

EUPHORBIA WORKSHOP NOTES

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Issue: 2

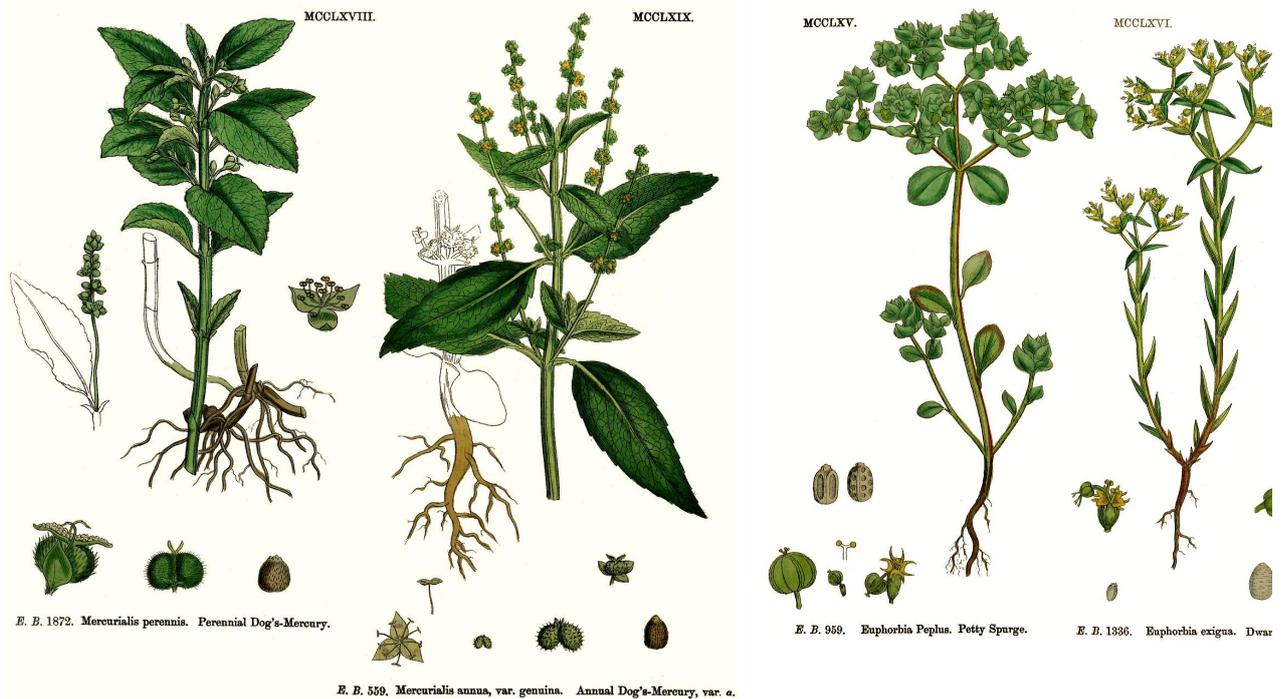
November 2016

Introduction

The Spurge family (*Euphorbiaceae*) is a fairly large family world-wide, with 220 genera and approaching 6,000 species. It has been larger in the past, but DNA studies have split off several other families. It is also very diverse, ranging from small delicate weeds to showy flowers, trees and the Old World analogues of the cacti.

In Britain we are concerned with only two genera (apart from a couple of casual species): *Mercurialis* and *Euphorbia*. Both bear separate male and female flowers. The most obvious differences between them are these:

- *Mercurialis* normally has male and female flowers on separate plants (dioecious) and the individual flowers are readily distinguishable in each sex; both male and female have 3 perianth segments. *Euphorbia*, on the other hand, has male and female flowers separate but on the same plant (monoecious) but this isn't immediately obvious, since the male flowers are each reduced to a single stamen and several are borne together with one female flower inside a single structure of bracts referred to as a **cyathium**. This is a feature only really shared with the genus *Dalechampia* (Butterfly-vines), some of which are ornamental and found in horticulture, but not hardy outdoors in Britain.
- *Mercurialis* female flowers have 2 styles, and the ovaries (and therefore fruiting capsules) have two cells. *Euphorbia* female flowers have 3 styles, and 3-celled ovules (and therefore fruiting capsules).



A quick key to all genera (native and non-native) found in Britain

- 1 Inflorescence generally umbellate; flowers without perianth, in small bunches surrounded by an involucre (cyathium); ovary stalked; plant with milky sap.....*Euphorbia*
- 1' Inflorescence not umbellate; perianth present; flowers not surrounded by an involucre; ovary sessile; milky sap absent 2
- 2 Plant grey-tomentose with stellate hairs..... *Chrozophora*
- 2' Plant glabrous or with simple hairs..... 3
- 3 Shrubby plant with alternate palmately lobed leaves up to 60cm long; flowers monoecious; capsule spinulose, 1-2cm diameter.....*Ricinus*
- 3' Herbaceous plant with opposite unlobed leaves up to 12cm long; flowers generally dioecious; capsule not spinulose, less than 1cm diameter..... *Mercurialis*

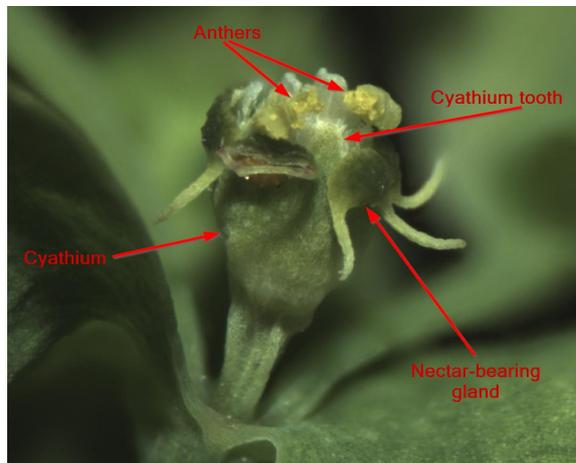
Structure of the Euphorbia inflorescence

The whole cyathium (floral unit) sits either within the axil of a leaf (this is the subgenus *Chamaesyce*, sometimes treated as a separate genus) or as part of an umbel-like cyme (i.e. each branch ends in a flowering unit with the inflorescence extended by branches coming off to the sides). Each branch has a leafy bract at the base. These bracts may be like or unlike the normal leaves in outline, according to species.



Inflorescence (one branch removed) of *Euphorbia peplus*

The cyathium forms an enclosing cup for the other floral parts, which are without petals or sepals. The upper rim of the cyathium has 4 or 5 small teeth alternating with (usually) the same number of nectar-producing glands, which are much more conspicuous. These glands can have a smoothly curved outer edge, or (as here) carry a pair of points or horns, according to species. There are several male flowers consisting only of a stalked stamen; the anthers are just appearing in this picture. There is a single female flower which may not be very obvious until the fruit starts to develop, when its stalk elongates.



Cyathium of *Euphorbia peplus*

This partially developed flower shows the 4 glands of *Euphorbia peplus*; at this stage the individual flowers are still concealed by the cyathium teeth.



Glands of Euphorbia peplus

Once the fruit starts to develop its stalk lengthens, and it tends to loll over the side of the cyathium. Here the 3 forked styles are still visible, and the 3 valves of the capsule are obvious, accentuated by the double ridges that mark the valve boundaries in this species. Other species have more rounded, less clearly demarcated valves and some have bumps or protusions in varying shapes, which are an important diagnostic feature for many species.



Fruiting capsule of Euphorbia peplus

Euphorbia stamens have a curious structure, with the filament jointed in the middle, rather like a knee.



Euphorbia peplus stamen

A key to Euphorbias in the vicinity of Hampshire

There are over 30 *Euphorbia* species recorded in Britain, but of these only 12 are native or archaeophyte, one of those is extinct, and several are rare casuals. 18 of these are recorded in Hampshire; one is a very rare native and 3 are very rare introductions. Add to this subspecies and hybrids, and the total rises to 21 taxa. Add to these the introduced taxa in neighbouring vice-counties, and this becomes 31. A few additional species have been added to this key although they are not yet recorded in the region, since they may well appear and can be easily confused with some known similar species.

- 1 Plant a shrub to 2m, branching towards the top.....*E. mellifera*
- 1' Plant herbaceous (but may be woody-stemmed)..... 2
- 2 Plant procumbent; leaves opposite; stipules present; leaves and bracts similar..... 3 (subgenus *Chamaesyce*)
- 2' Plant erect; leaves opposite or very nearly so, 4-ranked; stipules absent; leaves and bracts dissimilar.....
- 2'' Plant usually erect or ascending; leaves alternate; stipules absent; leaves and bracts often differing..... 4
- 3 Stems long-hairy; stipules triangular-subulate, c. 1mm; leaves usually dark-blotched; leaf upperside sparsely hairy, leaf underside and petiole more so; capsule hairy..... *E. maculata*
- 3' Stems sparsely softly hairy; stipules linear-lanceolate, 1-1.5mm; leaves usually unblotched; both leaf surfaces pubescent; capsule hairy..... *E. thymifolia*
- 3'' Plant entirely glabrous; stipules fused into a triangular lacinate or fimbriate white scale 0.5 mm long; capsule glabrous, sharp-angled..... *E. serpens*
- 4 Glands untoothed and convexly rounded on outer edge..... 5
- 4' Glands concave, emarginate or prolonged into horns on outer edge..... 16
- 5 Ovary and capsule smooth to granulose (but sometimes hairy)..... 6
- 5' Ovary and capsule obviously warty or papillose..... 9
- 6 Annual; leaves conspicuously toothed; bracts bright or yellowish-green; frequent weed of arable and waste ground..... *E. helioscopia*
- 6' Perennial; leaves entire or finely serrate; bracts variously yellow, green, red or purple-tinged; rare introductions... .. 7
- 7 Ovary and capsule conspicuously hairy; bracts yellow to green, sometimes red-fringed..... *E. corallioides*
- 7' Ovary and capsule more or less glabrous..... 8
- 8 Involucral bracts yellow to yellowish-green, cyathial bracts similar; capsule 9-11mm..... *E. wallichii*
- 8' Involucral bracts yellow, orange or red, cyathial bracts orange to dull reddish-purple; capsule c. 4mm. *E. griffithii*
- 9 Annuals with a simple root system with one main stem and lacking sterile shoots..... 10
- 9' Rhizomatous perennials normally with several main stems and sterile shoots..... 11
- 10 Umbels with 5 main branches; bracts at base of primary umbel rayssimilar to leaves but differing from bracts at higher levels; capules with hemispherical papillae..... *E. platyphyllos*
- 10' Umbels with 2-5 main branches; bracts at base of primary umbel rays intermediate between leaves and higher-level bracts; capsules with more or less cylindrical papillae..... *E. stricta*
- 11 Capsules with hemispherical or flattened conical papillae, no taller than wide..... 12
- 11' Capsules with cylindrical or conical papillae, taller than wide..... 13

12	Terminal umbels with up to 5 main branches.....	<i>E. oblongata</i>
12'	Terminal umbels with >5 main branches.....	<i>E. palustris</i>
13	Bracts dull green up to anthesis.....	<i>E. dulcis</i>
13'	Bracts yellowish up to anthesis, often greening later.....	14
14	Primary umbel rays 5-9; papillae narrowly conical, 0.5-1mm long.....	<i>E. cornigera</i>
14'	Primary umbels rays not exceeding 6; papillae cylindrical or filiform.....	15
15	Leaves entire, glabrous on upper face; primary umbel rays 4-5; capsule 5-6mm; papillae cylindrical, a mixture of short and long.....	<i>E. hyberna</i>
15'	Leaves finely toothed, more or less pilose on upper face; primary umbel rays 3-5 (occ. more); capsule 3-5mm; papillae long, fine (>3x length / breadth), often reddish- or purple-tipped.....	<i>E. epithymoides</i>
16	Stems glabrous or hairy; opposite pairs of bracts fused at base.....	17
16'	Stems more or less glabrous; opposite pairs of bracts not fused at base.....	20
17	Stems glabrous; leaves rigid, fleshy, glaucous.....	18
17'	Stems hairy; leaves generally not rigid and fleshy, if so then not glaucous.....	19
18	Leaves obovate to suborbicular.....	<i>E. myrsinites</i>
18'	Leaves lanceolate to narrowly obovate.....	<i>E. rigida</i>
19	Primary branches of topmost whorl of inflorescence 4-12; upper surface of leaves dark green, dull mid green or purple; capsules glabrous.....	<i>E. amygdaloides</i>
19'	Primary branches of topmost whorl of inflorescence 10-20; upper surface of leaves bluish-green; capsules densely hairy.....	<i>E. characias</i>
20	Annuals or perennials without rhizomes (but lower part of stem sometimes buried).....	21
20'	Rhizomatous perennials.....	24
21	Annuals with thin leaves; bracts and leaves similar (arable, wate ground and open habitats).....	22
21'	Biennials to perennials with fleshy leaves; bracts and leaves markedly different (coastal).....	23
22	Leaves linear to narrowly oblong, unstalked.....	<i>E. exigua</i>
22'	Leaves ovate to obovate, stalked.....	<i>E. peplus</i>
23	Leaves narrowing to base; midrib prominent on leaf underside; seeds pitted.....	<i>E. portlandica</i>
23'	Leaves rounded at base; midrib obscure on leaf underside; seeds smooth.....	<i>E. paralias</i>
24	Leaves all <3mm wide, often linear, those of side-shoots often crowded like conifer foliage.....	<i>E. cyparissias</i>
24'	Some or all leaves >3mm wide, not linear, those of side-shoots less crowded.....	25
25	Leaves oblanceolate to oblong-oblanceolate, widest above middle, narrowing gradually to base.....	26
25'	Leaves linear- to oblong-lanceolate, widest at or below middle, not narrowing gradually to base.....	27
26	Leaves up to 4mm wide.....	<i>E. x pseudoesula</i>
26'	At least some leaves >4mm wide.....	<i>E. esula</i>
27	Leaves rounded to broadly cuneate-rounded at base.....	28
27'	Leaves abruptly narrowed to a cuneate base.....	29
28	Leaves 4-12mm wide.....	<i>E. boissieriana</i>
28'	Leaves 3.5-5.5mm wide.....	<i>E. waldsteinii</i>

- 29 Leaves mostly 4-5mm wide.....*E. x pseudovirgata*
- 29' Leaves mostly 2-3mm wide.....*E. x gayeri*

Keys to subspecies and varieties

Euphorbia exigua

- 1 Plant annual; stem simple or with occasional slender branch from the base; leaves linear, up to 15mm.....*var. exigua*
- 1' Plant biennial or short-lived perennial; branching from the base making a dome; leaves linear to linear-lanceolate, up to 30mm.....*var. diffusa*

Euphorbia amygdaloides

- 1 Rhizomes short or absent; leaves of 1-year stems dull pale to medium green, ± hairy on undersides and margins *subsp. amygdaloides*
- 1' Rhizomes long; leaves of 1-year stems leathery, dark, shiny and ± glabrous..... *subsp. robbiae*

Euphorbia characias

- 1 Stems to 80cm; glands dark brown, rarely yellow, emarginate or with short horns.....*subsp. characias*
- 1' Stems to 180cm; glands yellowish, with long horns.....*subsp. veneta*

Species accounts (with descriptions for taxa not in Stace)

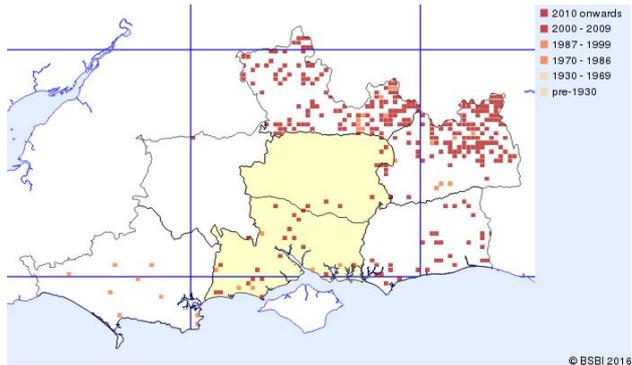
E. amygdaloides* L. subsp. *amygdaloides
(Wood Spurge)
 Native and widespread in woods and hedgerows. In Hampshire, most common on the Tertiary strata; on the Chalk, mostly where there are superficial deposits. The map shows the distribution of the species, since most vice-counties do not record to subspecies and even in Hampshire subspecies recording is substantially incomplete.

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***E. amygdaloides* L. subsp. *robbiae* (Turrill)**

Stace (Turkish Wood Spurge)

Native of NW Turkey. A commonly grown garden plant that escapes to road verges and other man-made habitats but rarely travels far. It is probably under-recorded in Hampshire.



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***E. boissieriana* (Woronow.) Prokh. (Boissier's Spurge)**

Perennial rhizomatous herb; stems to 60cm, pale green, reddish towards base, erect, more or less glabrous. Leaf blade 20-60 x 4-12mm, widest at or below middle, medium green on upper surface, paler below, linear-lanceolate or lanceolate, rounded at apex and base, sessile, entire, glabrous, with midrib prominent beneath; Rays of terminal umbel 4-9, pale green, glabrous, often with axillary rays below; upper bracts greenish yellow, kidney-shaped, entire, glabrous; glands yellowish, lunate with two short horns. Capsule 2.5-3mm, globose, granulate on keels, glabrous.



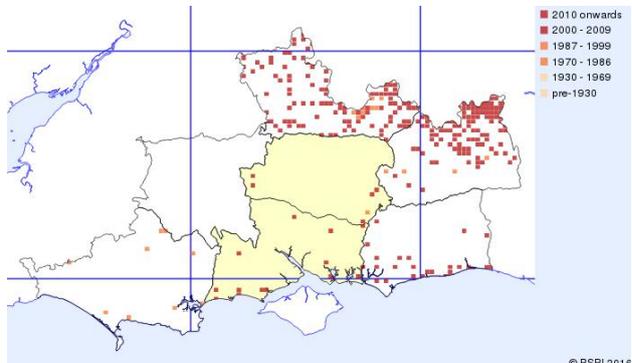
Sergey Banquet 2013

Native of eastern Europe. This species is part of the large and critical *E. esula* group, and it is uncertain whether it occurs in Britain.

No distribution information available.

***E. characias* L. (Mediterranean Spurge)**

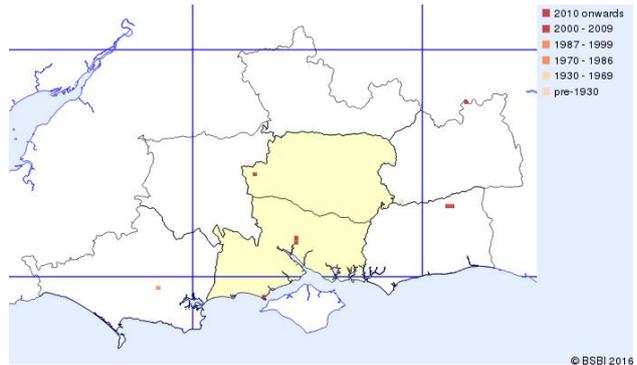
Subsp. *characias*, with dark brown shortly horned glands, is native to the western Mediterranean and subsp. *veneta* (= subsp. *wulfenii*), with yellow, long horned glands, to the eastern Mediterranean. A large and conspicuous garden escape and outcast which is clearly well-established in the London area and Thames valley, and so may be under-recorded in Hampshire.



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***E. corallioides* L. (Coral Spurge)**

A rare naturalisation along hedgebanks and roadsides, with just a few records in Hampshire.



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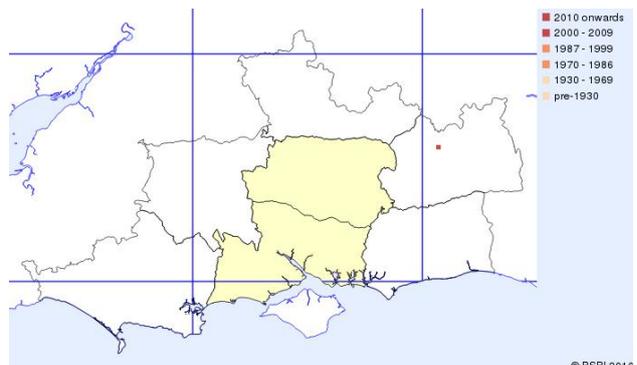
***E. cornigera* Boiss. (Horned Spurge)**

Erect glabrous, sparingly pubescent or pilose perennial 40-70(-100) cm tall, with several stems arising from a stout woody stock. Stem-leaves alternate, sessile; leaf-blades oblong-lanceolate or -oblanceolate, sometimes narrowly so, (2-)3-7(-10) x 0.5-2 cm, acute, subacute, obtuse or rounded at apex, attenuate, cuneate or rounded at the base, minutely serrulate, at least towards the tip, or subentire, obscurely veined. Umbels 5-9(-15)-rayed, the rays trifid then bifid; several axillary rays or branches developed below the umbels; lowest bracts 5-9 (-15), whorled, ovate to lanceolate, varying considerably in size; upper bracts whorled (in 3s) or opposite, deltoid, ovate, rhombic or suborbicular, 0.5-2 x 0.5-2 cm, subacute to rounded at apex, rounded-cuneate to truncate at base, green or yellowish. Cyathia sessile. Glands transversely elliptic, rounded on the outer edge, yellow. Fruit trilobate-subglobose, 5 x 6 mm, covered with narrowly conical papillae 0.5-1 mm long, glabrous or sparingly pubescent and glabrescent. Styles erect, united to c. halfway, 3.5 mm, shortly bifid.



Photo: [Hedwig Storch](#) under the Creative Commons Attribution-Share Alike 3.0 Unported license.

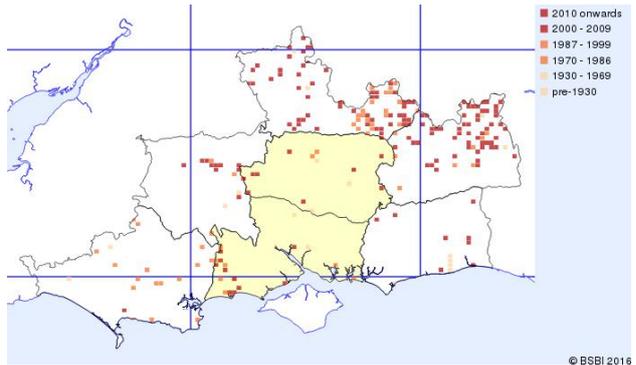
A native of NW India, with a single Surrey record (as a naturalisation within the RHS gardens at Wisley). It is one of a group of species somewhat resembling *E. hyberna*, and may be overlooked.



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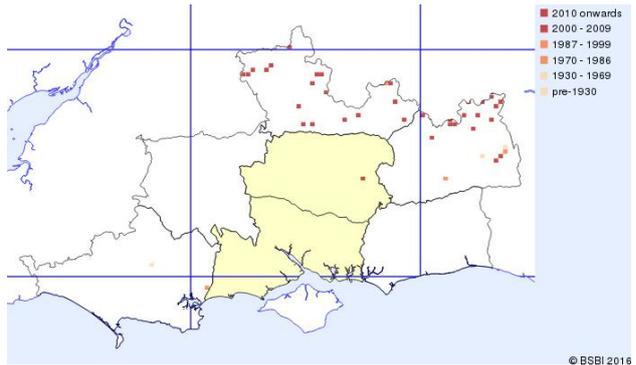
***E. cyparissias* L. (Cypress Spurge)**

Common through much of Europe and possibly native in chalk grassland (but nowhere convincingly so in Hampshire). Many of the plants that are naturalised lack the compact “conifer shoot” tips to the sterile branches and have a looser habit overall; they have been referred to var. *esuloides* DC. by Sell & Murrell, and can be puzzling to those unfamiliar with them.



***E. dulcis* L. (Sweet Spurge)**

Native to western and central Europe. There is only one Hampshire record so far; it appears to be starting to get established (or at least to be recognised) in the Thames Basin.



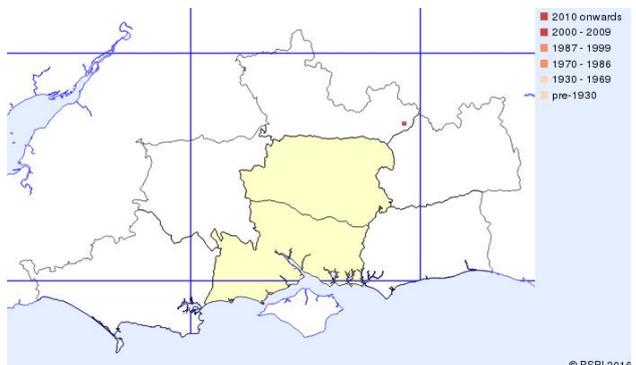
***E. epithymoides* L. (Polychrome Spurge)**

Softly and rather densely pubescent plant. Stems 20-40cm, not woody below. Leaves 2-3x as long as wide, 30-50 x 11-26 mm, obovate-oblong or elliptic-oblong, rounded at base, entire or obscurely serrulate; lowest bracts like stem leaves; upper bracts elliptical; rays about as long as bracts; lobes of cyathium as long as cup; glands small; capsule 3-4mm, with long, slender, red- or purple-tipped papillae.



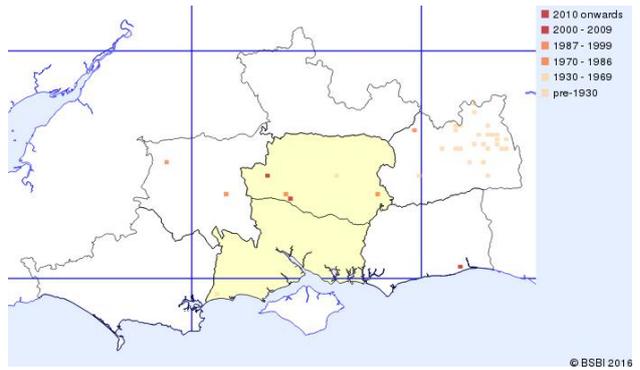
By Hermann Schachner (Own work) [CCo], via Wikimedia Commons

A plant of central and eastern Europe. There is a single Berkshire record in our area so far.



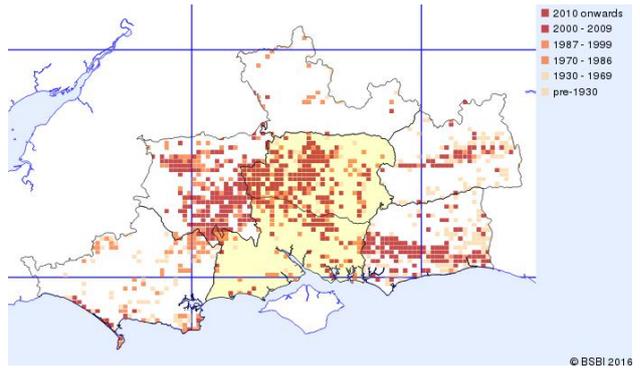
***E. esula* L. (Leafy Spurge)**

Native to most of continental Europe. Records are very scattered in our area, and it is quite likely that old records refer to other species or hybrids in this difficult group.



***E. exigua* L. (Dwarf Spurge)**

An archaeophyte of arable land on the chalk, and although declining generally to the point where it is now Vulnerable on the England Red List, it remains widespread over much of the Hampshire chalklands.



***E. x gayeri* Boros & Soó (Gáyer's Spurge)**

The photograph shows the cultivar 'Betten'; however many of the plants sold in the trade under this name are clearly nothing of the sort.



Native of continental Europe. There are no records within our area so far.

***E. griffithii* Hook. f. (Griffith's Spurge)**

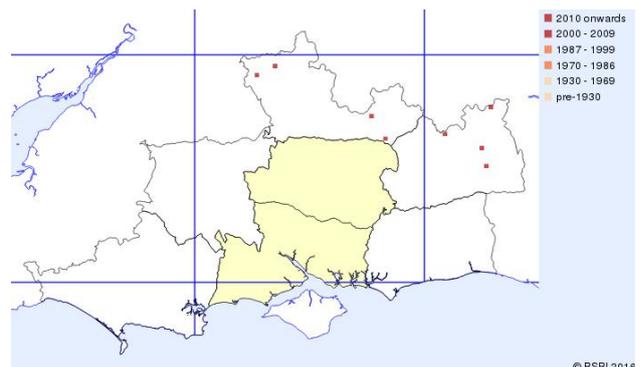
Erect perennial 20-70 cm tall. Rootstock usually extensively rhizomatous, rarely a shallowly buried subglobose tuber, rhizome 3-5 mm thick, tuber to 5 cm. Stems mostly single, less often clustered, 3-7 mm thick, sometimes branched, usually mostly glabrous. Leaves alternate; stipules absent; basal scale-leaves few; petiole indistinct, short and broadly winged; leaf blade ovate-oblong to elliptic, very variable, 2-7 × 0.6-1.2 cm, leathery or almost so, base attenuate-cuneate, margin entire, apex acute or obtuse; midrib prominent on both surfaces, lateral veins not reaching margin. Lowest bracts 3-7(-12), light red or orange, less often yellow, long elliptic to elliptic, base attenuate, apex rounded or acuminate, primary rays 3-7, 2-4 cm; cyathium bracts 2, usually red or red-purple, much varied, rounded or subtruncate at base, usually rounded or subrounded at apex. Cyathium involucre cuplike, ca. 3 × 3.5 mm, lobes rounded, white pilose at margin and inside; glands 4, brown, rounded. Male exerted from involucre. Female flower: ovary smooth, glabrous; styles free; style arms peltate, slightly 2-lobed. Fruiting pedicel 4-5 mm; capsule globose, ca. 4 × 4 mm, smooth, glabrous.

Popular cultivars, with particularly rich colouring, are 'Fireglow' and 'Dixter'.

A subalpine species of E and SE Asia. A few records in the Thames Basin but none so far from Hampshire. Unlikely to be overlooked once known.

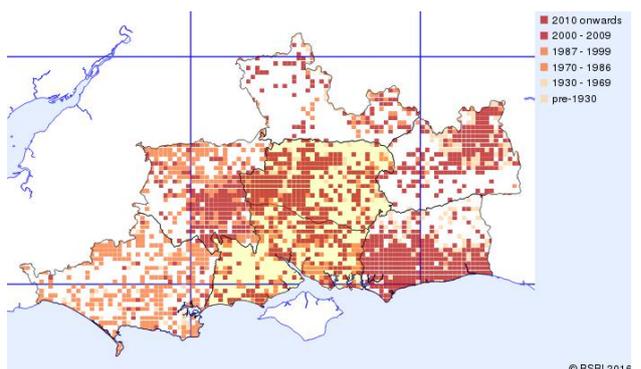


By Julie Anne Workman - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=7142446>



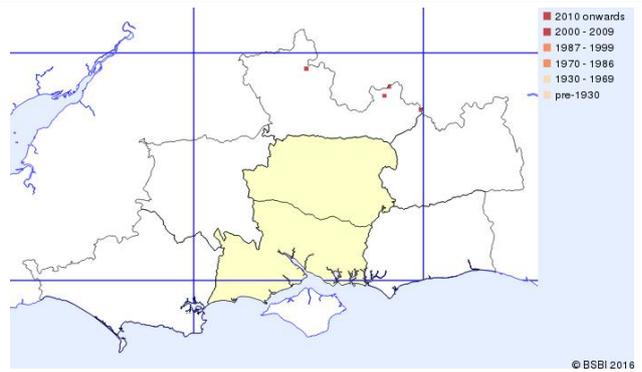
***E. helioscopia* L. (Sun Spurge)**

A common plant of arable, horticultural and waste ground. It seems to avoid the more acid soils, and to be more wedded to agricultural and horticultural environments than *E. peplus*.



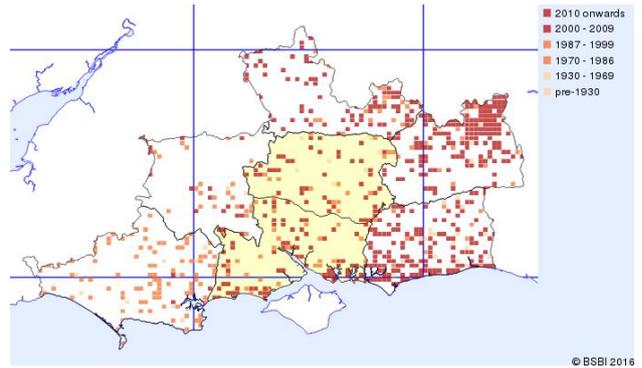
***E. hyberna* L. (Irish Spurge)**

Native in SW England and Ireland, but in our area naturalised only in a few spots along the Thames valley.



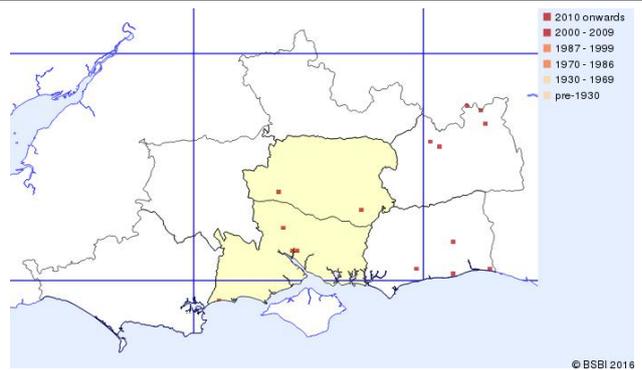
***E. lathyris* L. (Caper Spurge)**

Perhaps native or archaeophyte in some places in southern England, but much more frequently encountered as an obvious outcast, often accompanying dumped soil or builders' rubble and occurring only in small numbers. In Hampshire it is quite frequently encountered but often not persistent.



***E. maculata* L. (Spotted Spurge)**

A North American native, rare in our area and most often found around nurseries and garden centres, sometimes on dumped soil.



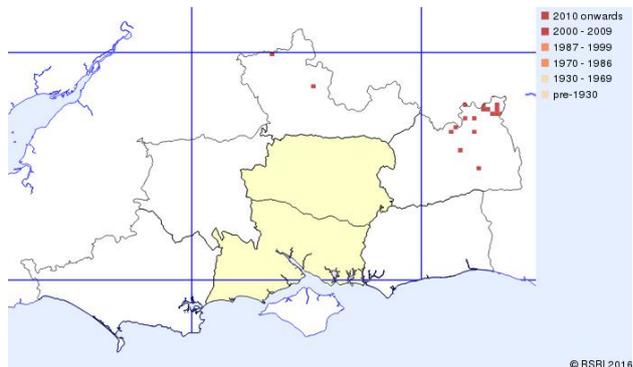
***E. mellifera* Aiton (Canary Spurge)**

Shrub to 2m. Stems pale, erect, glabrous, branching at the top. Leaf blade 8-16 x 1.5-3.5cm, dark green with a paler midrib on upper side, somewhat fleshy, lanceolate-elliptical, rounded-mucronate at apex, narrowed at base, glabrous, sessile or shortly stalked; rays of terminal umbel numerous, up to 40mm, glabrous; bracts small; raylets up to 10mm, glabrous. Glands subrotund, entire. Capsule 5-5 x 7-8mm, broadly ovoid, muricate.



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Native of Madeira and Canaries; grown fairly widely in gardens. Until recently most naturalisations have been in SW England, but it is evidently now spreading in the London area and Thames valley. Not yet recorded in the wild in Hampshire.



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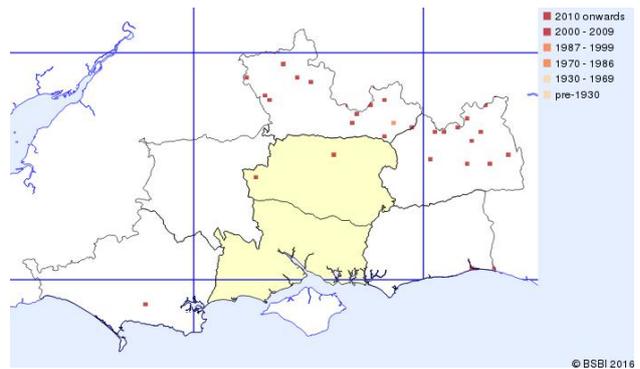
***E. myrsinites* L. (Broad-leaved Glaucous Spurge)**

Perennial herb with tap-root; stems several, up to 40cm, pale bluish-yellowish green, fleshy, spreading or ascending, stout, glabrous, simple, densely leafy; Leaves all cauline, lamina 18-25 x 11-15mm, glaucous, obovate to subrotund, cuspidate to mucronate at apex, entire, often narrowed at base, glabrous, fleshy, sessile; primary branches of topmost whorl of inflorescence 10-12; rays (1-)4-12, once or twice forked, variable in length, glabrous; lowest bracts 1.8-2.5 x 1.1-1.5cm, obovate to subrounded, mucronate at apex; raylets 10-15mm, glabrous; upper bracts 1.0-1.2cm, subrounded or ovate, mucronate at apex, cordate at base, glabrous; glands yellowish-green, broad and concave on outer edge with short, thick horns; capsule (4-)5-7mm, trigonous, glabrous, smooth or minutely tuberculate.



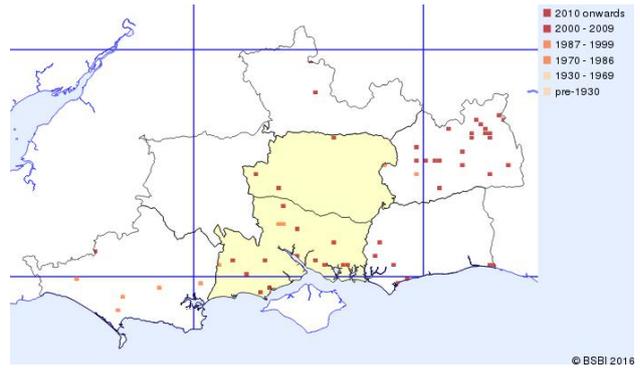
Photo: [Meneerke bloem](#) under [Creative Commons Attribution-Share Alike 3.0 Unported](#) license

Mediterranean native. A blatant garden escape, rare and associated with dumped soil in Hampshire.



***E. oblongata* Griseb. (Balkan Spurge)**

Native of Aegean region and Balkans. Scattered and occasionally well-established in Hampshire; sites include churchyards, hedgebanks and dumped soil.



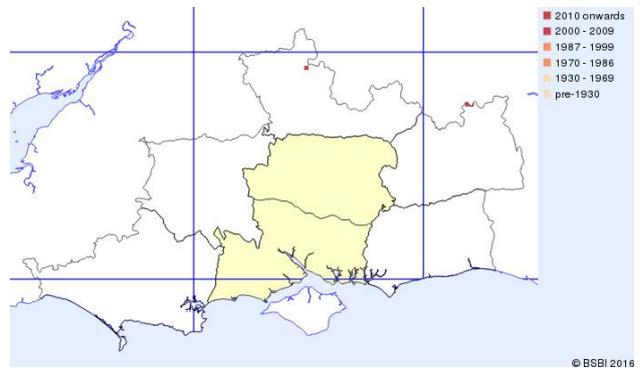
***E. palustris* L. (Marsh Spurge)**

A robust, tufted, glabrous, glaucous perennial with creeping rhizomes; stems 50-150cm, with many non-flowering branches and some axillary rays below the terminal umbel; stem leaves 20-60(-80) x 3-15mm, lanceolate or oblong-lanceolate, turning purplish in autumn; lowest bracts ovate, a little shorter than rays; upper bracts orbicular-ovate, yellowish; rays >5; capsule 4.5-6mm, covered with short papillae.



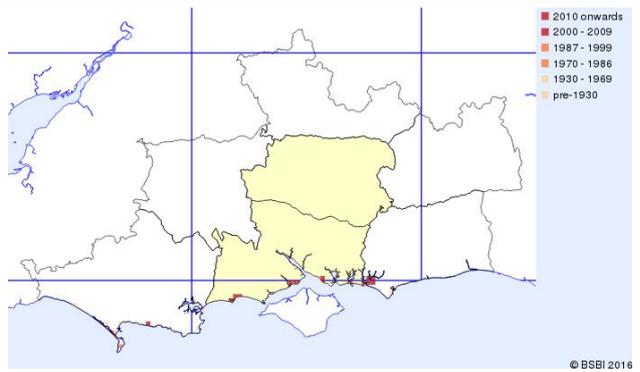
Photo: Hugues TINGUY [CC BY-SA], via Tela Botanica

Native in most of the central latitudes of continental Europe in damp places and riverside swamps. A very rare escape in a couple of places in the Thames valley.



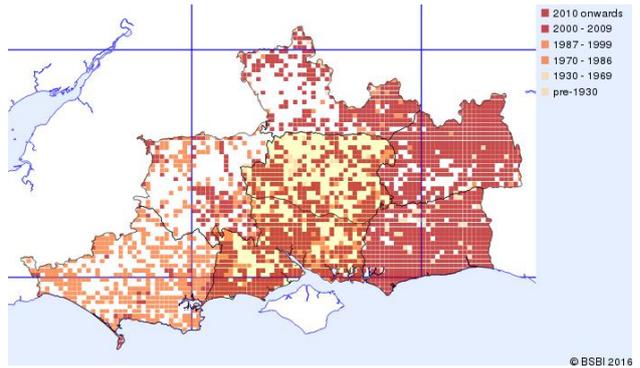
***E. paralias* L. (Sea Spurge)**

A species of coastal sands, which limits its distribution in the area quite severely. However it shows itself capable of colonising even quite small accretions of sand and can therefore be found on some shingle beaches.



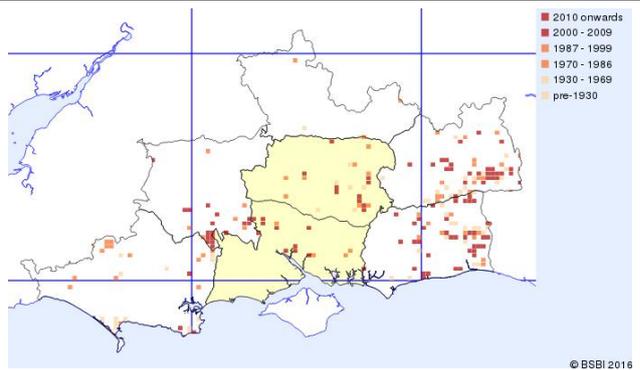
***E. peplus* L. (Petty Spurge)**

A very widespread and common species in any sort of cultivated or disturbed land that is not treated with herbicide, and frequently found as a pavement and gutter weed. The commonest Spurge species in our region.



***E. platyphyllos* L. (Broad-leaved Spurge)**

A rather scattered and sporadic plant in much of the region, with a hotspot in the Martin area and others in parts of Surrey and Sussex. Usually found as a weed of arable margins and fallows; occasionally on disturbed waysides.



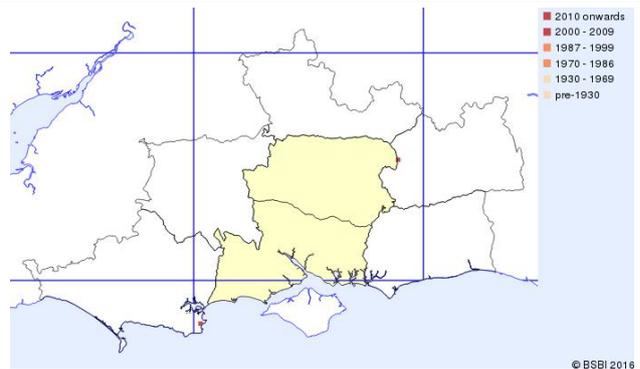
***E. portlandica* L. (Portland Spurge)**

A plant of coastal sands and cliffs, commonest locally on broken ground on cliffs in Dorset and the Isle of Wight. There is a single small population (currently 80-90 plants) on coastal shingle in Hampshire, and a few older records elsewhere in the county.



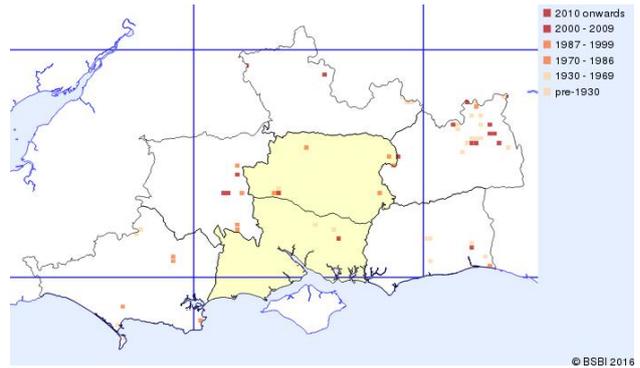
E. x pseudoesula Schur (Figert's Spurge)

A hybrid between *E. esula* and *E. cyparissias*, native in continental Europe and probably introduced as the hybrid from there. There is a single record from the Blackwater valley in the Aldershot area.



E. x pseudovirgata (Schur) Soó (Twiggy Spurge)

A hybrid between *E. esula* and *E. waldsteirii*, native in continental Europe and introduced as the hybrid from there. This is the commonest of the *E. esula* group found in Britain in general, is apparently fertile, and some older records of *E. esula* in our region may belong here. Scrub margins, grassy waysides and verges.



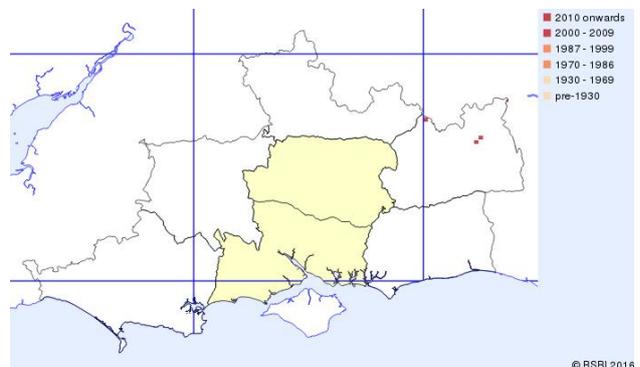
E. rigida Bieb. (Narrow-leaved Glaucous Spurge)

Glabrous, glaucous perennial with a sturdy woody stock; stems 30-50cm, stout, prostrate to ascending, densely leafy; leaves lanceolate, acuminate, fleshy, the lower spreading, the upper almost imbricate; lowest bracts obovate; upper bracts suborbicular, sometimes mucronate; rays 6-12, short, once or twice forked; glands with minutely lobed horns; capsule 5-8mm. strongly trigonous.



Photo: [Stan Shebs](#) under the [Creative Commons Attribution-Share Alike 3.0 Unported](#) license

A native of southern Europe, sometimes grown in gardens. So far it has a few records in Surrey, where all records are of blatant garden escapes in suburbia. It might be overlooked for *E. myrsinites*.



***E. serpens* Kunth (Swallow-plant)**

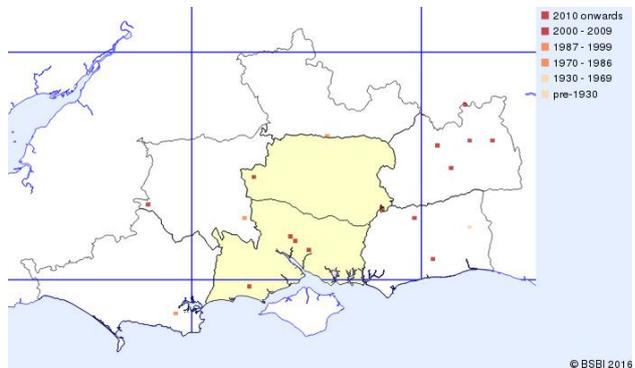
Annual herb; stems 15-20cm, many from base, prostrate, glabrous; internodes with adventitious roots; leaves opposite, with membranous, triangular stipules which soon fall, petiole c. 1mm, oblong, entire, 2-5 x 1.5-3mm, grey-green, pilose, with truncate or cordate base; cyathia single, axillary, with 4 marginal lobes and 4 glands; glands reniform-rounded with white appendages; ovary and capsule globose, smooth, glabrous.



Native of the Americas; reported from a number of counties in the south-east and south Midlands, but not so far in our area. No distribution information available.

***E. stricta* L. (Upright Spurge)**

Probably native in limestone woods in the lower Wye valley and south Wales, but now seemingly turning up more often as a casual elsewhere. There have been several recent Hampshire sightings.



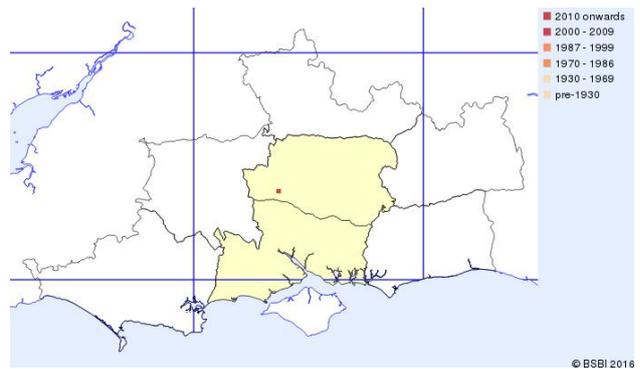
***E. thymifolia* L. (Thyme-leaved Spurge)**

Annual ± prostrate herb; stems slender, many from base, sparsely pilose; stipules linear-lanceolate, 1-1.5mm long, soon falling; leaves opposite, petiole c. 1mm, rounded or cordate at base, margin finely serrulate or sometimes entire, both surfaces pubescent; cyathia axillary, single or clustered, marginal lobes 5, glands 4 with white appendage; ovary and capsule smooth and shortly pubescent.



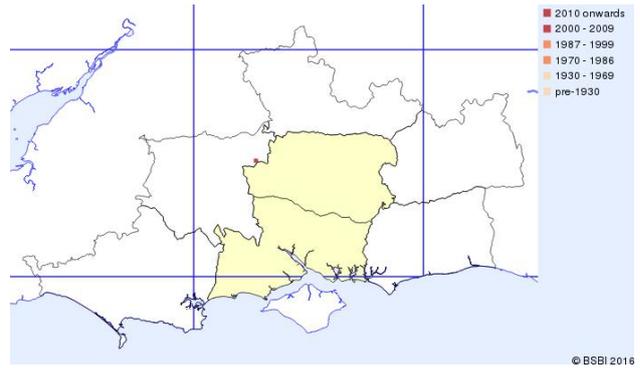
Image by loupok under CC-BY-NC-ND license

A cosmopolitan weed of warmer climates. So far limited in our area to a single record in Hampshire at a specialist nursery importing plants from the Mediterranean.



***E. waldsteinii* (Soják) Czerep. (Waldstein's Spurge)**

A native of central and SE Europe, extending into SW Asia. So far in our area it has been recorded once, as a garden escape onto a road verge just over the Hampshire border in Wiltshire.



***E. wallichii* Hook. f. (Tibetan Spurge)**

Herb to 100m tall; stems single or a few in a cluster, with a few basal branches and many upper branches, smooth and glabrous; cauline leaves larger towards apex, ± sessile, long elliptic to ovate-lanceolate, 5-10 x 1.2-3cm, base attenuate, rounded or subtruncate, apex acuminate to subacute, entire; midrib prominent on both surfaces, c. 7 pairs of lateral veins, dividing before margin; lowest bracts (3-)5(-7), 4-6 × 2-3.5 cm, ovate or sometimes ovate-elliptic or oblong, base rounded or subtruncate, apex obtuse to acute, yellow to yellowish-green; rays (3-)5(-7), up to 5cm; upper bracts usually 3, ovate to broadly ovate, 2.5-3.5 × 1-2 cm; involucre broadly campanulate, ca. 5 × 6-7 mm, exterior shortly brown pilose, lobes rounded, apex irregularly lacerate, densely white pilose inside; glands 4, pale brown to yellow-brown, reniform-rounded; capsule 3-lobed, 9-11 × 9-11 mm, glabrous.



Native to central and eastern Asia. So far in our area it has been seen only as self-establishing in beds at Kew Gardens.

