, not trefoil, leaves and tiny pale pink and cream flowers in small heads. Easily overlooked, it is quite beautiful under close examination. Recently, the closest place I have seen it to our area is in Penn Wood. Unlike the chalk-loving vetches above, this plant likes bare dry acid sandy places, so that there is hardly any suitable habitat left at all in our area, as such places have been built on or become overgrown. Stockgrove Park area in the far north of Bucks is a good place to see it.

[Wild liquorice *Astragalus glycyphyllos*]

Although there are no records from our area, this is a former Chiltern species, albeit very rare these days. This declining denizen of chalk scrub is a bushy perennial with large spikes of cream flowers and pinnate leaves, a member of the milk-vetch genus. The thick milky sap of some foreign species is used for making gum. The related *Glycyrrhiza glabra*, which is not British, is the source of liquorice in the shape of its woody stems that can be chewed. It is also quite close to goat’s-rue above. Druce (1926) mentions Coombe Hill and Great Kimble as having good quantities, but I have not seen it around there. It still grows at Sundon Chalk Quarry and the neighbouring Moleskin chalk grassland in Bedfordshire, and in Hertfordshire at Tingley Down. The related Purple milk-vetch *Astragalus danicus* is even rarer, but still hangs on, as far as I know, at Therfield Heath in Herts, although extinct in Bucks.]

Wild liquorice

Purple milk-vetch
Gorse *Ulex europaeus*

Gorse was once extensive over the Chiltern commons - it grows well on the acid clays overlying chalk and is partly resistant to grazing pressure. It would have been one of the dominant shrub over much of Prestwood and Kingshill Commons, Hampden Common and on top of Denner Hill, defining the habitat in the term “furze”. It is now reduced to a sparsely scattered population, hanging on in marginal situations.

**Identification**  This thorny shrub grows leggy, with increasing bare wood below as it expands in breadth and height, but its show of deep yellow flowers, at their best before most other flowers have even thought about opening, is an iconic sight in early spring (although some flowers can usually be found throughout the year). Their coconut smell is also distinctive and can fill the air on a warm day. Later, on a hot day in summer, the sound of the black pods popping open to release their seeds is another familiar sound in those areas still blessed with plenty of gorse scrub. The leaves are reduced to strong branched spines.

**Notable sites**  It still grew on the last remnant of Prestwood Common in 1939 according to Winifred Peedle, but this is now playing-fields and devoid of scrub. It was also to be found at Prestwood Picnic Site at that time, but is no longer there. It is most common in Lawrence Grove (although in the shade it grows rather leggy), and can easily be seen along its boundary with Wycombe Road. It also appeared at the Sheepsow pond in 2009 immediately after restoration, despite a complete absence for many decades, and now forms a pleasant feature in blossom in April. It is scattered elsewhere, including Brickfields and Hampden Common.

**Galls**  Four galls are known in Britain, affecting the buds, shoot-tips or stems, but most are uncommon.

**Mines**  The spines are potentially mined by one fly and one moth, but they are rarely found.

**Other ecological associates**  The flowers are attractive to insects and pollination is particularly effected by bumble-bees and the small mining bee *Andrena ovatula*. On the flowers I have collected two pollen beetles *Meligethes aeneus* and *M. carinulatus*, the cryptophagid beetle *Micrambe vini*, and the bug *Kleidocerys resedae*. The larvae of the moths *Coleophora albicosta* and *Brachmia blandella* feed on gorse (the former in the flowers). Other beetles found locally on gorse are the scolytid *Phloeophthorus rhododactylus* (whose larvae develop in the stems) and two weevils - *Apion ulicis* (which eats the seeds) and *Sitona regensteinensis*. The latter was first recorded locally in 1927, when another weevil *Hypera venusta* was also found on gorse. Plant-bugs on gorse include the Gorse Lacebug *Dictyonota strichnocera* and the Gorse Shieldbug *Piezodorus lituratus*. It is gratifying that a good part of the what would have been a major ecological community at the time of flourishing heaths and commons still manages to survive to the present day, but there have certainly been losses - apart from *Hypera venusta*, the last Stonechat was seen in the area in 1958, and Dodder *cuscata epithymum*, a parasitic plant on gorse, is certainly extinct.

**Human associations**  As a prevalent plant on the old commons, gorse was well exploited by local cottagers, using its dried branches for fuel and making brooms, while their animals (goats, cows, horses) browsed the greener tips despite the thorns. It may have been used for boundary hedging around the common, although no such hedges survive. To the landowner, however, gorse signified “waste land” that could not be used for profit, one of the reasons behind the enclosure of the commons in the 19thC and the destruction of most of the gorse communities.

Rev. William Forster Lloyd, an Oxford professor, lived in Prestwood Lodge on the edge of Prestwood Common in the mid-19thC, and his publications arguing that common-land was uneconomic (“The Tragedy of the Commons”) were influential in persuading Parliament to sanction enclosures. In the event, the enclosed land, on poor soil, soon became impoverished and unsuitable for agriculture, so that the land was eventually sold for residential housing.

**Derivation**  The Old English *gorst* ultimately derived from an ancient Indo-European root for “thorn”, as in Pahlavi *xār* “thorn”, Greek *chersos* “dry heathy land”, Latin *hirtus* “shaggy, prickly” and Anglo-Saxon *haer* “hair”. The same root can be found in the names of many bristly animals, and in the Latin for gorse *ulex*. Also see holly (section 9).

**Varieties**  Dwarf gorse *Ulex minor* probably grew on some of the old commons (it is mentioned for our area in Druce, 1926). A low shrub smaller in all its parts, with softer spines, it has suffered a major decline with the loss of heathland and is no longer to be found in the Chilterns; the nearest location now is protected heathland in Surrey.
Sheepwash Pond 2 years after restoration and regeneration of gorse
**Broom Cytisus scoparius**

In our area, an uncommon native shrub scattered as individual plants in woodland and hedgerows, avoiding chalky soils.

**Identification** Large yellow flowers grow in spring along tall green stems that are often bare at the tips. Leaves are trifoliate but small and fall early.

**Notable sites** Good numbers at Brickfields; also recently recorded in Angling Spring Wood. Other records few, over ten years old, and widely dispersed.

**Galls** A dozen or so gall-causers are recorded from south England, but many are uncommon. None are recorded locally.

**Mines** Four insects mine the stems and two the leaves, but none have been noticed in our area.

**Other ecological associates** Although broom is of low incidence in our area as a native, it is grown in gardens, allotments, parks and at Priestfield Arboretum, so that some associates have been recorded. These include several already mentioned under Gorse - Gorse lacebug, *Sitona regensteinensis* and *Phloeophthorus rhododactylus*. More particular to broom are the bean-weevil *Bruchidius villosus* and the sawfly *Rhogogaster genistae*. Pollination is effected by bumble-bees.

**Human associations** Although broom has in the past found numerous uses it is unlikely that it was of any significance in our area, as it has always been uncommon. The name itself comes from the fact that its long supple twigs could be made into effective brooms, but gorse would more likely have fulfilled this function locally. The buds and flowers can be used in salads. Broom (especially the young shoots) contains the drug sparteine, which is a strong diuretic, and has long been used for kidney complaints and other illnesses. Large doses lead to hallucinations and stomach upsets (Mabey 1996).

**Derivation** Old English *brōm*, also used generally for "brushwood", another term incorporating the idea of its use for sweeping. Both "brush" and "broom" are related to the medieval Latin *bruscum*, a dense proliferation of twigs sometimes occurring on hazel, another potential source of sweeping tools.

**Varieties** Our taxon is ssp. *scoparius*. Garden cultivars often have some degree of red colouring to the flowers, and these sometimes escape. Another garden escape is Hairy-fruited Broom *Cytisus striatus*, which has long white hairs all over the black pods (only along the edges in *scoparius*). This was once naturalised in Lawrence Grove, but has since been cleared.

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**[Petty whin Genista anglica]**

Stated by Druce (1926) as rare and very local on wet heaths, this plant may once have occurred sparsely on the commons, but is certainly extinct here now and in severe decline across the country. A low undershrub with small flowers two-thirds the size of those of Broom, it has disproportionately large inflated seed-pods. The leaves are simple pointed oval, not trifoliate. It survives at Moorend Common south of High Wycombe. "Whin" is a northern name for "gorse" from old Scandinavian.
Common milkwort *Polygala vulgaris*

The milkworts have a small but highly distinctive flower of very unusual (and unique) form. Common milkwort is abundant where it occurs, but this is only on the best surviving chalk grassland slopes.

**Identification** Low creeping perennial with simple oval leaves, the flower spikes bending upwards. The colour of the flowers is most commonly blue, but pink and white forms are both frequent. Two the five sepals are enlarged and petal-like with prominent branching veins. The white stamens on top of a single Y-shaped filament emerge prominently from the flower.

**Notable sites** Prestwood Picnic Site, Meadsgarden Field, tops of the fields below Warren Wood (Hampden Bottom Farm), Hatches Bank, Coombe’s Orchards.

**Galls** Two known in Britain, but none locally.

**Mines** Only one leaf-miner known in Britain, none in our region.

**Other ecological associates** The Small Purple-barred moth is the only local insect known to have milkwort as its food-plant.

**Human associations** Although herbals often refer to the use of this plant as a means of stimulating lactation in nursing mothers, there is no evidence of such a folk use (Allen & Hatfield 2004), although there are folk tales about cows producing more milk after feeding on pastures with much milkwort (almost certainly untrue). As the plant does not exude any milky juice itself, it is difficult to know how it obtained its name (which is reflected in the Latin genus, too, which means “plenty of milk”). The original *polygala* of Classical times may, however, have been a completely different plant.

**Derivation** See last paragraph.

**Varieties** Our plant is ssp *vulgaris*. The rare Chalk Milkwort *Polygala calcarea* was recorded once each by two different recorders in the 1990s – near Boss Lane and in Meadsgarden Field. Both are almost certainly errors; it does not grow now at the latter site, and as this is recovering chalk grassland it is even less likely to have occurred earlier. The two can be difficult to tell apart, the most reliable distinction being the existence of a rosette of leaves at the base of the stem of *calcarea*. Once familiar with it, however, the "jizz" of chalk milkwort is quite distinct - it is a more intense shade of blue and a stockier more erect plant. In the Chilterns, chalk milkwort grows at the far SW tip in Hartsock Reserve. It is also abundant at Aston Upthorpe Reserve on the Berkshire Downs. Never known in our area, but growing on some Chiltern heaths (eg Frieth) is Heath Milkwort *Polygala serpyllifolia*, the acid soil counterpart of *vulgaris*, told by leaves opposite at the base of the stem (not alternate) and outer sepals acute at the tip (not blunt).
Heath milkwort (pale form) - note narrow acute outer sepals

Chalk milkwort at Aston Upthorpe