

***Symphytum* × *ferrariense* (*S. officinale* × *S. orientale*, Boraginaceae) in Cambridgeshire, Cheshire and Norfolk: first records for England**

Robert Leaney¹; Alan Leslie^{2*}; Stewart Hinsley³

¹Wroxham, Norfolk, U.K.; ²Cambridge, U.K.; ³Alsager, Cheshire, U.K.

***Corresponding author:** alanleslie53@gmail.com

This pdf constitutes the Version of Record published on 14 August 2025.

Abstract

Three populations of *Symphytum* × *ferrariense* C.Massal., the hybrid between *S. officinale* L. and *S. orientale* L. are described, in Cheshire, Cambridgeshire and Norfolk, all involving a cream flowered form of *S. officinale*. This is the first time *S. × ferrariense* has been reported in England, and the first time it has been found in the wild outside the coastal department of Var in southern France, where it has not been seen since 1892. All the late 19th century occurrences were close to the port of Toulon and it is suggested that they were escapes or relics from horticulture, having been inadvertently imported along with *S. officinale* for herbal purposes, probably from the Black Sea coast of Russia. The three populations described here, however, seem to be the result of hybridisation in the wild, which is likely to occur more often now that *S. orientale* is spreading from its original urban sites into rural areas close to the wetland habitats favoured by *S. officinale*. The Cambridgeshire population consists of two very different forms, one probably an F1 hybrid and the other the result of backcrossing of this F1 plant with the presumed pollen parent population of *S. officinale* nearby; the Cheshire and Norfolk populations are also quite distinct. All four forms show good intermediacy between *S. officinale* and *S. orientale*, but differ in habit, upper stem leaf shape and leaf and stem indumentum; they are given separate descriptions, but with a combined description in the Conclusion section. All four resemble a cream flowered form of *S. officinale*, but a quick check for the half-dissected calyx and shorter stem winging should suggest *Symphytum* × *ferrariense* rather than pure *S. officinale*; another helpful spotting feature is that the open flowers are pure white or greenish yellow, rather than cream in colour. Material from the Cambridgeshire population has been deposited in **CGE**.

Keywords: Boraginaceae; Comfrey; hybrid; diagnostic characters; reproductive isolation; horticultural hybrid

Introduction

The purpose of this paper is to report the finding of three populations of *Symphytum* × *ferrariense* C. Massal. in England. These records are not only the first in England, but also the first in the wild outside the coastal department of Var in southern

France, where it has not been recorded since 1892. The binomial hybrid name was first used by Massalongo after it was found with both parents in Ferrara Botanic Garden in 1913 (Cecchi & Selvi, 2017).

Symphytum officinale L. is by far the most widespread comfrey, with a native range extending over virtually the whole range of the genus, from Western Russia and Turkey through Europe to Britain and Ireland, including France, Italy and Spain; in Scandinavia it is usually regarded as an escape from cultivation (Tutin *et al.*, 1972). In Britain, it is conventionally regarded as occurring in three forms, one with carmine flowers (subsp. *officinale* var. *purpureum*) and two with greenish white buds and cream (not white) open corolla (Perring in Rich & Jermy, 1998). The latter two cream flowered forms seem to be the ones involved in the hybrids reported here: the robust tetraploid subsp. *officinale* var. *ochroleucon* ($2n = 48$), height up to 1.5 m, in the Cheshire hybrid; and the smaller diploid subsp. *bohemicum* ($2n = 24$), height up to 1 m, in the Cambridge and Norfolk plants.

The recognition of the presence in Britain of these two cytotypes of cream-flowered *S. officinale* by Perring was the result of a Botanical Society of the British Isles Symphytum survey in the early 1970s (Gadella, Kliphus & Perring, 1974) It was concluded that there were two cream coloured cytotypes in Britain and Ireland, a diploid ($2n = 24$), later named subsp. *bohemicum* and a tetraploid ($2n = 48$) later named subsp. *officinale* var. *ochroleucon* - carmine forms were also found to be tetraploid ($2n = 48$) and were later designated subsp. *officinale* var. *purpureum*. It has been assumed until recently that the two cream-flowered cytotypes could be separated on the length of the detached corolla, said to be shorter in *bohemicum* (< 16 mm) and longer in *ochroleucon* (Stace, 2019). Unfortunately, corolla lengths of the assumed *officinale* pollen parent at the Cambridgeshire site were all around 16 mm!

There are nothing like the same problems regarding taxonomy or distribution with the other parent of *S. × ferrariense*, *Symphytum orientale*. The native range here seems restricted to an area around the Black Sea comprising SW Russia, Ukraine and Turkey, but it was introduced as a garden plant into western Europe in the mid-18th century, with an alien range that now includes Britain and Ireland, France and Italy (Tutin *et al.*, 1972). In Britain *S. orientale* had been introduced as a garden ornamental by 1752 (Stroh *et al.*, 2023).

During the last century *S. orientale* established itself very much as an urban weed in Britain, largely restricted at first to the east midlands, East Anglia, London and SE England (Perring and Walters (Eds.), 1976). By the time of the New Atlas of the British and Irish flora (Preston *et al.*, 2002) *S. orientale* had spread to SW and W England, the Welsh Borders and Southern Scotland, at the same time becoming extremely common as an urban weed in the centres of large towns, especially in its original core range of East Anglia. In Cambridge and Norwich, it had by this time become particularly abundant in residential areas built in the 18th and 19th Century, spreading from gardens to walls or wall bases, parks, amenity grassland, churchyards, roadbanks, and along paths.

Over the last two decades *S. orientale* has quite suddenly spread from towns to villages and along rural verges far from habitation, aided no doubt by increased vehicular and cutting machinery transport of seeds or vegetative propagules. Such spread from central Cambridge has brought it into close proximity to *S. officinale* on the River Cam footpath at Chesterton.

The taxonomic status of *Symphytum* × *ferrariense*

The taxon now known as *Symphytum* × *ferrariense* was first recorded in the French department of Var between 1871 and 1892, with stations at Hyeres (1871-75 and 1892), Aups, around 60 km N of Hyeres (1881 and 1882), and Ampus about 10 km SW of Aups. The first collection, by Shuttleworth, was given the *in scheda* name *Symphytum floribundum* (Bucknall, 1913; Kurrto, 1981). Prior to 1913 this taxon was identified with *S. mediterraneum* W.D.J.Koch (Schultz, 1875; Nyman, 1881). (*S. mediterraneum* is now considered synonymous with *S. tuberosum* L.).

The name *Symphytum* × *ferrariense* C. Massal. was published in 1913, based on a plant which appeared spontaneously in the Botanical Garden of Ferrara in Italy, growing with *S. officinale*, *S. orientale* and *S. asperrinum* (*S. asperum* Lepech.), which were in cultivation there. A description and a comparative table of the characters showing intermediacy between *S. officinale* and *S. orientale* were provided (Massalongo, 1913).

In the first monograph of the genus *Symphytum*, Bucknall (1913) described what we at present know as *S. × ferrariense* under the epithet *S. floribundum* R.J Shuttlew. ex Buckn., considering it a species, thereby validating Shuttleworth's name. He placed it in his section *Orientalia*, along with *S. orientale* and *S. caucasicum*, on the basis of its much-branched stem, fusiform roots and shallowly dissected calyx "not divided to the middle" (i.e. divided to less than half way to the base). Bucknall was aware of *S. × ferrariense*, but did not identify it with *S. floribundum*.

In a study of Mediterranean comfrees Pawłowski (1971) noted the similarities between *S. officinale* and *S. floribundum*, and that the latter possessed "abortive mericarps (nutlets) and pollen grains". He also published the name *S. × hyerense* Pawł. for a specimen collected from Hyeres in 1874, intermediate between *S. floribundum* and *S. officinale*. In the *Flora Europaea* treatment of the genus (Pawłowski, in Tutin *et al.*, 1972) he included *S. floribundum*, but did not give it a species number and considered it a probable hybrid of *S. officinale* "and some other species".

The most recent investigation into "*S. floribundum*" (Kurrto, 1981) involved a comparison of the morphological characters of *S. floribundum*, *S. × ferrariense*, *S. × hyerense*, *S. orientale* and *S. officinale*, in order to elucidate the status of the first three taxa. Kurrto's study was based on material from the Ferrara herbarium (**FER**) and four other herbaria (**FI**, **H**, **K** and **WU**). Essentially, he re-examined specimens described by Bucknall and named *S. floribundum*, all collected in the department of Var in Southern France at the end of the 19th Century, from Hyeres, Aups and Ampus, as described above. He then compared these specimens with Pawłowski's specimen of *S. × hyerense* and with specimens of *S. officinale* and *S. orientale*. He found that the "*S. floribundum*" specimens were all intermediate between *S. officinale* and *S. orientale*, and the *S. × hyerense* specimens intermediate between *S. officinale* and *S. floribundum*. He concluded therefore that "both *S. floribundum* and *S. × hyerense* should be regarded as belonging to the hybrid *S. officinale* × *orientale*."

As *Symphytum* × *ferrariense* C.Massal. was published before Bucknall's validation of Shuttleworth's *in scheda* name as *Symphytum floribundum* Shuttlew. ex Buckn., the former is the correct name for the taxon under the ICNafp.

Mode of origin of the Cambridge *S.* × *ferrariense*

Given the propensity of the genus *Symphytum* to produce hybrids it would seem odd that a hybrid between *S. officinale* and *S. orientale* should have been so little reported, with no records from the wild outside the department of Var in France and none since 1892. This is especially the case when one considers that *S. orientale* is particularly fertile and is the *Symphytum* taxon which spreads prolifically by seed, populations consisting of small clumps surrounded by numerous seedling plants.

The unusual fertility of *S. orientale* means that it is especially liable to produce hybrids. In Norfolk it has produced both *S. orientale* × *caucasicum* (Leaney, 2019) and *S.* × *norvicense*, a hybrid between *S. orientale* and (probably) *S. asperum* (O'Reilly & Leaney, 2009). The latter is a very fertile hybrid which breeds true, produces many seedling plants and is capable of independent existence without the parent species. Around 30 populations have so far been found and it is thought to have arisen in cultivation. *S. orientale* is without doubt one parent of *S.* × *perringianum* P.H. Oswald & P.D. Sell, which was found growing in a road verge population of *S. orientale* in Cambridge in 1998; the second parent is reputedly *S.* × *uplandicum* Nyman (see Sell & Murrell, 2019). This plant is of very low fertility and has hardly survived to date, though it is still in cultivation.

In the UK the lack of records of *S.* × *ferrariense* until recently must be due mainly to reproductive isolation before *S. orientale* began to spread into rural areas over the last decade or two. On the European mainland the lack of records is probably more to do with the scarcity of both parents. One of us (RML) has botanised extensively in Germany, France, the Netherlands and Belgium without seeing *S. orientale* in urban or rural areas at all, and with only very infrequent finds of *S. officinale* (mostly carmine flowered forms in ruderal or horticultural habitats) and only very occasional cream flowered plants on river banks.

It could well be that the original clutch of records of *S.* × *ferrariense* in Var over a very few years at the end of the 19th Century was the result of imports of *S. orientale* into the port of Toulon, from the Black Sea, as a garden plant, the *S. orientale* then escaping and hybridising with nearby wild growing *S. officinale*. Toulon, the most easterly major port in France, is very close to all the sites. Furthermore, the department of Var, nowadays the major producer of cut flowers in France, was already a horticultural centre at this time.

An even more likely mode of origin for the Var hybrid plants is that they were inadvertently imported as a horticultural hybrid along with *S. orientale*, most likely from the Black Sea ports of SW Russia and Ukraine, in much the same way that *S.* × *uplandicum* was introduced from the St. Petersburg Royal Botanical Garden along with *S. officinale* around 200 years ago (Hills, 1976.). Presumably plants of *S. orientale* for export to Western Europe would have been grown in nurseries and it seems very likely that *S. officinale* obtained from the lower reaches of the Don and Dnieper river systems would also have been grown in the same nurseries for export, since this comfrey was still much in demand for herbal purposes at the end of the 19th century.

Diagnostic characters of *S. officinale* and *S. orientale*

The chief character to look out for in hybrids of *S. officinale* is long stem winging on the upper and mid stem, which in the pure species is down to the next leaf insertion down or beyond - although it is important to note that such winging can also be found in *S. × uplandicum* (*officinale* × *asperum*). The very narrow lanceolate upper stem leaves with narrowly cuneate bases and finely acute to acuminate tips are also useful characters, as are the broadly winged petioles with winging 1-2(3) cm wide at the leaf insertion. The leaf indumentum is of long weak bristles above, mixed with minute uncinata (hook-tipped) hairs; the leaf undersurface lamina tends to have only these minute uncinata hairs, visible at x20 magnification, with simple weak bristles on the mid rib and venation. Stem indumentum is of dense, patent, weak bristles and minute uncinata hairs. Calyx dissection is to about $\frac{3}{4}$, with very narrowly triangular calyx lobes that become reflexed at or after anthesis.

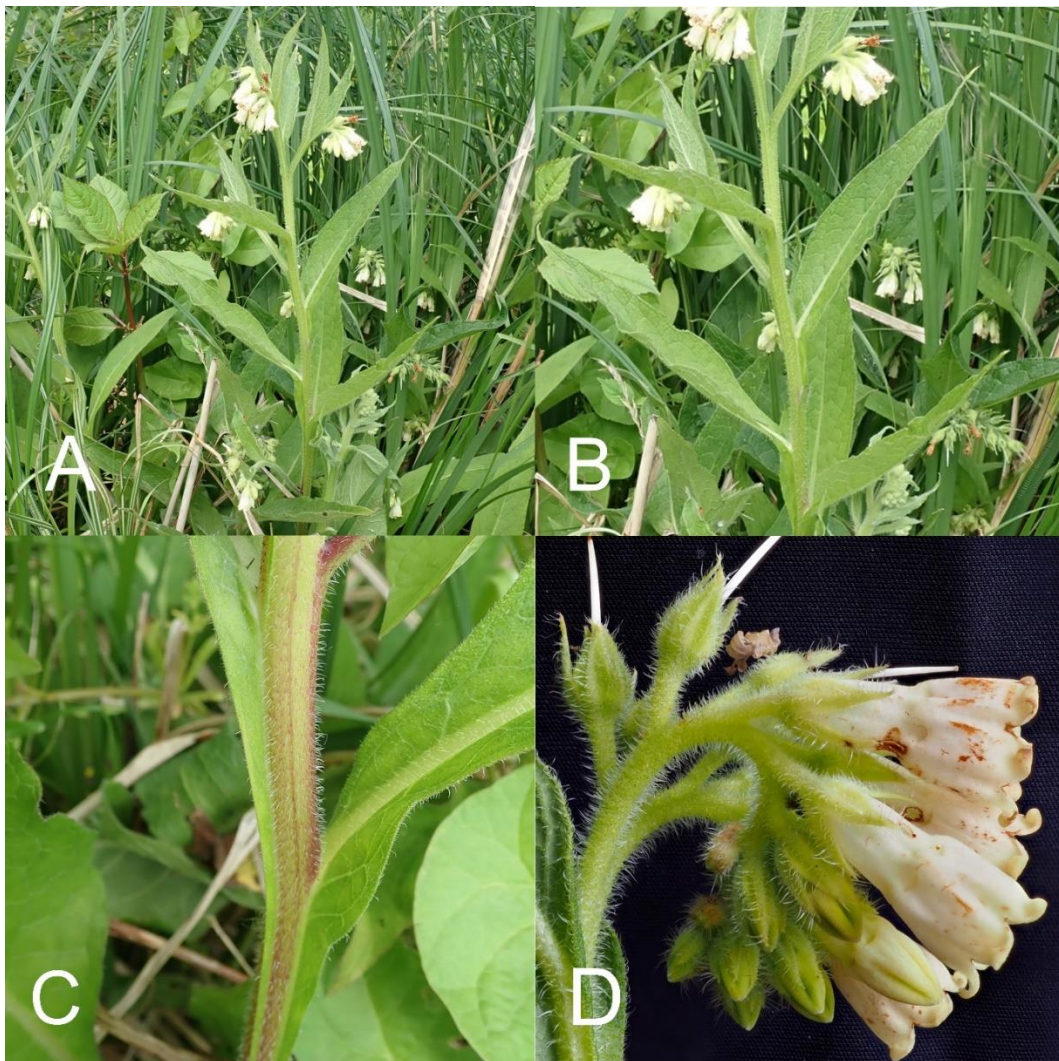


Figure 1. *Symphytum officinale*, Ditton Meadows, Fen Ditton, Cambridgeshire 2/6/23. Note A: fairly tall plant, up to 1.5 m; B: very narrowly lanceolate upper stem leaves, with gradually attenuated, acute tips; C: very broad petiole winging and broad stem winging down to the next node or below; D: calyx dissected to about $\frac{3}{4}$ with narrow lobes; greenish buds and cream open corolla. Images:

Peter Leonard

In *S. orientale* the upper and mid stem leaves are broadly ovate with widely cuneate to rounded bases and obtuse (- subacute) tips; the petioles are long, with very narrow petiole winging only 1-2 mm wide and no petiole wing decurrence or stem winging. The long petioles mean that the upper stem leaves arch downwards, whereas in *S. officinale* they are held in a "swept-up" position. The leaf indumentum is of dense, soft hairs tending to obscure the minute uncinata hairs, especially on the undersurface. The stem indumentum is of short, fairly sparse, weak bristles, some patent and gently curved, some semi-oppressed and untidily kinked. Calyx dissection is very shallow, to around $\frac{1}{4}$ way to the base, with broadly triangular calyx lobes that remain appressed to the corolla; after antithesis the calyx becomes inflated (accrescent).



Figure 2. *Symphytum orientale*, Chesterton, Cambridgeshire (TL47116005), 22/5/23. Note A: short plant, up to 70 cm; upper stem leaves broadly ovate with rounded - obtuse tips; B: very shallow calyx dissection ($\frac{1}{5}$ - $\frac{1}{4}$) calyx lobes broadly triangular; open corolla pure white. Images: Robert Leaney

It is the shallow calyx dissection of *S. orientale* that best characterises its hybrids. When *S. orientale* hybridises with a species with a deeply dissected calyx to around $\frac{3}{4}$, the result is usually intermediate with a calyx dissected to around half way - this calyx dissection is found in both *S. × norvicense* (*S. orientale* × ?*asperum*) and *S. × perringianum*. The only other usually encountered comfrey with a similarly shallow calyx dissection to *S. orientale*, again to around $\frac{1}{4}$, is *S. caucasicum*. This species must therefore be considered if one finds a putative hybrid with a roughly "half-dissected" calyx like the one described here.

Description of the Cambridge plants

The Cambridge population was first found on 19th April 2022 by A.C. Leslie. Six clumps were growing on dry ground between the towpath and the brick wall of back gardens beside the River Cam, on the N side of the river along Fen Road Chesterton, Cambridge (TL 47116005). The six clumps were scattered in a dense population of *S. orientale* about 30 metres long and 4 metres wide. Almost the only associate was

Urtica dioica L., but subsequently there has been considerable invasion by *Cirsium arvense* (L.) Scop. and *Calystegia silvatica* (Kit.) Griseb. Specimens taken on 19 April have been deposited in **CGE**.



Figure 3. Mixed population of *Symphytum* × *ferrariense* and *S. orientale* on towpath by River Cam, Chesterton, Cambridgeshire (TL 47116005), 22/5/23. Photo: Robert Leaney

No other potential parent comfrey plants were found in the immediate vicinity, but later a population of 30-40 cream-flowered *S. officinale* was discovered on the other side of the river, on a ditch bank below the east side of the railway, about 200 m away. *Symphytum* plants are almost exclusively bee pollinated, so this *officinale* population was quite close enough to have been the pollen parent.

It was immediately noticed that two forms of the putative hybrid were present. One form was considerably taller than the *S. orientale* plants at 100-125 cm, with greenish buds, but a more or less pure white open corolla. The other form was shorter (50-75 cm) and less erect, with more green in the buds, but also a lot of greenish-yellow in the apical half of the open corolla as well.

The following descriptions of the two forms are derived from a specimen of each form taken on 29/4/22 plus more specimens of the two forms taken a year later (22/5/23), as well as numerous photos taken *in situ* on the latter date. Corolla lengths are from fresh, detached, fully opened corollas, eight from each form, which are also illustrated to show the different corolla shape and degree of green or yellow colouration in the two forms.

Tall, erect, broader leaved form

Robust, erect plants around 125 cm in height, with some lower and mid stem leaves up to 21 cm long with petioles up to 17 cm, basal stem c.1.8 cm diameter. Uppermost leaves smaller, swept up, and with petioles only 1-2 cm long. Both upper and mid stem leaves are narrowly lanceolate, broadest at the base, with a very

gradually attenuated distal portion and finely acute to acuminate tip; this is the most striking difference from the *S. orientale* where the upper leaves are very broadly ovate and blunt tipped.

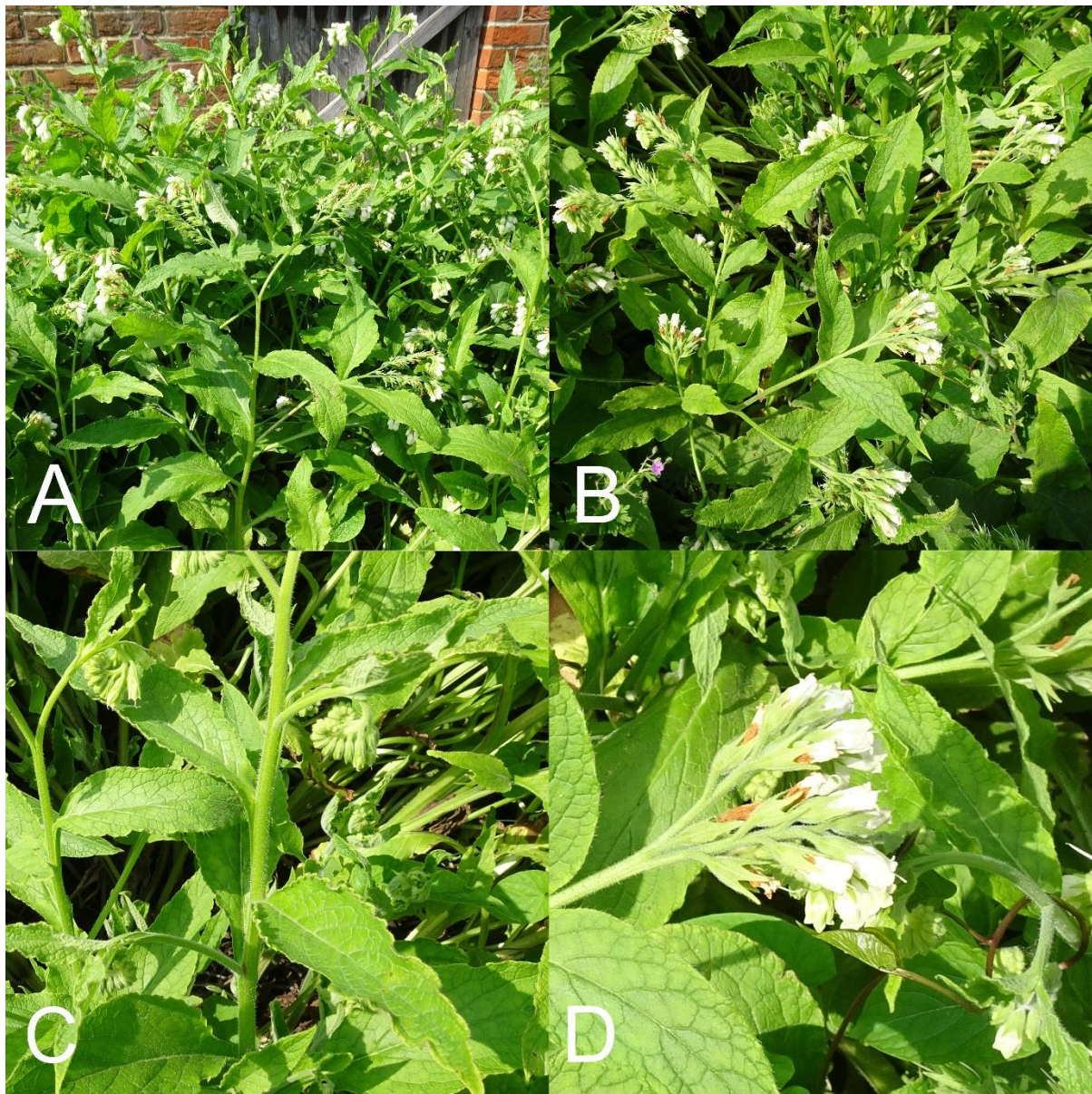


Figure 4. *Symphytum* × *ferrariense*, tall, erect, broader leaved form. Chesterton (TL47116005), 22/5/23. Note A: tall, erect habit, up to 1.25 m; B: fairly broad upper stem leaves; C: stem winging occasionally down to next node, mostly to around halfway; D: calyx dissection to 2/5 – 1/2, and white bulbous open corolla. Photos: Robert Leaney.

The petioles are broadly winged with petiole wing width 3-5(-12) mm at the petiole insertion. Stem wing width is 1-2 mm with winging extending down sometimes to the next leaf insertion, though most often to around halfway; occasionally winging is very short and only about 1-2 cm long.

The leaf upper surface indumentum above is mainly of quite dense, fine flexible bristles, not hooked at the tip and with only slightly bulbous bases on the longest

and broadest bristles, plus occasional minute uncinata hairs visible at $\times 20$. The leaf undersurface indumentum is very similar indeed. Overall the leaf indumentum is quite similar to that of *S. orientale*, though rougher in texture.

The stem indumentum is chiefly of weak, kinked, semi appressed hairs with only a few stiff, smoothly curved, patent bristles and occasional tiny uncinata hairs. On the inflorescence branches and pedicels there are much more numerous forwardly curved stiff bristles, some of which have hooked tips, and many tiny uncinata hairs.

On the calyx tube most of the dense, stiff, forwardly curved bristles are hook tipped and mixed with numerous tiny uncinata hairs; the calyx lobes have only long, curved, simple bristles.

The corolla in bud has a pale yellow-green basal colour with five green blotches. The open corolla has a white corolla tube and a bulbous corolla bell which is usually a pure white; some of the smaller (more immature) corollas have a little greenish colour near the apex. The detached corollas were 12.0-14.0 mm long.

A conspicuous character in the field separating the hybrid from next door *orientale* was the posture of the corolla lobes, reflexed in the hybrid but erect in *orientale*. Reflexed corolla teeth were also found in the nearby *S. officinale* and in the other three forms of the hybrid here described.

6 out of 8 calices measured at anthesis were c.7.0 mm long, one c.6.5 mm. and one c.8.0 mm. Calyx dissection was to around half way, mostly just below ($\frac{2}{5}$ – $\frac{1}{2}$), and the calyx lobes were broadly triangular, much broader than in *S. officinale*.

The nutlets were smooth like those of the *S. officinale* over the river, rather than minutely tuberculate like those of the *S. orientale*. They were not plumping up evenly like those of the parent plants.

A further character is that the hybrid has a long extended flowering period with the inflorescence hardly elongating between the flowers after anthesis and becoming unusually dense and floriferous - so, perhaps, justifying the epithet "floribundum"!

Short, semi-decumbent, narrow leaved form

These plants are considerably shorter (50-75 cm) and decumbent to ascending rather than erect, if anything shorter than the *S. orientale*. The upper and mid stem leaves are a similar shape to those of the tall form, broadest very near the base and then attenuating very gradually to a finely acute to acuminate tip, but they are comparatively even more slender, without such a bulge at the base.

The petioles again are only a centimetre or two long on the uppermost leaves but rapidly become much longer lower down, with much the same broad petiole winging at the leaf insertion. Stem winging is also much as in the tall form from only a centimetre or two long, to long enough just to reach the next node down, but most reaching somewhere around midway.



Figure 5. *Symphytum* × *ferrariense*, short, semi decumbent, narrow leaved form. Chesterton (TL47116005), 22/5/23. Note A: more decumbent habit, height up to 75 cm and narrower upper stem leaves; B: calyx dissection to just over halfway ($1/2 - 3/5$) and often yellowish, narrower corolla bell. Photos: Robert Leaney.

The upper surface leaf indumentum is very much the same as in the tall form, much resembling *S. orientale*, but the undersurface indumentum is very like that of *S. officinale*: virtually only minute uncinata hairs on the lamina, with bristles confined to the midrib and venation.

Stem indumentum is very like that of the tall form, with semi appressed, weak kinked hairs, occasional stiff smoothly curved fine bristles and a few tiny uncinata hairs. The pedicel and calyx indumentum are again near identical.

The corolla is very different from that of the tall form, with very greenish buds and the bell of the open corolla consistently showing a greenish yellow rather than white colouration - in most cases only the tube of the corolla is white or cream. Also striking is the shape of the corolla bell, narrow and $\pm$ parallel sided rather than bulbous as in the tall form. Eight detached corollas measured 12.0-14.0 mm, much as in the tall form; the corolla teeth were also similarly reflexed. These differences in shape and colour of the detached fresh corolla in the two forms are shown in the photos.

Calyx shape and dissection is also slightly different in the two forms. In the tall form dissection is usually to just under $1/2$ way ($2/5 - 1/2$) and in the short form slightly over $1/2$ way ($1/2 - 3/5$), with more narrowly triangular calyx teeth. The deeper dissection and narrower calyx teeth in the short form both fit with the assumption that this form is the result of backcrossing with the nearby *S. officinale*. The narrower leaves and *officinale*-like undersurface leaf indumentum also fit with this hypothesis. Calyx length was 6.5-8.0 mm, the same as in the tall form.



Figure 6. Detached corollas of tall, erect form of *S. x ferrariense*, Chesterton (TL47116005), 23/5/23; Note bulbous corolla bell, pure white, one day after picking, except for some greenish near the apex of the more immature corolla top left. Photo: Robert Leaney



Figure 7. Detached corollas of short semi decumbent form of *S. x ferrariense*, Chesterton (TL47116005), 23/5/23: Note narrower, more parallel sided corolla bell. All corollas, one day after picking, with greenish yellow bell and white tube. Photo: Robert Leaney.

Other possible determinations

One has to ask first if the Cambridge plants could possibly be varieties of a species or nothospecies that just happens to be growing in a patch of *S. orientale*, rather than an *orientale* hybrid. *S. x uplandicum* is really the only serious possibility here as it is widespread in the vicinity, immensely variable and can have similarly long stem winging. Furthermore, forms of *S. x uplandicum* with yellow or cream as well as pink in the corolla have been found at Soham near Cambridge and in Bradford (Leaney, 2016). However, all forms of *S. x uplandicum* have $\frac{3}{4}$ rather than $\frac{1}{2}$ dissected calices and even yellow or cream flowered forms would almost certainly have some pink, purple, blue or violet in the open corolla. The only other comfrey taxon with cream or yellow flowers and some stem winging is *S. bulbosum* K.F.Schimper, but this is a short plant with very short winging and exerted corolla scales.

A hybrid between *S. officinale* and *S. caucasicum* (*S. × mosquense* S.R. Majorov & D.D. Sokoloff) would explain the shallow calyx dissection, but such a hybrid would have some pink or red in the buds and some blue in the open flowers; an albino form would not have greenish buds. Similarly, a form of *S. × perringianum* would be expected to have pink or blue in the open flowers.

The Cambridge plants are growing in the midst of a large population of *S. orientale* and much resemble *S. officinale* which occurs close nearby. They show convincing intermediacy between these two taxa, especially in flower colour, calyx dissection, leaf indumentum and length of stem winging, as outlined in the descriptions. The greenish buds (diagnostic of *S. officinale*) and pure white corolla in the tall form (diagnostic of *S. orientale*) are especially persuasive that these plants are hybrids between *S. officinale* and *S. orientale*.

Description of the Cheshire plants

The Cheshire plants were first reported by SRH to RML from Alsager, c.15 km north of Stoke-on-Trent (SJ812546) in 2020. The two clonal patches, about 15 m apart, had been previously recorded in 2010, 2011 and 2015, with misidentifications as *S. officinale* and *S. × uplandicum*. By 2021, the two patches were each around one metre in diameter, with a few smaller plants nearby, consisting of about 10 plants in all. The population was growing in dense *Pteridium aquilinum* (L.) Kuhn with *Urtica dioica* and *Galium aparine* L. also associated. The plants appeared to be mostly sterile, only one non-abortive fruit being found and the smaller plants around the main patches were probably the result of dissemination of vegetative propagules by council verge mowing - the verge is mown once a year.

The following description is from photos and material sent to RML on 21/6/20 and 10/6/21.

Similar in habit and stature to the tall, erect Cambridge form, height around 130 cm, with overall fairly narrowly lanceolate leaves, but with upper stem leaves rather more ovate-lanceolate. The petioles are again broadly winged, with petiole winging 5-10 mm wide at the leaf insertion on the upper stem leaves. Stem winging is similar also, mostly extending $\frac{1}{4}$ - $\frac{1}{2}$ way to the next node down, but sometimes down to or beyond it. Stem indumentum on the upper and midstem is again of very sparse, long, downwardly curved *officinale*-like bristles, mixed with weak, kinked bristles and minute uncinata hairs. However, the lower stem indumentum is very much more like *S. officinale* or some forms of *S. × uplandicum* with dense, long, downwardly curved bristles and minute uncinata hairs only. The indumentum of inflorescence branches and pedicels is the same as in the tall Cambridge form.

The corolla colour in bud is a pale yellow-green colour but without the darker green blotches of the Cambridge plant; the open corolla is pure white.

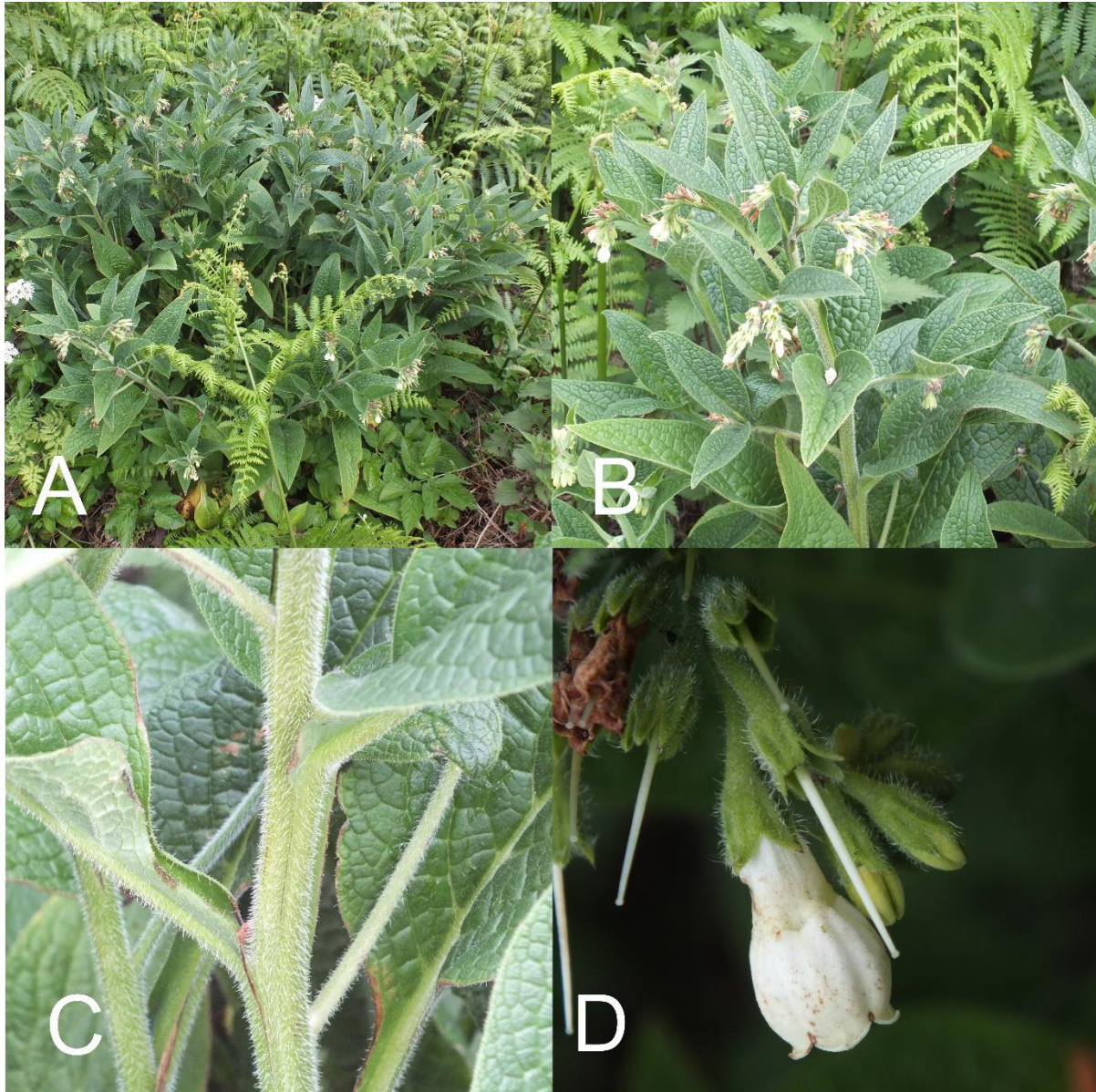


Figure 8. *S. x ferrariense*, Alsager, Cheshire (SJ812546), 10/6/21. Note A: tall plant up to 130 cm; B: more broadly ovate upper stem leaves; C: stem winging occasionally down to the next node, but mostly to about halfway; D: shallower calyx dissection and broader calyx lobes than in the Cambridge plants, white corolla. Photos: Stewart Hinsley.

Calyx dissection and shape is definitely different from the Cambridge plant. Calyx dissection is noticeably shallower, to only $\frac{1}{4}$ - $\frac{1}{3}$ when the corolla is in bud, but to around $\frac{2}{5}$ - $\frac{1}{2}$ when the corolla is open, presumably because the calyx lobes elongate along with the corolla and the calyx tube does not. The shorter calyx lobes are more or less equilateral triangular in shape, broader than in the Cambridge plants, where they are isosceles triangular. The parent taxa have not been seen in the near vicinity. The nearest known site for *S. orientale* is at Cold Moss Heath (SJ706602) near Sandbach, 5.5 km to the NW. *S. officinale* is present in Alsager (SJ802553 and SJ802561), 1.2 km to the NW and 1.8 km to the NNW. With no putative seed parent nearby it is possible that these plants arose in cultivation and were introduced to the site as garden throw outs - *Aster lanceolatus* Willd. and

Doronicum × *excelsum* N.E.Br. were to be found nearby. On the other hand, cream coloured forms of *S. officinale* are rarely if ever found in cultivation, so it is perhaps more likely that the hybrid seed arrived on cutting machinery used to cut the road verge from an unknown site where it had arisen spontaneously.

Description of the Norfolk plants

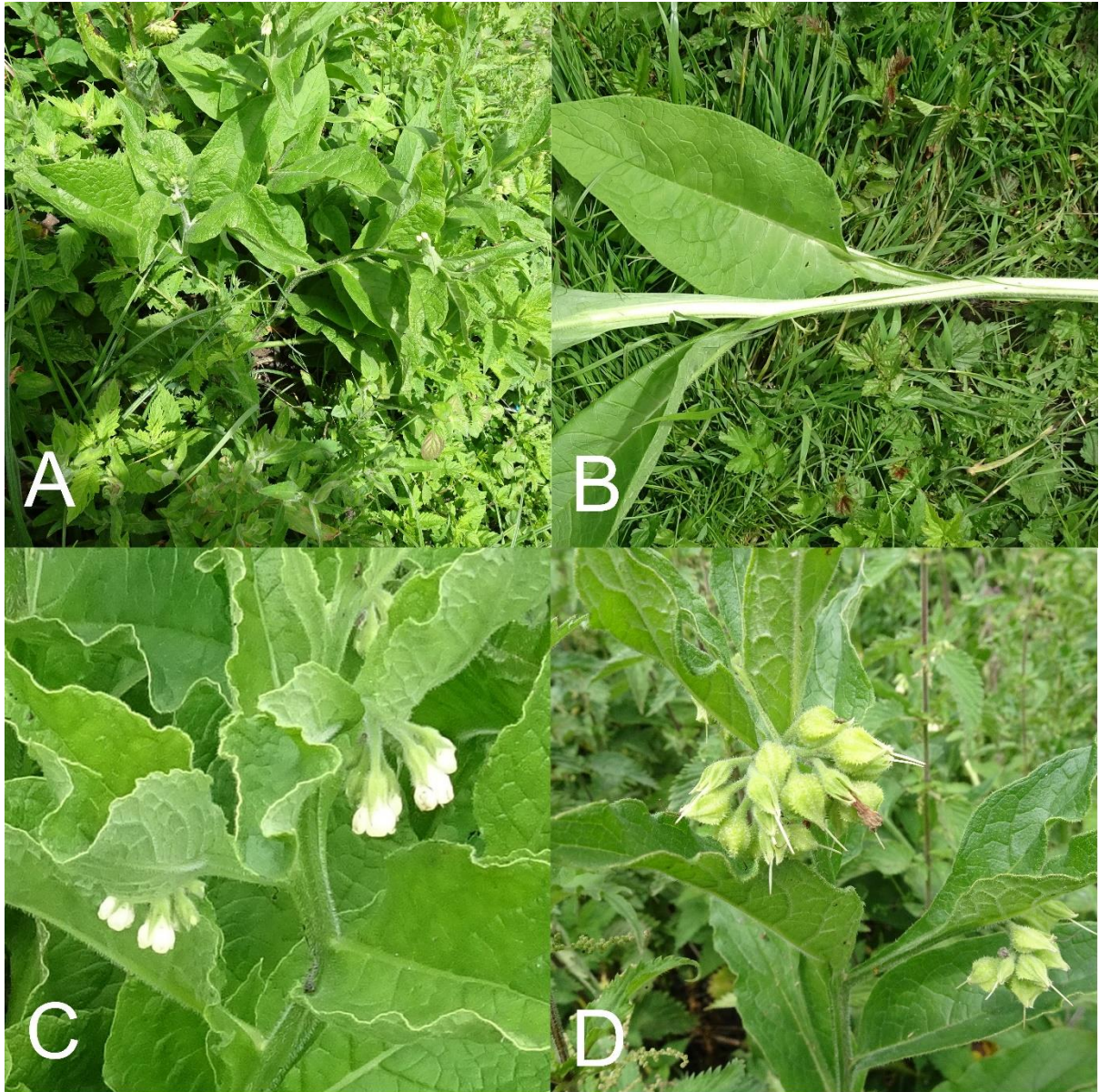


Figure 9. *S. x ferrariense*, West Acre, Norfolk (TF78931507), 6/7/23. Note A: broadly ovate leaves, but with abruptly attenuated acute tips; B: long stem winging, sometimes nearly down to next node; C: calyx dissection to around 1/2, very broadly triangular calyx lobes, pure white open corolla; D: inflation (accrescence) of calyx post anthesis. Photos: Robert Leaney.

What would appear to be yet another nothomorph of *S. x ferrariense* was found growing on the edge of a footpath very close to the River Nar, a kilometre or so to the east of West Acre village Norfolk (TF78931507) in July 2023, by RML and

members of the Norfolk Flora Group. Around 20 plants were growing next to the path in tall herbaceous vegetation dominated by *Urtica dioica*, which had been cut back some weeks before along with the comfrey plants. Regrown plants were 50-75 cm high and were just coming into flower; one plant had a few open flowers as well as buds. The following description is taken from these photos and from the plant with open corollas taken for examination the same day.

These plants again showed convincing intermediacy between *S. officinale* and *S. orientale* in flower colour, lengths of stem winging and calyx dissection. As can be seen from the photos (Fig. 9), the flowers were pale yellowish-green in bud and pure white when fully opened, but on the specimen taken for examination and pressing, the open flowers had turned a very pale yellow overnight. 6 detached corollas were 12.5-14.5 mm long. Calyx dissection was very variable, $\frac{1}{3}$ - $\frac{3}{5}$ or even $\frac{2}{3}$ of the way to the base. 3 calices measured 7-9 mm. Petiole winging was 5-7 mm wide at the petiole insertion on the upper leaves, and stem winging stretched $\frac{2}{3}$ - $\frac{9}{10}$ of the way to the next leaf insertion down. Stem indumentum was a mixture of smoothly curved *officinale*-like bristles and minute uncinata hairs, but the downwardly curved bristles were much shorter than in *S. officinale* or the Cheshire nothomorph.

By far the most striking difference between these plants and the other forms described was in leaf and calyx shape. Upper and mid stem leaves, rather than being lanceolate, were broadly ovate, much like *S. orientale*, but with abruptly attenuated acute acuminate tips and very short, broadly winged petioles. The calyx lobes at anthesis were also much more broadly triangular than in the other forms and after flowering calices become markedly accrescent (inflated), another feature of *S. orientale*. The leaf shape and calyx accrescence suggest a back cross with *S. orientale*, though this hypothesis is not supported by the deeper calyx dissection.

Neither of the putative parents were found in the vicinity, but *S. officinale* is certainly known from along the River Nar and has been recorded this year only about 2 km to the west.

Conclusion

All four forms of *S. × ferrariense* described here show convincing intermediacy between *S. officinale* and *S. orientale*. All much resemble a cream flowered form of *S. officinale* in flower colour, erect or semi-erect habit, upper stem leaf shape, and conspicuous stem winging, but differ as follows: leaves not so narrowly lanceolate; shorter stem winging mostly not extending down to the next node; greenish buds, but open corolla either pure white or patchily flushed with green or yellow, rather than cream; calyx dissection to around $\frac{1}{2}$ rather than $\frac{3}{4}$ to the base; calyx lobes broadly rather than narrowly triangular and remaining well appressed to the corolla.

It seems most likely that the records of *S. × ferrariense* from Var, Southern France, over the last 3 decades of the 19th century were of hybrid plants arisen in horticulture in SW Russia and imported into the port of Toulon. The three English populations described here, however, seem to have arisen spontaneously in the wild, especially in the case of the Cambridgeshire plants, and the absence of any records since 1892 is probably mainly due to reproductive isolation. *Symphytum orientale* has until recently been largely confined to urban habitats and only in this century has it spread along roads into rural areas close to the wetland sites most favoured by *S. officinale*.

It is very likely that more examples of this hybrid will be found now botanists are aware of its existence, especially in SE England, where *S. orientale* would seem to be a much commoner plant than anywhere in Europe. A quick check for the “half dissected” calyx, broad calyx lobes and shorter stem winging should quickly suggest *S. × ferrariense* rather than pure *S. officinale*. These characters should also be found in hybrids of *S. orientale* with carmine flowered forms of *S. officinale*, but here one would expect to find some red or purple colouration in the corolla.

Symphytum × ferrariense can also be misidentified as *S. × uplandicum*, especially as forms of *× uplandicum* can have very long stem winging and yellow or cream, as well as pink in the open flowers. (Leaney, 2016). Here again the ½ rather than ¾ dissected calyx and broad calyx lobes should point to *S. × ferrariense*.

References

- Bucknall, C. 1913. A revision of the genus *Symphytum*. *J. Linn. Soc. Bot.* 41:491-556
- Cecchi, L. & Selvi, F. 2017. *Flora critica d'Italia*. Boraginaceae: Fondazione per la flora Italiana
- Gadella, T.W.H., Kliphuis, E. & Perring, F.H. 1974. Cytotaxonomic studies in the genus *Symphytum*. VI. Some notes on *Symphytum* in Britain. *Acta Bot Neerl.* 23(4):433-437
- Hills, L.D. 1976. *Comfrey past, present and future*. London: Faber & Faber.
- Kurto, A. 1981. Taxonomical status of *Symphytum floribundum* and *S. × ferrariense* (Boraginaceae). *Ann. Bot. Fennici* 18:13-21
- Leaney, R.M. 2016. Pink-yellow-cream flowered forms of *Symphytum × uplandicum* in Yorkshire and Cambridgeshire. *BSBI News* 131:26-30
<https://bsbi.org/download/4880/?tmstv=1752528836>
- Leaney, R.M., 2019. *Symphytum caucasicum* × *S. orientale* (Boraginaceae) in East Norfolk and Isle of Wight. *British & Irish Botany* 1(4):327-334
<https://doi.org/10.33928/bib.2019.01.327>
- Leslie, A.C., 2019. *Flora of Cambridgeshire*. Peterborough: Royal Horticultural Society.
- Massalongo, C. 1913. Di un nuovo ibrido del genere *Symphytum* L. *Bulletino della Società Botanica Italiana* 6:78-79
- Nyman, C.F. 1881. *Consp. Fl. Eur.* 3:509
- O'Reilly, C.L. & Leaney, R.M. 2009. A new Nothospecies in *Symphytum* (Boraginaceae). *Watsonia*, 27:372-374
<http://archive.bsbi.org.uk/Wats27p369.pdf>
- Pawłowski, B. 1971. *Symphyta mediterranea nova vel minus cognita*. *Fragm. Flor. Geobot.* 17(1):17-37
- Perring, F.H. & Walters, S.M., eds. 1976. *Atlas of the British Flora* 2nd ed. London: Thomas Nelson & Sons.
- Perring, F.H. 1998. In: Rich, T.C.G. & Jermy, A.C. *Plant Crib*. London: Botanical Society of the British Isles.
- Preston, C.D., Pearman, D.A. & Dines, T.D., eds. 2002. *New Atlas of the British & Irish Flora*. Oxford: Oxford University Press.
- Schultz, F. 1875. Beiträge zur Flora der Pfalz, *Bot. Zeit.* 58:216-223
- Sell, P.D. & Murrell, G. 2009. *Flora of Great Britain & Ireland*. Vol. 3. Cambridge: Cambridge University Press

- Stace, C.A. 2019. *New Flora of the British Isles*, 4th ed. Middlewood Green, Suffolk: C & M Floristics.
- Stroh, P.A., Walker, K.J., Humphrey, T.A., Prescott, O.L. & Burkmar, R.J., eds. 2023. *Plant Atlas 2020*, Vol 2. Princeton: Botanical Society of Britain and Ireland & Princeton University Press.
- Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H., Walters, S.M., & Webb, D.A, eds. 1972. *Flora Europaea*, Vol 3. Cambridge: Cambridge University Press.

Copyright retained by author(s). Published by BSBI under the terms of the [Creative Commons Attribution 4.0 International Public License](#).

ISSN: 2632-4970

<https://doi.org/10.33928/bib.2025.07.073>