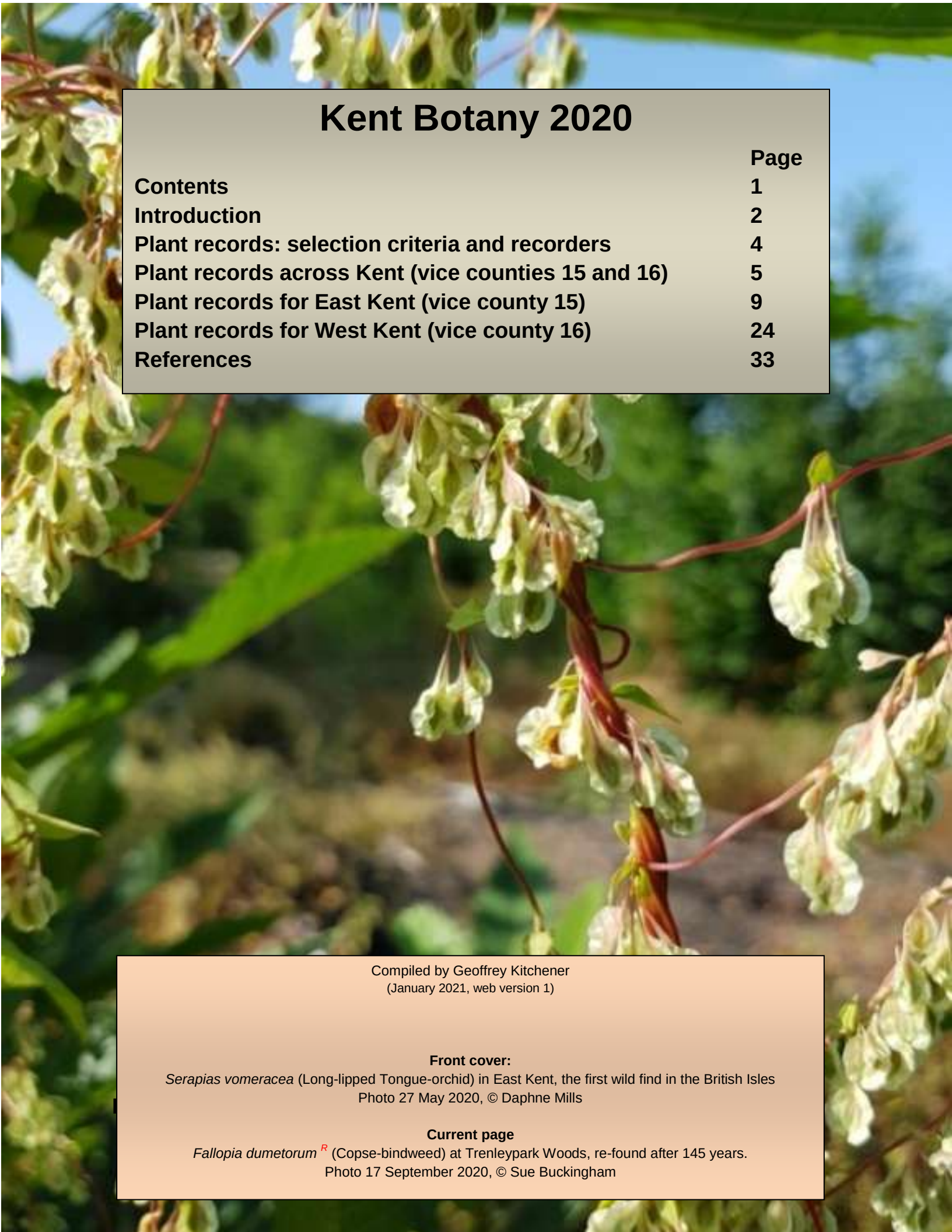

KENT
BOTANY
2020
Kent
Botanical
Recording
Group

Kent Botany 2020



Compiled by Geoffrey Kitchener

(January 2021, web version 1)

Front cover:
Serapias vomeracea (Long-lipped Tongue-orchid) in East Kent, the first wild find in the British Isles
Photo 27 May 2020, © Daphne Mills

Current page
Fallopia dumetorum [R] (Copse-bindweed) at Trenleypark Woods, re-found after 145 years.
Photo 17 September 2020, © Sue Buckingham

Introduction

Kent Botany 2020 is the eleventh report in the Kent Botany series, reporting on current botanical developments in the county. This report is issued primarily as a web version, maintained on the Kent page of the BSBI website, https://bsbi.org/kent, and this should be regarded as the definitive version. Hard copy is published in substantially similar form within the Kent Field Club Bulletin.

Highlights

The 2020 recording year was of course memorable for the COVID-19 pandemic, which meant that group botanical activity could not take place. Nevertheless, individual botanising continued, and some remarkable discoveries were made. These included:




- The discovery of *Serapias vomeracea* (Long-lipped Tongue-orchid) in East Kent, the first wild find in the British Isles of this Continental orchid.
- The re-finding of *Fallopia dumetorum* (Copse-bindweed), previously on the county 'probably extinct' list because not seen since the 1970s. It was recorded, not only in its 1970s location, but also, extraordinarily, in other sites where last seen in 1948 and 1875 respectively.
- The restoration to the current Kent flora of *Persicaria mitis* (Tasteless Water-pepper), now found in the Little Stour catchment, but previously last seen near Orpington/Petts Wood in 1955.
- The re-discovery of *Spartina maritima* (Small Cord-grass) at a classic location by the Swale where last seen in 1990.

Overall, 17 taxa new to East Kent are reported (including a couple which are recent 'splits') and ten new to West Kent, including a couple of old records reported in recent literature

Botanical developments in Kent, 2020

Plant distribution review

The results of the last ten-year recording cycle (2010-19) are still being processed in the BSBI's Atlas 2020 project, but it is possible to see that the distribution of some taxa needs reviewing in order to establish why earlier records have not been re-found. This was done with *Polygala calcarea* (Chalk Milkwort) by early recording on many West Kent chalk grassland slopes: the plant was widespread and may have been missed in recent years through not persisting after *Polygala vulgaris* (Common Milkwort) was found (reported in more detail in KBRG newsletter no. 13, October 2020). An initial attempt was also made to check *Jacobaea aqua*ticus [R] (Marsh Ragwort) in West Kent, whose reduced distribution is likely to have been affected by habitat scrubbing over or by herbicidal treatment; the position is reported further below. *Agrostis vinealis* [R] (Brown Bent) was also specifically searched for in West Kent and its recorded distribution is now amplified considerably (see also below).

Back from 'extinction'

A particularly welcome feature of the results for 2020 was the finding of 'probably extinct' species *Fallopia dumetorum, Persicaria mitis* and *Spartina maritima,* all now transferred to the rare plant register. It is worth using the 'probably extinct' list (available at the BSBI website, details above) as a tool for re-finding, given that it contains details of where a species was last found. There is a section listing 21 species (after discounting those now re-found) which have potential for re-finding and which would qualify for the rare plant register as natives or archaeophytes. Admittedly, the list would not have assisted with the discovery of *Persicaria mitis* in East Kent, in an area where previously unknown; the potential habitat for this species appears quite widely available, in spite of the lack of records. *Spartina maritima*, however, appears to have remained where it was last seen, awaiting eyes of recognition.

The first site for *Fallopia dumetorum* was again the last known one, as given in the 'probably extinct' list, but its rediscovery prompted a search of a 1948 site given in Francis Rose's manuscript *Flora of Kent*, and the success of that in turn gave rise to its re-finding at an 1875 site given in Hanbury & Marshall's *Flora of Kent* (1899). This last discovery is comparable with that of *Eleocharis quinqueflora* [R] (Few-flowered Spike-rush) at Ham Fen in 2017, where last seen in the 1830s. Both examples point to potential for re-appearance of species after very long periods without

record, perhaps prompted by appropriate management conditions. There should be a lesson here for re-introduction projects, that where it is considered desirable to re-introduce a rare plant (using material which, by definition, is going to come from somewhere else), it is best to do so in a location which research shows to be suitable, but without previous records. To do otherwise, would be to create confusion in future records, so that it would not be known whether new plants are truly native or a product of gardening in the wild.

Site surveys

Recording in 2020 has drawn attention to a number of interesting sites. A summer survey of land at Luddesdown funded by the Old Chalk New Downs project revealed many good chalk grassland species including *Cuscuta epithymum* [R] (Dodder) and what was considered to be one of the largest surviving colonies of *Campanula glomerata* [R] (Clustered Bellflower) in the county.

In September, a visit by Richard Lansdown to update information on the English status of *Potamogeton acutifolius* [R] (Sharp-leaved Pondweed) under Natural England's Species Recovery Programme led, not only to the re-finding of that species, but a number of rare and interesting aquatic and ditch-side plants, some of which are reported below. The sites examined were near Smallhythe and by the old crayfish lagoons south west of Tenterden, both of which have a similar history of having been subject to flooding from the diversion of the River Rother north of the Isle of Oxney in the 1330s, the river flow then being insufficient to clear silt and to discharge winter waters to the sea without flooding backing up. By 1629, some 3,000 acres of the Upper Levels were 'drowned lands' but with the diversion of the Rother back south of Oxney and subsequent drainage works, these lands were eventually reclaimed. So the ditches with their *Potamogeton acutifolius* have a history of marine transgression and impeded drainage which must have conditioned the flora now to be found in them.

A further site of considerable interest has been revealed by records made at the proposed Betteshanger Grove residential/commercial/retail development site, where planning permission is being sought for 210 houses. The substrate here is colliery spoil, highly infertile and both very dry in summer and drainage-impeded in winter through compaction, so that successional colonisation by plants is very slow and enables species to flourish which are intolerant of competition. There are analogies here with the East Anglian Breckland sands (and the presence of *Apera interrupta* (Dense Silky-bent), new to Kent, is common to both), and the site appears to be a classic example of the UK Biodiversity Action Plan Priority Habitat "Open Mosaics on Previously Developed Land" where re-wilding has resulted in a flora of extraordinary interest and diversity. The long plant list includes *Aira praecox* (Early Hair-grass), *Blackstonia perfoliata (*Yellow-wort), *Carlina vulgaris* [R] (Carline Thistle), *Centaurium pulchellum* (Lesser Centaury), *Epilobium brachycarpum* (Panicled Willowherb), *Euphorbia exigua* [R] (Dwarf Spurge), *Filago germanica* [R] (Common Cudweed), *Fragaria vesca* [R] (Wild Strawberry), *Galium parisiense* [R] (Wall Bedstraw), *Logfia minima* [R] (Small Cudweed), *Lythrum hyssopifolia* [R] (Grass-poly), *Mentha pulegium* [R] (Pennyroyal), *Ophrys apifera* (Bee Orchid) with its rare var. *chlorantha*, *Ranunculus parviflorus* [R] (Small-flowered Buttercup), *Trifolium fragiferum* [R] (Strawberry Clover), *Trifolium ornithopodioides* (Bird's-foot Clover), *Trifolium suffocatum* [R] (Suffocated Clover) and *Veronica officinalis* [R] (Heath Speedwell). Further details of some of these are given later in this report, but there are 12 rare plant register species, including Endangered and Critically Endangered ones, and the site would appear better suited as a Site of Special Scientific Interest than a housing estate.

Kent Biodiversity Strategy

During 2020, the KBRG was invited to be involved in the selection of indicator species for the KCC's updating of the Kent Biodiversity Strategy, which has an aim to deliver, over a 25-year period, the maintenance, restoration and creation of habitats that are thriving with wildlife and plants and ensure that the county's terrestrial, freshwater, intertidal and marine environments regain and retain good health. The plant species selected were *Orchis purpurea* [R] (Lady Orchid or Fair Maid of Kent), *Polygala amarella* [R] (Dwarf or Kentish Milkwort) and *Carex vulpina* [R] (True Fox-sedge). The KBRG is to have continued involvement as champions for these species, all of which are in some way iconic for the county and deserve fuller understanding of their current status and needs. *Orchis purpurea* has its main British populations in Kent and we have begun a project of resurveying over a period of five years 20 of the largest colonies, as well as others so far as they can be managed. The first season's progress was reported in KBRG newsletter no. 13 (October 2020) and included visits to 13 sites with recorded plants varying from zero to 1,550 flowering and >2,000 blind ones. *Polygala amarella*, if treated as subsp. *austriaca* in relation to its distinctive Kent form, would be Critically Endangered. It could not be found at Magpie Bottom in 2020 although still present at Purple

Hill, Bredhurst. *Carex vulpina* in Britain is primarily a plant of the Kent and Sussex Weald, and it is hoped to discover more of how it may be affected by habitat change. Eleven records from seven sites were made by Stephen Lemon in the period May-August, one of these including the presence of many seedlings.

Rare plant register (RPR)

Drafting the RPR species accounts continued, with Parts Q & R finished off and about half of Part S issued as well as accounts for those species which transferred from the 'probably extinct' list to the RPR during the course of 2020. All accounts were updated on-line in February, to reflect 2019 records. The completion of BSBI Atlas 2020 recording has left space for a focus on RPR records, and the total for 2020 received up to 1 January 2021 was 1,326, including some hybrids involving RPR species. Some of these records are covered by the accounts below, but not all records are new, and some help track the size of known populations. For example, *Anacamptis morio* [R] (Green-winged Orchid) on the front lawn of Chestfield Church has been counted by John Puckett over a number of years, with 1,003 flowering spikes in April (not as high as 1,145 in 2018, but about double the numbers in 2011-12). Peter Heathcote reported the Hartley Wood colony of *Dipsacus pilosus* [R] (Small Teasel) as having expanded enormously over the last four or five years and it now occupies at least 1,000 square metres, with a density of at least 40 plants per square metre, yielding an estimated total of 40-50,000 plants. Alan Blackman revisited the *Himantoglossum hircinum* [R] (Lizard Orchid) population at Discovery Park, Sandwich which numbered eight plants when he found it in 2016. His count now was at least 219 flowering spikes in a habitat which was only created around 2004 and which must have one of the largest populations in the UK; it is sufficiently separate from the Sandwich Bay colony to be treated as distinct and there are signs of it spreading further. Sue Buckingham was given the opportunity of counting *Ophrys sphegodes* [R] (Early Spider-orchid) in a private cliff-top garden at Kingsdown where known, but not previously investigated; there were 585 flowering spikes, which could place the colony as the second largest in Kent, next to Samphire Hoe. From Ranscombe Farm reserve, Richard Moyse confirmed continued progress with providing the right conditions for *Salvia pratensis* [R] (Meadow Clary) to increase through self-sown seedlings: one group had 74 rosettes including seven flowering and 33 young plants establishing themselves; another had 30 rosettes, of which 14 were flowering and seven were establishing young plants.

Plant records: selection criteria and recorders

Kent Botany 2020 covers Kent plant records mostly made or reported in that year. 'Kent' for these purposes comprises botanical vice counties 15 (East Kent) and 16 (West Kent). The area is more extensive than the administrative county of Kent plus Medway Council unitary authority's area, reaching northwest into London as far as Deptford. The vice county boundaries may be viewed at: https://www.cucaera.co.uk/grpprev/.

The record selection criteria are flexible, but they focus on plants which are unusual in Kent, or where the plant's location, habitat or population characteristics are unusual. Preference is given to publication of new discoveries, particularly those which do not correspond with a tetrad recorded in Philp (2010). Taxa which are new to vice county 15 or 16 are given in **bold**. Records of known populations of RPR species will usually be carried through for publication in the draft register, and are not necessarily set out in these records. Nomenclature follows Stace (2019). All dates given in the records are for 2020, unless otherwise indicated.

Recorders, referees and other persons mentioned in reports

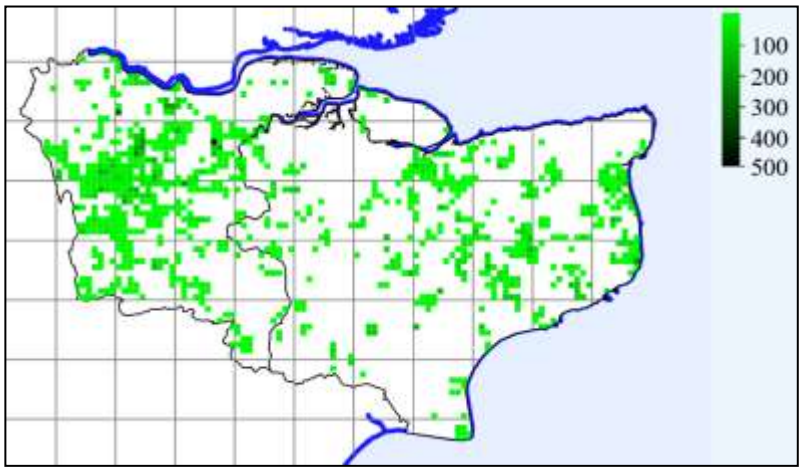
ACL Alan Leslie	EW Elizabeth Winterbourne	LR Lliam Rooney	RM Richard Moyse
AG Alfred Gay	FJR Fred Rumsey	LS Lindsay Stronge	RMB Rodney Burton
AJR Prof. John Richards	FR Francis Rose	MA Martin Allison	RoF Lady Rosemary FitzGerald
AL Alex Lockton	GH Graham Harris	MAS Mark Spencer	SA Sheila Anderson
AW Allan Ward	GK Geoffrey Kitchener	ME Mike Easterbrook	SB Sue Buckingham
CP Chris Preston	JA Jan Armishaw	ML Mel Lloyd	SC Steve Coates
CW Caroline Ware	JC Juliet Cairns	MR Mike Robinson	SD Steven Denton
DC Danny Chesterman	JL Jacky Langton	MRP Mike Porter	SK Sarah Kitchener
DG Doug Grant	JP Joyce Pitt	OL Owen Leyshon	SL Stephen Lemon
DJ David Johnson	JPo John Poland	RAG Rex Graham	SP Sue Poyser
DJMcC David McCosh	JRA John Akeroyd	RB Richard Bateman	SS Susan Sullivan
DM Daphne Mills	KC Ken Chapman	RG Richard Gowing	SW Steffan Walton
DS David Steere	LC Lucy Carden	RH Bob Heddle	
DT Dan Tuson	LCa Lou Carpenter	RL Richard Lansdown	

Thanks are due to all these who have contributed; to John Puckett, Peter Heathcote and Alan Blackman as mentioned in the introduction above; and to Charmian Clay for comments on the report presentation.

Other abbreviations or notation

BSBI = Botanical Society of Britain & Ireland (formerly Botanical Society of the British Isles)	Plant records which are marked [R] represent plants on the 2020 draft Kent rare plant register list
cv. = cultivar	s.s. = *sensu stricto*, in the strict sense
KBRG = Kent Botanical Recording Group	var. = variety
pers. comm. = personal communication	vc = vice county

Plant records across Kent (vice counties 15 & 16)



Kent 2020 records input to BSBI database

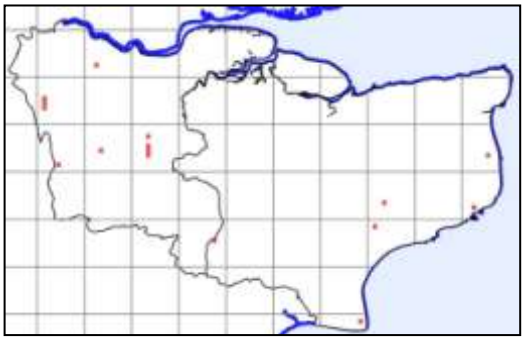
Agrostis vinealis [R] (Brown Bent) in Kent

Agrostis vinealis was included in the county rare plant register on the basis that Philp (2010) gave only five tetrad records for the period 1991-2005. It had not been separated from *Agrostis canina* (Velvet Bent) in Philp (1982) and, indeed, its current separation in recording begins with Clapham, Tutin & Moore (1987), so that its Kent distribution had been uncertain. The two species have different habitat preferences, with *A. canina* growing in damper conditions. There is also a distinction between the growth habit *of A. vinealis* and *A. canina* (the former being tufted without stolons; the latter having surface-creeping runners with their tufts of fine shoots at the nodes); this is illustrated here by SB's cultivation experiments.

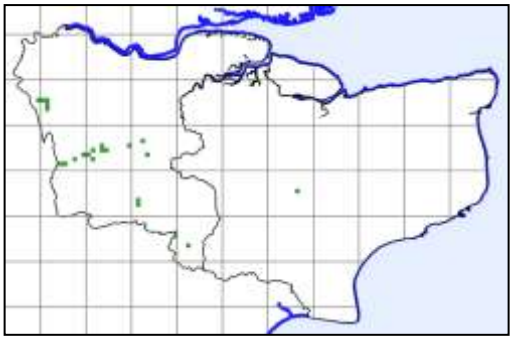
***Agrostis vinealis* (left) and *A. canina* (right), November 2020. Photo © Sue Buckingham**

This position regarding the Kent distribution of *A. vinealis* is now resolving: with one tetrad record made in the period 2000-2009; 17 monad records made during the period 2010-2019; and 24 monad records made in 2020 alone. In this latest year, it was confirmed by SB in East Kent from Hothfield Common, whilst in West Kent it was recognised by GK in suitable habitats in TQ39, TQ45, TQ46, TQ55, TQ63, TQ64 and TQ73, where there

were highly infertile acid soils. The accompanying distribution maps compare monad records for 2010-19 with those for 2020.



***Agrostis vinealis* 2010-19**



***Agrostis vinealis* 2020**

In West Kent, these soils are often used for forestry, as unsuitable for other cultivation; and the grass has now been found on rides and banks of plantations on the sandy chartlands north of the Greensand Ridge, and on the Tunbridge Wells Sand Formation, e.g. at Bedgebury and Kilndown. It is also recorded on the acid gravelly commons of north west metropolitan Kent, e.g. West Wickham, Hayes and Keston Commons (all on the Harwich Formation), and at Dartford Heath (on sands of the Thanet Formation). With this clarification, it looks as though continuation of the species in the rare plant register is not sustainable other than on a short-term basis to encourage even fuller recording.

Allium trifoliatum (Hirsute Garlic) in Kent

Over the period 2010-20, *Allium subhirsutum* (Hairy Garlic) was given 23 Kentish records, and these identifications probably conformed with Stace (2010) and its preceding editions which did not offer any other similar choice. However, it has since been recognised that there is another cultivated and escaping white flowered *Allium* with terete stems and hairy leaf edges, and this is *Allium trifoliatum*. It is now given in Stace (2019) and seems to be the commoner of the two in the Bexhill/Eastbourne area (5:1, given by Berry, 2016) and in Surrey (8:1, given by Hounsome, 2020). They are readily distinguished by the flowers: *A. subhirsutum* with red/brown anthers and white tepals with a green, or no, stripe; and *A. trifoliatum* with yellow anthers and white tepals with a pink stripe. All our *A. subhirsutum* records ought to be re-checked where the plant is still present. Our **first recognised record for East Kent** was by LR and DC, of several plants amongst dumped soil and bricks in a disused gravel pit near Oare, TR 008 641, seen on 19 May. For comparison, they then also saw two plants of *A. subhirsutum* not far away, TQ 008 642. Two days later, on 21 May, DS saw plants by a woodland path at Sponden Lane, Sandhurst, TQ 7906 2949. The **first recognised record for West Kent** appears to have been by MR near Erith, TQ5079, beside the footpath from Church Manorway to the Thames Path, found on 24 April 2016, surmised by GK to have been *A. trifoliatum* at the time, but not followed through with confirmation until 2020.[1]

***Allium trifoliatum*, 19 May 2020. Photo © Lliam Rooney**

Euphrasia nemorosa x E. pseudokerneri [R] in Kent

The hybrid between Common and Chalk Eyebrights may occur at the overlap where *E. nemorosa* replaces *E. pseudokerneri* on lower chalk downland slopes or rougher grassland, with hybrid swarms where species overlap. Philp (1982) refers to intermediate plants usually being present where the two species grow together, although the hybrid was not recorded specifically in that survey; and in Philp (2010) the only hybrid record was near Otford (TQ56A). More recently, convincing hybrids were seen at Folkestone Warren (TR 258 383, KBRG meeting on 9 June

[1] No doubt other re-assessed records will emerge; and after this report was written it has been possible to confirm as *A. trifoliatum* two records made by DM: at Blue Bell Hill (TQ 749 607) on 5 May 2012 and Aylesford (TR 740 590) on 17 May 2014, both vc15.

2018) with corollas up to 10mm long (and so outside the range of *E. nemorosa*), flowering well before *E. pseudokerneri* begins. The flowering period for *E. pseudokerneri* is August to September (October); that for *E. nemorosa* is late June/early July onwards. The hybrid can flower earlier than both parents, so plants with long corollas flowering in May/early June may be expected to be this.

In 2020, six hybrid sightings were made by GK which fulfilled these criteria, as a byproduct of surveying numerous chalk grassland sites for *Polygala* (Milkwort). In East Kent on 8 June numerous plants were found at Purple Hill, south of Gillingham, TQ8162, which had evidently been flowering for some time, the 9mm corollas being violet-tinged. The other sites were in West Kent: at Brasted Hill, TQ 4603 5714, on 20 May (corollas 8.5-10mm); at Shorehill Down, Kemsing, TQ 5473 5929, on 23 May (corollas up to 8mm); at Whiteleaf Down, Kemsing, TQ 550 594, on 23 May (corollas 7.5-9mm); at Wrotham Water, TQ 6305 6065 (corollas 8-8.5mm); and at Birling Hill, TQ 6719 6241 (corollas 8-9mm).

Mentha pulegium [R] (Pennyroyal) in Kent

Pennyroyal was seen in three places across the county, raising questions as to how it gets around. On 29 June, GH noted it at Sevenoaks Wildlife Reserve, and this was followed up by GK on I July, with hundreds of plants seen around TQ 52096 56727 at a triangle formed by junction of paths from Tyler bird-hide and the anglers' car park access, flattish sandy/gravelly ground, then dry but evidently subject to winter inundation, the associated flora including ruderals, dry-tolerant and wet-favouring plants. The species was first seen at the reserve in 2002 on artificial islands in the lake where it had presumably arrived either with the spoil used for island construction, or via bird transmission. The expansion to the related 2020 site may be by birds again, or by anglers bringing seed from the lake margin.

***Mentha pulegium*, July 2020. Photo © Ken Chapman**

On 6 July, SB, following report by SS, found two patches of plants at Betteshanger, one at TR 34043 53225 consisting of about 100 flowering spikes towards the base of a colliery spoil slope and another at TR 34051 53215, a little lower down the slope and just outside the Sewage Works. The origin of these plants is unknown and bird introduction is credible; no seed sowing appears to have taken place in which Pennyroyal could have been a contaminant, but the colliery spoil substrate may offer good growing conditions comparable with the Sevenoaks sand/gravel.

***Mentha pulegium habitat*, July 2020. Photo © Ken Chapman**

The third find was by KC, on 24 July, a patch of plants in grassland at Monks Wall nature reserve, Sandwich, TR 32666 59319. The reserve was created from farmland in 2000 and any seeding then was applied to a neighbouring earth bank, and not the pasture below, where the Pennyroyal grows. It well fits the description in Stroh et al. (2019) of typical habitat being 'damp seasonally inundated grassland overlying silt or clay...often within or on the margins of shallow ephemeral pools…and poached areas created by grazing animals'. The pasture is subject to some winter flooding and provides wintering ground for large numbers of lapwing and duck which again raises the issue as regards whether seed may arrive with birds. Seed can survive ingestion by animals; it is small and so could be transported in mud; it is retained in the calyx long enough for calyx hairs to form a means of attachment as they apparently do on wool, fur and other materials (CABI, 2020); and whether these means of transmission may be applicable to birds as well as animals is an open question, although accepted as possible by Stroh et al. (2019).

Mentha pulegium is regarded as Critically Endangered in England for native populations, and there are accepted native populations in East Sussex, but it is not necessarily straightforward assessing status generally, given that natural introduction by birds independent of human activity, whenever it takes place, means that a plant may properly be called native.

Taraxacum spp. (Dandelions) in Kent

A consequence of coronavirus restrictions was that botanists looked more closely at local plants, and dandelions in April provided a source of variety. Sell & Murrell (2006) give 232 microspecies for Great Britain and Ireland. Perhaps 20-30 are supposed to be easily and readily learnt, but this is against a background of variation due to plasticity. There has been no general review of *Taraxacum* in Kent since Eric Philp and others gathered material for Philp (1982). So there is every possibility that Kent finds made now may not have other records in the last 45 years. In East Kent, the following were identified:

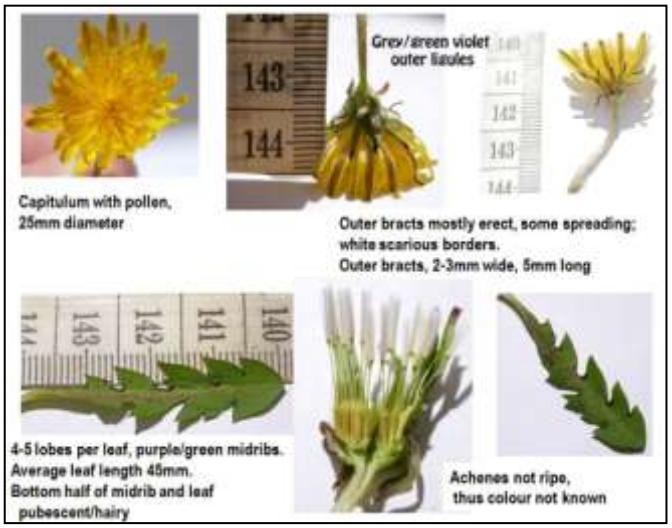
- *Taraxacum aequisectum* (Equal-lobed Dandelion) has been recorded only once before in Kent, in 1975, but it was found by LR on 23 April on a roadside bank, Bull Lane, Boughton, TR057 598 (named by AJR, BSBI referee).


***Taraxacum aequisectum*, 23 April 2020. Photos © Lliam Rooney**

- *Taraxacum cophocentrum* (Rounded-lobed Dandelion) is endemic to the British Isles and is supposed to be widespread and fairly common in much of Britain in waste places, hedgebanks, gardens and wood margins, often in towns. It has 16 records for Kent, all widespread but none later than the 1970s. To these, LR added on 28 April a record from a private garden in Dunkirk, TR 07638 59001.
- *Taraxacum ekmanii* (Ekman's Dandelion) was found by LR on 28 April growing from the base of the walls and by the driveway of Mount Ephraim Gardens, TR 06311 59957, identified by AJR, in East Kent last recorded in 1979. This is one of the commonest and widespread dandelions, having characteristic lettuce-coloured leaves.

In West Kent:

- *Taraxacum gelertii* (Gelert's Dandelion), a microspecies characterised by solid greyish-pink ligule stripes and erect, pruinose, indistinctly bordered exterior bracts, was recorded by DS and EW on 26 April in a horse paddock near Carter's Hill, Sevenoaks, TQ 5513 5311 (confirmed by AJR, who remarked that 'Section Celtica species are unusual in the far south east'). It is over 40 years since this was last recorded in Kent.

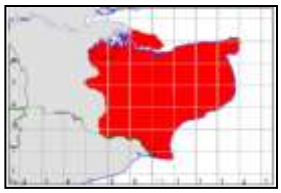


***Taraxacum gelertii*, 2020. © David Steere**

- *Taraxacum oxoniense* (Oxford Dandelion), a microspecies with grey-brown striped ligules, narrowly and deeply lobed leaves, a bright purple petiole and white-bordered dark green exterior bracts, is found especially on downland and sand-dunes. On 3 May GK and SK recorded it as scattered on a steep south-facing chalk grassland slope above Dunton Green, TQ 500 588. It is over 30 years since this was last recorded in Kent.

Anyone interested in recording *Taraxacum* should note that a new edition of the BSBI Dandelions Handbook is in the publication pipeline, in which identification should be made easier by colour photographs.

Plant records for East Kent (vice county 15)



***Alnus* x *elliptica* (**the hybrid between *A. glutinosa*, Alder, and *A. cordata*, Italian Alder) was unrecorded in Britain until 2006 and still has records only in Cambridgeshire, Cheshire and Nottinghamshire. On 19 September, however, AL collected material from Hothfield, TQ 9655 4610, which was confirmed by ACL as being this cross.

***Alnus x elliptica*, 2020. Photos © Alex Lockton**

The location is an extension to the west of the original KWT reserve, comprising wet river valley terrain, not heathland, and there are two tall 'hedges' of *A. cordata* running up to the edge of the reserve from which have arisen thousands of saplings and young trees. Within the reserve is a stream lined with *A. glutinosa* running out of Bog 4 along the western boundary. Where the two species meet, numerous hybrids were seen, although neither these nor *A. cordata* appeared to be extending into the heathland reserve. The leaves of *A. glutinosa* are often fairly rounded at the apex and have a rounded or truncate base; those of *A. cordata* are narrow, generally to a point, at the apex and usually have a cordate base; the hybrid shows a range of variation intermediate between the two. The extent to which cordate bases appear is, according to ACL, beyond what has been observed in Cambridgeshire plants, but this may reflect local genetic make-up and in any event at Hothfield it is clearly part of a variation spectrum. This is a **first record for East Kent, vc15**, and for the county as a whole.

Amaranthus bouchonii (Indehiscent Amaranth), a species likely to have evolved in Europe from an American taxon, was noted by JL on 25 September in a harvested barley field, seemingly the fourth East Kent record.

***Apera interrupta*, 6 June 2020.**
Photos © Sue Buckingham

Apera interrupta (Dense Silky-bent) is a South European grass of dry sandy ground, first recorded in the wild in Britain in 1848 and now well naturalised in East Anglia, but local and scattered elsewhere. It was found by SB – a **first record for East Kent, vc15**, and for the

county as a whole – on 1 June on the sharp-draining, nutrient-poor colliery shale at Betteshanger, TR3388 5315, where there were hundreds of plants spread over an area of about 3m x 2m. Open terrain is necessary for development of this annual; in Breckland, it can grow within a range of 20-60% bare ground (Trist, 1979). The average height of the plants was just 14cm and associated species included *Aira praecox* (Early Hair-grass), *Blackstonia perfoliata* (Yellow-wort), *Cerastium glomeratum* (Sticky Mouse-ear), *Epilobium brachycarpum* (Panicled Willowherb), *Galium parisiense* [R] (Wall Bedstraw), *Lotus corniculatus* (Common Bird's-foot-trefoil), *Plantago coronopus* (Buck's-horn Plantain) and *Poa compressa* (Flattened Meadow-grass). The presence of *G. parisiense* [R], Vulnerable to the risk of extinction, and the very uncommon but spreading *E. brachycarpum* (an American species which has gradually been working up from southern Europe) reflect the inhospitable substrate which delays colonisation by a more conventional flora. This interesting plant community, demonstrating re-wilding of an unusual character, is threatened by Quinn Estates' proposed Betteshanger Grove residential/commercial/retail development.

Atriplex micrantha (Twoscale Saltbush), previously reported as a Continental invader via the M20, was noted by GK on 28 September at the motorway junction north of Maidstone, TQ 752 584, lining the NE side of the slip road from the A229 roundabout onto the M20 westbound, until the point of entry onto the motorway. Our West Kent records appear to have been lost through the reconstruction of that section of the M20 with a concrete barrier substituted for the central reservation.

Carex* x *turfosa, the hybrid between *C. elata* [R] (Tufted-sedge) and *C. nigra* [R] (Common Sedge), has a scattering of records in the British Isles, mostly in Ireland, and none south of the Thames, until now. On 14 June, SL found it growing in a small natural pit formed in the shingle at Dungeness, TR 08071807, together with, but more abundant than, *C. nigra*. Both sedges were to some extent forming tussocks and tufts, perhaps a reaction to widely fluctuating water levels in the pit, but were also creeping. There were good quantities of stomata on both sides of the leaves, whereas *C. nigra* has them on the upper surface with only occasionally a few on the lower surface. The lowest bract of *C. nigra* more or less equals the inflorescence; that of *C. elata* is much shorter. Those of the Dungeness hybrid were highly variable, from short to exceeding the inflorescence. It was further distinguishable from *C. nigra* by part of the basal sheath being fibrillose. Whilst *C. elata* was not observed as growing in the same pit, it is present elsewhere in the Dungeness pits within 700m or so. The hybrid was confirmed by MRP (BSBI referee).

(Left) Inflorescences compared: *Carex x turfosa*, with fat spikes; *Carex nigra*, with thin ones. 14 June 2020. Photo © Stephen Lemon

(Right) *Carex x turfosa*, 14 June 2020. Photo © Stephen Lemon

It is the last to be found of the three *C. nigra* group (Sect. *Phacocystis*) hybrids (*C. elata* x *acuta*; *C. nigra* x *acuta*; *C. elata* x *nigra*) which have parents in Kent: all these have been found since 2015 for the first time, plus *C. acuta* x *acutiformis*, which has one parent outside the *C. nigra* group. *C.* x *turfosa* is a **first record for East Kent, vc15**, and for the county as a whole.

Carpobrotus edulis var. ***rubescens*** was a determination by CP (BSBI referee) from photographs of pink-flowered plants at Folkestone. These had been observed before, including by DS as part of the BSBI New Year plant hunt (and hence in flower on 1 January) and again on 19 June, and were recorded by SB on 24 July as a spreading patch 2m x 1m at TR 22168 35317 and a second smaller one close by, TR 22155 35312, at the top of the sandy beach and in the shelter of concrete promenade, both believed to have originated from cultivated material in the gardens above. It is noted here as a **first published record of this variant of Hottentot-fig in East Kent, vc15**; although earlier records of the species may well have been of this. As well as the colour difference from yellow-flowered var. *edulis* (which can, however, develop a pink tinge as the flowers go over), var. *rubescens* has a smaller flower on average (45-75mm diameter, as against 40-90mm), and vegetatively does not seem to reach the size to which var. *edulis* can grow (Preston, 1988). Var. *rubescens* is also distinguishable from another pink-flowered variant, var. *chrysophthalmus*, by not having a yellow ring at the base of the petals.

***Carpobrotus edulis* var. *rubescens*, 19 June 2020. Photo © David Steere**

Chenopodium vulvaria [R] (Stinking Goosefoot) is an Endangered species, in Kent generally in disturbed coastal areas, of which a new one was found by DC on 5 July, three flowering plants in a gateway entrance next to the railway at Neatscourt Marshes, Sheppey, TQ 916 701.

***Crocosmia* 'Lucifer'** is a striking and well-known Montbresia cultivar, tall with intense red flowers, given in BSBI listings as *C. masoniorum* 'Lucifer' which looks to be an approximate naming. It is a hortal hybrid which various sources give as *C. masoniorum x paniculata* or *C. paniculata* x (*C. aurea* x *C. pottsii*). The botanical (as distinct from horticultural) naming complications, as well as the absence of the taxon from the MapMate species dictionary, may have inhibited recording, but DC has noted on 5 July two magnificent clumps 100 yards apart on the clay cliffs at Minster (Sheppey), TQ 957 735. It can be grown from seed, but spread is usually by corms. This appears to be the **first published record for East Kent, vc15.**

***Crocosmia* 'Lucifer', 5 July 2020. Photo © Danny Chesterman**

Dipsacus pilosus [R] (Small Teasel) continues to pop up; we are finding much more than given in Philp (1982) and Philp (2010). On 27 August SB discovered a new site at Potters Corner Wood, a roadside plant in Godington Lane at TR 99005 44412, with two more plants a few metres away in the next monad. DT also recorded on 3 December some very large, dense stands at a private wood, Colyerhill Wood, Wye, TR 0769 4643, on an east-facing slope under ash, maple, hazel and spindle with a ground flora of *Allium ursinum* (Ramsons). The keeper mentioned other populations in the same wood where rides and glades had been opened up and created over recent years, so the Teasel appears to

come and go according to opportunity; it may have been doing this since 1842 given the reference in Hanbury & Marshall (1899) to its presence near Wye.

Dittrichia graveolens (Stinking Fleabane) was a wool alien in Kent before 1960 but latterly has been spreading along the M20. It was recorded in an unexpected habitat on 2 September by SB, seen growing in a clear-felled and levelled area within Hoad's Wood, north east of Bethersden, TQ 94939 42770, where there were several plants together with *Senecio inaequidens* (Narrow-leaved Ragwort), *Calendula officinalis* (Pot Marigold) and other plants suggestive of imported soil.

Echium pininana (Giant Viper's-bugloss) found a surrogate for its native subtropical laurel forests in the former Folkestone Harbour railway line where, alongside Tram Road at TR 2335 3635, SB on 3 September saw two plants which must have been unplanted because fenced off from access.

Eleocharis uniglumis [R] (Slender Spike-rush) is unrecorded in Philp (2010) but investigation by SL from 2013 onwards has revealed that it still remains at Holborough, Dungeness and Ham/Hacklinge. The known distribution around this last area was extended by SL and SB on 28 June through the finding of this species in a mixed population with *Eleocharis palustris* (Common Spike-rush) north west of the Sandwich Bay estate at TR 35632 57605. This was in a winter-flooded meadow still damp and containing also *Carex disticha* (Brown Sedge), *Dactylorhiza praetermissa* (Southern Marsh-orchid) and *Oenanthe fistulosa* [R] (Tubular Water-dropwort). There are historic records in the Stour catchment, at Seasalter and at Shorne and Higham Marshes where there might still be a chance of re-finding.

***Fallopia dumetorum*, Trenleypark Wood, 17 September 2020. Photo © Sue Buckingham**

Fallopia dumetorum (Copse-bindweed), a species Vulnerable to the risk of extinction, was placed on the 'probably extinct' county list as last seen at some date between 1971 and 1980 (Philp, 1982). Astonishingly, in 2020 not only was it found at its last site, Potters Corner near Ashford, but also at two historic sites, where not seen since 1948 (Cuckoo Wood, Sandling) and 1875 (Trenleypark Wood). It has a reputation for appearing at intervals, when the coppicing cycle provides light for seed germination, but the Kent records suggest that the position is more complex, and that the plant moves in and out of woodland hedge margins as well.

At Potters Corner it was spotted by SB on 27 August, on the edge of Eyesend Plantation, TQ 99354 44530, where accessed from the A20. There was a single plant, so far as could be ascertained, scrambling through brambles, but none within the wood, where the chestnut had been coppiced in, or just before, 2016. Its relative, *Fallopia convolvulus* (Black-bindweed), was, however, present on the woodland tracks.

At Cuckoo Wood, Sandling, TQ7557 and TQ7667, *F. convolvulus* was found by GK on 1 September to be abundant in fresh chestnut coppice, scrambling up and behaving just as one would have expected *F. dumetorum* to have done. However, except for one uncertain sighting, which could not be localised later for recording purposes, *F. dumetorum* was not found in the wood, but it was present in the adjoining verge of Sandling Lane. The last previous sighting was in 1948, when recorded by CW, FR and RAG. This population is discussed further below.

***Fallopia dumetorum*, Trenleypark Wood, 17 September 2020.**
Photo © Sue Buckingham

On 17 September, SB located more *F. dumetorum* at the east end of Trenleypark Wood, where at least a hundred and probably many plants were found spread over an area of about 60 x

60m in chestnut coppice cut probably a year or so before. This is private woodland close to Stodmarsh Road and must be within a few metres of the site described in Hanbury & Marshall (1899) as 'Hedge at the east end of Trinley Wood, 1875, *F.M. Webb* sp.'. Presumably the species has been capable of appearing in the wood or at its borders, depending on the state of coppicing. At the eastern fringe of the colony, approaching the end of the wood, it was replaced by a carpet of *F. convolvulus*.

These three sites all have in common the presence of chestnut coppice on sand (Folkestone Formation at Potters Corner and Cuckoo Wood; Thanet Formation with some Lambeth Group overlay at Trenleypark Wood). All have had coppicing take place recently, but a direct relationship between this and the appearance of *F. dumetorum* appears demonstrated only at Trenleypark Wood; it is much more marginal at the other sites. It is unclear what may have triggered the appearance of the species at the three sites after so long, unless it is just the product of targeted searching. All three occurrences show that *F. convolvulus*, in being present in *F. dumetorum* habitats, is not just a plant of arable and waste places, but is a woodland and wood margin species as well.

The Cuckoo Wood site was particularly interesting as regards the relationship between the two species. It was, after finding by GK on 1 September, visited by DM and SB on 4 September and further examined by all on 28 September when, after thorough search, it was concluded that there were seven *Fallopia* plants present. These were: one *F. dumetorum* (the same as seen on 1 September); two *F. convolvulus*; and four intermediate plants, which appeared to correspond to the hybrid ***Fallopia* x *convolvuloides***, which is a **first record for East Kent, vc15,** and indeed has had no previous confirmed sightings in the British Isles.

***Fallopia x convolvuloides*: above showing variable perianth wings; below right showing nut (with *F. convolvulus* on left for comparison), 4 September 2020. Photos © Daphne Mills.**

The hybrid was described from Switzerland as *Polygonum convolvuloides* (Brügger, 1886) and there is a useful account by Schinninger & Ro á Nek, 2008, emphasising the variation in tepal wings as a key feature. Tepals are broadly winged in *F. dumetorum*; keeled or (var. *subalatum*) narrowly winged in *F. convolvulus*; and broad to virtually absent on the same plant in *F.* x *convolvuloides*. The Cuckoo Wood plants demonstrated this variation in tepal wings and also had nuts which possessed some shininess from *F. dumetorum*, but were too large for that species (a nut collected by DM was photographed to show some wrinkling, which was also a character mentioned in the Swiss description). However, the occurrence and persistence of a hybrid between such species faces considerable barriers, which would make it a rare event. *F. convolvulus* appears normally to be cleistogamous, but it has been reported that a minority of flowers in greenhouse-grown plants were observed to open. *F. dumetorum* seems similarly shy to open its flowers, although published observations have not been traced. Any hybridisation would be interploidal (*F. dumetorum* 2n=20; *F. convolvulus* 2n=40), which may put barriers in the way of producing viable hybrid seed. Nevertheless, the plants observed suggest that slightly less than usually cleistogamous parent plants have in the past occurred in this disturbed area, with hybridisation, and possibly even introgression having followed. Whilst the identification has received referee endorsement, more comprehension publication is being withheld for a possible chromosome count (for proof of hybridity) and further study of the site in 2021; botanists are therefore asked not to disturb it.

F. dumetorum has been transferred from the 'probably extinct' county list to the rare plant register, and a fuller account appears in the latter.

Fallopia convolvulus var. *subalatum* is a variant of Black-bindweed in which the perianths are keeled or narrowly winged. There are old records in Hanbury & Marshall (1899) and there was a sighting by SC and ML in 2016 near Tilmanstone. Two or three sprawling plants with conspicuously winged tepals were found by SB on 16 October in the corner of an arable field near Woodnesborough, TR 29130 55659.

Fumaria bastardii [R] (Tall Ramping-fumitory) has had a turn-round in fortunes since a gap in records between the 1950s and 2011, but with ten records since then and now two more new 10km square sightings. On 3 April, AW

recorded it in an alleyway between homes in Bridleway Lane, Park Farm, Ashford, TR 0058 3956; and on 3 May, SB noted plants on the roadside in Glen Road, Kingsdown, TR 373 485 growing against a low brick garden wall.


***Galactites tomentosa* 11 July 2020. Photos © Owen Leyshon**

Fumaria vaillantii [R] (Few-flowered Fumitory) is an Endangered species normally of arable margins, but on 23 August was seen by DS in recently disturbed ground at the side of a superstore at Ashford, TR 0409 4143. The seeds are supposed to be able to remain viable for long periods (claimed at over a century in Hertfordshire where beeches had blown over – James, 1989). The Ashford site looks to be rough field in 1990 aerial photographs, possibly arable in 1960.

Galactites tomentosa (Mediterranean or Purple Milk Thistle) is occasionally grown as a garden plant for its white veins, but fares better in a gravel drive than a plant border. Harsh dry Mediterranean conditions suit it best; it comes no further north in France than Charente-Maritime. It was a parched roadside grassy verge that provided equivalent habitat for six plants found by OL on 11 July at Lighthouse Road, St. Margaret's at Cliffe, TR 36236 44196 – a second record for East Kent, vc15.

Galium parisiense [R] (Wall Bedstraw) is by no means confined to walls and a visit by SB to Betteshanger Community Park on 26 May revealed a massive spread of plants on colliery shale near the old colliery building at TR 3386 5315 westwards into monad TR3352; but this understates the position revealed by a further visit on 1 June which showed that the spread of this plant is almost unbroken on barish areas of colliery shale throughout the entire area of the park. This is an extraordinary development, the largest colony known in the county, but the nutrient-poor substrate, with characteristics of being both very dry in summer and drainage-impeded in winter, results in very slow colonisation by the usual plant pioneers and so offers opportunities for species which are capable of coping with this and would otherwise be ousted by plant competitors.

Gnaphalium luteoalbum [R] (Jersey Cudweed) continues its spread across the county, a first record on Sheppey being made by GK and SK on 21 August, with 17 plants or patches seen on a sloping paved area above public gardens in Sheerness, TQ 9224 7502.

***Himantoglossum hircinum*, 24 June 2020. Photo © Steffan Walton**

Himantoglossum hircinum [R] (Lizard Orchid) has its largest British population at Sandwich Bay, so that if there is random morphological variation – and this orchid is fairly constant in its characters – then this would be the place to observe .it. On 24 June, SW found a plant here (TR 3657) lacking in anthocyanin pigment, so that instead of having greyish flowers with a long labellum variously mottled purplish brown, the flower spike was wholly green. This does not appear to be a named variant, and is at the extreme of a level of variation in which the species can show diminished anthocyanin presence. There have apparently been similar plants in Dorset and Leicestershire, as well as an

undocumented possible occurrence at Sandwich in the early 2000s; but it is evidently of considerable rarity. A fuller account is given in Johnson (2021).

Isolepis cernua [R] (Slender Club-rush) was first found in Kent in 2006, in field ditches at Worth Minnis. However, in 2019 the hydrology was affected by the construction of bird scrapes and the absence of early/mid-year grazing while the ground settled. SB found plentiful *I. cernua* at TR 3430 5573 on 3 July, but the remainder of the ditch, where plants had been seen before, was mostly choked up with *Juncus subnodulosus* [R] (Blunt-flowered Rush). The RSPB re-introduced cattle later (their poaching of wet ground provides appropriate conditions for *I. cernua*), and improvement of the ditch line in sections is planned.

Lathyrus hirsutus [R] (Hairy Vetchling) was recently admitted to the rare plant register on the basis that its status nationally had been reviewed and in places could be regarded as behaving as a native, although possibly arriving as a seed contaminant during the High Middle Ages when legumes began to be more extensively grown, particularly on reclaimed marshland (Rippon *et al*., 2014, cited by Rumsey, 2019). On 17 July, DC recorded large patches along 100 yards of old sea wall on the eastern and northern side of the Stour north west of Sandwich, TR 324 588. There are 1980s records nearer Richborough, but no others for hectad TQ35, and the present record falls short of providing evidence for ancient continuity, although Monks' Wall (part of reclamation works, c. 13th century) is in the vicinity.

***Lythrum hyssopifolia*, 2 June 2020. Photo © Sue Buckingham**

Lythrum hyssopifolia [R] (Grass-poly), has had only one Kent site in the last fifty years, but a further one was discovered by SB on 2 June at Betteshanger, TR 33770 53089. At least 500 small plants were noted as spread over an area of 3m x 3m of bare colliery shale, mostly in a depression made by vehicle tyres and in an area which had obviously been flooded during the previous (very wet) winter season. A winter-wet habitat, drying out to permit germination, is required by Grass-poly and this seems to imply a fairly exacting habitat in relation to the colliery shale substrate which otherwise might be expected to drain more freely; it may be that a level of compaction is required. It is clear that 'the ecological requirements of *L. hyssopifolia* are specialised, and it relies for its continued occurrence on the flooding and disturbance of its sites' (Preston, 1999), although here it is likely that the barrenness of the habitat acts as proxy for disturbance in keeping the terrain open. But our knowledge has limits and it is telling that the standard account of the species (Callaghan, 1998) says that 'field data are lacking, in particular regarding conditions for successful establishment of seedlings'. Associated species at Betteshanger included *Epilobium tetragonum* (Square-stalked Willowherb), *Ranunculus parviflorus* [R] (Small-flowered Buttercup) and *Trifolium ornithopodioides* (Bird's-foot Clover). *Lythrum hyssopifolia* is designated an Endangered species in Great Britain, i.e. facing a very high risk of extinction in the wild. It is even more endangered here, in consequence of the Quinn Estates development proposals mentioned above in relation to *Apera interrupta*, which would also destroy this colony.

Oenanthe pimpinelloides (Corky-fruited Water-dropwort) is relatively uncommon in East Kent, not having experienced the spread around metropolitan grasslands which has taken place in north west Kent, so that it is of interest that MA in August found at least four plants along a chalk slope north of Hollingbourne, TQ 840 568, a new 10km square record.

Ophrys apifera var. *chlorantha,* the Bee Orchid variant with a greenish-yellow lip, was seen twice: first, on 1 June by SB, a few plants flowering by the roundabout of Betteshanger Community Park, TR3353; and secondly on 7 June by DS north west of Lympne, TR 115 359 (originally found there by LC in both 2019 and 2020).

Orobanche minor var. ***pseudoamethystea*** has been newly described by Thorogood & Rumsey (2020) from a type specimen collected on 25 June from sparsely vegetated shingle adjacent to Prince's Golf Links, TR 35544 60008, parasitic on *Eryngium maritimum* [R] (Sea-holly). The Kent populations in this area have caused confusion in the past

and because of superficial similarities to *Orobanche amethystea* were recorded in Philp (1982) as that species. In Philp (2010), however, they are treated as part of *Orobanche minor.* Whilst this treatment (or as *O. minor* subsp. *minor*) remains appropriate, they are considered sufficiently distinct in terms of morphology and ecology – growing on coastal dunes and shingle, parasitic on various halophytes in addition to *E. maritimum*, e.g. *Calystegia soldanella* [R] (Sea Bindweed), *Crithmum maritimum* (Rock Samphire), *Honckenya peploides* (Sea Sandwort) and *Ononis repens* (Common Restharrow) – to be given separate varietal status. The spikes are often long, dense and many-flowered, with the stem base being conspicuously swollen; the corolla is large (>15mm), purplish with a flattish dorsal line, geniculate at the tip, and with a bi-lobed upper lip. This is a **first record for East Kent, vc15,** under this name; but of course the plants are well known.

***Orobanche minor* var. *pseudoamythystea* at Sandwich, 6 June 2015. Photo © David Steere.**

Orobanche minor var***. heliophila*** has been newly described by Thorogood & Rumsey (2020) from a type specimen collected on 25 June from flower beds bordering the A2 and seafront promenade, close to the exit from the ferry terminal at Dover, TR 32657 41468, and parasitic on *Brachyglottis* x *jubar* (Shrub Ragwort). It appears that this taxon is ecologically and (to a degree) morphologically distinct and, although it is occasionally parasitic on other shrubs (e.g. *Veronica* spp.), it grows primarily on *B.* x *jubar.* The latter is a relatively recent arrival to cultivation in the British Isles from New Zealand, not earlier than 1910, and although *Orobanche minor* has been known in New Zealand as an alien at least back to 1870 (New Zealand Plant Conservation Network), its adaptation to *B.* x *jubar* must be recent, in evolutionary terms. It is distinct from other *O. minor* variants by virtue of its host plant; by being often robust and clumped (possibly through parasitising shrubs rather than herbaceous plants); by the filaments being white-hairy below; and by the corolla being basally white, conspicuously flushed and veined with purple towards the upper half or third. This variant is to be distinguished from *O. minor* var. *compositarum* which has conspicuously sub-erect flowers, especially in fruit (although var. *heliophila* may have sub-erect fruit as well); has more slender flowers which are pale and subglabrous rather than glandular-pubescent; and it parasitises *Crepis i*n particular. This is a **first published record for East Kent, vc15,** under this name; but see below.

[*Orobanche minor* var. *compositarum* mentioned in Kent Botany 2018 as found on *B.* x *jubar* at Broadstairs and New Romney must now be taken as assigned to var. *heliophila*.]

***Orobanche minor* var. *heliophila* on *Brachyglottis* x *jubar* at Broadstairs, 21 June 2018. Photo © Sue Buckingham**

Orobanche minor and *O. picridis* [R]. Thorogood & Rumsey (2020) also address the issue of East Kent plants which have long been encountered as intermediate between these species, illustrating a plant growing at St Margaret's Bay as well as a comparable artificial hybrid. DNA sequence data, however, have apparently not provided conclusive evidence of hybridisation in natural populations.

Oxybasis glauca [R] (*Chenopodium glaucum*, Oak-leaved Goosefoot) was found by SB and RL on 6 September, a few plants at TQ 86841 31588 on disturbed ground within the area of the old crayfish lagoons between Tenterden and

Rolvenden Layne. While this is a first record for TQ83 and more inland than most of our recent records, there is historic coastal influence from when the tidal River Rother used to run north of Oxney and flood the Upper Levels, including Maytham Level.

Pastinaca sativa subsp. *urens* (Eastern Parsnip) has been reported in Kent Botany 2018 and 2019 as beginning to be encountered along roads associated with the M20. It is now apparent that it has already arrived along most of the East Kent M20, primarily on the central reservation, brought in with traffic from the Continent. The difficulty with presenting a complete picture of this is obvious, since recording has either to be undertaken from bridges or by car. At present, we have only sample records added in 2020 by GK (from east to west) at TR0044, TQ9944, TQ9747, TQ8453, TQ8255, TQ8254, but it is apparent that between Folkestone and Maidstone there are miles of plants, often continuous, along the central reservation, particularly noticeable in September when the tall, gaunt, grey-brown, widely-branched stems are fully developed. Plants were also recorded on 5 September by GK on the central reservation of the A2070 at TR0340; this provides a link between the M20 and plants found by DC in 2019 on a nearby (TR0240) access to a lorry park.

***Paulownia tomentosa*, 2 August 2020.**
Photo © Owen Leyshon

Paulownia tomentosa **(Foxglove-tree**) is of Chinese origin, but widely naturalised, even to weed status, although in Britain its appearances are largely in an urban context, presumably not just because of the need for proximity of a planted parent, but also because of its ability to germinate and grow in pavement cracks or similar. This ability is well demonstrated by OL's find on 2 August of a seedling sprouting out of the junction of the kerb and road surface at the roundabout serving Betteshanger Road and Colliers Way, TR 33898 53188. This is a **first record for East Kent, vc15**. It was followed rapidly by a second, with DC's discovery on 4 October of a young tree, 8ft tall, bursting up through paving slabs in the small car park / loading area behind M&Co, off Bank Street, at Faversham, TR 014 612.

Persicaria hydropiper var. ***densiflora*** is a variety of Water-pepper which does not seem to have been reported in Kent until now. A find by SB and RL on 6 September was determined as this by JRA, BSBI referee and the co-author of an account of the variant (Sell & Akeroyd, 1988) in which it is distinguished from var. *hydropiper* by being taller, more branched and straggly and by having broader, non-wavy leaves and much denser inflorescences. The relatively few British occurrences listed in that account include one by E.S. Marshall (co-author of the *Flora of Kent*, 1899) but from Scotland, not Kent. That list was extended by Akeroyd (2013), in which he suggested that the possibility of var. *densiflora* being of hybrid origin should not be entirely discounted. That is interesting, as the present finders selected the plant as being possibly hybrid. It was a single plant by the old crayfish lagoons between Tenterden and Rolvenden Layne, TQ86831 31235, standing out from abundant *P. hydropiper* var *hydropiper* due to its much more robust form, broader leaves and more upright and dense-flowered inflorescence. This is a **first record for the variant from East Kent, vc15**, and the county as a whole.

***Persicaria hydropiper* var. *densiflora*, 6 September 2020. Photo © Richard Lansdown**

Persicaria mitis (Tasteless Water-pepper) is a species Vulnerable to the risk of extinction in England which had been assigned to the Kent 'probably extinct' list in the absence of any records since 1955. On 10 September 2020, however, a few plants were found by SB on mud in a small, disturbed area of cattle pasture in the Deerson Valley, TR 23659 60293, in the Little Stour catchment west of Preston village. The plants overall resembled slender *Persicaria maculosa* (Redshank), but with unblotched leaves and a few glands on the perianth segments. The inflorescence was somewhat interrupted and bore bright pink flowers. Identity was confirmed by JRA (BSBI referee). *P. mitis* is an annual, reliant on muddy sites where water levels drop in summer and preferably with some disturbance, e.g. by livestock, so this is a species worth looking out for in appropriate habitat. It has been transferred to the rare plant register and fuller details may be found in a new species account.

. ***Persicaria mitis*, 10 September 2020. Photo © Sue Buckingham**

Phlomis russeliana (Turkish Sage) is increasingly cultivated as an architectural plant with tall, whorled flower spikes and it occasionally escapes, but **the first record as such in East Kent, vc15,** was made by JA on 17 May at the roadside of Cockering Lane, Thanington, TR 1305 5614, where it was self-sown under a roadside hedge from a garden about 70m away.

***Phlomis russeliana*, 17 May 2020. Photo © Jan Armishaw**

Phytolacca acinosa (Indian Pokeweed) has a native distribution beyond India, reaching China. With us it is a garden plant, although not frequently grown and hence not escaping often. However, OL made two sightings, the first being of a large plant sprouting out of a pavement edge against a derelict housing plot at Church Road, New Romney, TR 06633 24874, on 6 June; it is not otherwise recorded from south east Kent. The second sighting was on 2 August of a plant sprouting from the base of a wooden fence by a cycle lane through a residential area near the River Stour at Sandwich, TR 33646 58049.

***Phytolacca acinosa*, 2 August 2020. Photo © Owen Leyshon**

Phytolacca polyandra (Chinese Pokeweed) has some overlap with the distribution of the last species, in that both

may be found in Guangxi, Guizhou, Sichuan and Yunnan. It may readily be distinguished from that species by having connate or fused carpels, so that the fruit is a smooth berry rather than a whorl of distinct drupelets. The **first record for East Kent, vc15**, was made by LS on 8 September as part of a survey of railway land in connection with works near Beacon Hill, Faversham, TQ 98811 61753, where at least four plants were growing near each other at the base of a wooded cutting. The land is operational railway without public access and is remote from any residential properties, so the origin of these plants is mysterious.

***Phytolacca polyandra*, 8 September 2020. Photos © Lindsay Stronge**

Platanthera* x *hybrida (the hybrid between *P. chlorantha*, [R] the Greater Butterfly-orchid and *P. bifolia*, [R] the Lesser Butterfly-orchid) has been confirmed; this represents **the first record for East Kent, vc15**. Plants reported by SC on 6 June as *Platanthera bifolia* in woodland near Martin Mill, TR3347 were visited by SB on 9 June and subsequently with AG, when both agreed that, although the plants mostly had the general appearance of *P. bifolia,* some flowers had clearly divergent pollinia which, with a spur length of 24mm (which is at the meeting point of the two species' measurement ranges) suggested a hybrid with *P. chlorantha*. Photographs were taken and sent to RB (BSBI referee) who confirmed presence of the hybrid and of both parents. These two very similar species are likely to represent early stages of evolution into distinct taxa (Bateman *et al*., 2012). Confirmation of hybridity is particularly welcome, given Continental research into intermediates which suggests that *P. bifolia* itself covers a significant range of variation which could cover some intermediates, but there are unresolved issues as regards attribution of specific status to other populations (Tyteca, D. & Esposito, F., 2018).

***Platanthera x* hybrida, 9 June 2020. Photo © Sue Buckingham**

Portulaca oleracea (Common Purslane) has not heard of its cultivation instructions of being supplied with moist, light, rich, well-drained soil in a sunny position, as it persists in being found (when it is, which is not often) on pavements. Consistently, OL noted it on 6 August as a large patch on the pavement and by a bench in the High Street, Lydd, TR 03802 20528; and on 26

September as a small patch at the base of a wall/pavement on the junction between Shorncliffe Road and Hook Close, Cheriton, Folkestone, TR 20710 36373.

Potamogeton acutifolius [R] (Sharp-leaved Pondweed) is an Endangered plant in England which in Kent is found in ditches across land which has been reclaimed from coastal or estuarial saltmarsh, or otherwise flooded and subject to tidal influence. We have had relatively recent records from Stodmarsh and the Dowells, but some updating was due for the Upper Levels of the Rother catchment, and this was provided by RL on 6 September. From the Maytham Levels near the old crayfish lagoons he recorded it at TQ 86870 31321, in a ditch running alongside the railway line from TQ 86885 31950; and at Smallhythe, with SB, he noted it in ditches at TQ 89250 29518, TQ 89274 29402 and TQ 89276 29390, altogether no more than ten plants but with abundant turions as well as some ripe seed.

Potamogeton obtusifolius [R] (Blunt-leaved Pondweed) was also found by RL at the Maytham Levels as with *P. acutifolius* above, in a ditch running alongside railway line south from TQ 86885 31950. It has been the source of puzzlement for some time why we are finding so little of this pondweed in comparison with neighbouring counties and our own pre-1980 records.

Rosa x *toddiae*, the cross between *R. canina* (Dog-rose) and *Rosa micrantha* (Small-flowered Sweet-briar) was recorded by GK on 29 June on a downs slope north of Thurnham. Much *R. micrantha* was present, but this plant was similar to *R. canina*, but with a few apple-scented glands, and *R. canina* s.s. seemed a more likely parent than the other *canina* segregates. Now that *R. squarrosa* (Glandular Dog-rose) and *R. corymbifera* (Hairy Dog-rose) have been split off from *R. canina*, it has become much harder to pin down the identity of rose hybrids, especially if more than one of these *R. canina* splits is in the vicinity, not helped by the absence of these 'splits' from recording software dictionaries so that records cannot be entered.

Rubus phoenicolasius (Japanese Wineberry) was found by AL on 10 July to be well established in scrubby woodland on the downs slopes south east of Wye, TR076 456, only the second East Kent record.

Rumex x *dimidiatus* (the hybrid between *R. crispus*, Curled Dock and x *R. cristatus*, Greek Dock) and *Rume*x x *lousley*i (the hybrid between *R. cristatus* x and *R. obtusifolius*, Broad-leaved Dock) were both found by GK on 29 June at the same site, with parents. They were growing at the end of Castle Lane at the top of Detling Hill, TQ 8096 5881, closed where it would otherwise have met the A249 with imported soil in which the alien *R. cristatus* was presumably introduced. Both crosses showed some of the size, vigour and leathery leaves of *R. cristatus*, but with reduced seed set. The *R. crispus* cross had narrow, crisped leaves and large entire tepals; the *R. obtusifolius* cross had tepals fairly similar to those of *R. cristatus* but more strongly toothed, and the leaves were intermediate in shape and texture with a scattering of papillae on the underside leaf midrib, from *R. obtusifolius*.

Rumex x schreberi, the cross between *R. hydrolapathum* (Water Dock) and *R. crispus* (Curled Dock), was seen by SB and RL on 6 September alongside a ditch in the low-lying land south of Smallhythe, TQ 89251 29545. This is only the second East Kent site.

Salicornia emerici [R] (Shiny Glasswort) was unrecorded in Kent for some decades until a plant was spotted in the course of a KBRG meeting at Oare in 2011. Now its position in the Kent flora appears more established, in view of the discovery of two colonies alongside the Swale. The first was on 11 September, when LR and CW found about 20 plants over a 20m stretch of saltmarsh against a shingle bank at Castle Coote, TR 03428 64741. At first sight, the plants resembled diminutive *Salicornia dolichostachya* (Long-spiked Glasswort), but purple-coloured around the flowers and with lower fertile segments fitting *S. emerici*. Identity was confirmed by FJR, who viewed the colony on 23 October with LR and CW. Then on 25 October, LR found a small colony on a higher, drier part of the saltmarsh near a saline pool north of Uplees Marshes, TR 00228 65510. Plants were growing in a mixed population of diminutive *S. ramosissima* (Purple Glasswort) and *S. europaea* (Common Glasswort). From a distance they resembled a more slender form of *S. ramosissima*, being of a similar colour, with extra long terminal spikes, but closer inspection showed fertile segments and cymes in keeping with the tetraploid *procumbens* group. Later measurements showed lower fertile segments were within the range of *S. emerici*. Both colonies, especially the Castle Coote one, showed characteristics which suggest some affinity with Continental occurrences, and the descriptions in Stace (2019) do not recognize the full range of potential variations. Thus the terminal spikes can be

longer than the 12-40mm measurement admitted by Stace (2019) and the colour had developed to a much stronger red than Stace's 'becoming light brownish-purple to brownish-orange with diffuse red tinge'. Intense reddening is a characteristic of Mediterranean populations, perhaps due to higher ultraviolet levels, and it may be that local conditions permit some approach towards this; however, LR considers that observations are not consistent with this being the only cause.

***Salicornia emerici*, (left) 27 October 2020, Uplees Marshes; (right) 23 October 2020, Castle Coote. Photos © Lliam Rooney.**

Scandix pecten-veneris [R] (Shepherd's-needle) is a species Endangered in England as a result of the decline in classic arable weeds, and was recorded by SC and ML on 14 March at Great Everden, near South Alkham, TR 23520 42028, on clay-with-flints. There was a large patch c.5 x 0.5m along a roadside where the field had been ploughed to the road edge; plenty of flowers were present, and a single plant a few metres away had mature and immature seedcases (the 'needles' of Shepherd's-needle), including some that had already opened early in the year. It has not been recorded in this 10km square for some 40 years.

Serapias vomeracea Burm. F. (Briq.) (Long-lipped Tongue-orchid), a Mediterranean species, was discovered, for the first time growing wild in the British Isles, by DM on 23 May: a single plant on motorway-related land in East Kent. Fuller accounts of this remarkable find are given in the county rare plant register (Part Sa-Sera) and in Kitchener *et al*. (2021).

The means of arrival of this plant in Kent cannot be known for certain, but its location is such that planting is highly unlikely. The species is cultivated, and can be acquired commercially in the British Isles, but cultivation in the general area is not known. There is potential for wind-blown seed to have arrived from the Continent, and Kent is favourably placed for this. However, there is another strong possibility as regards the relevant vector, and that is vehicle-assisted dispersal. Most traffic from the Continent comes through Kent. In 2019, 2 million cars, over 73,000 coaches and nearly 2.4 million road haulage vehicles passed through the port of Dover – presumably half of these were in-coming (similarly as regards Eurotunnel, whose 2019 figures are for more than 2.6 million passenger vehicles and almost 1.6 million road haulage vehicles). Potential for seed dispersal via Continental road traffic is evidenced by recent records, published in Kent Botany, for species such as *Atriplex micrantha* (Twoscale Saltbush), *Dittrichia graveolens* (Stinking Fleabane) and *Pastinaca sativa* subsp. *urens* (Eastern Parsnip).

Observations on 1 June showed that the pollinia in at least the lower four flowers of the *S. vomeracea* plant had been removed from their column and stuck to the stigmatic cavity, with the ovaries beginning to swell in the lower three. By 13 June at least seven ovaries were swollen, so spontaneous seed-set appeared to have occurred. This was a surprise. *S. vomeracea* is highly self-compatible (as artificial pollination demonstrates); but its morphological structure generally (i.e. in some 97% of cases) prevents self-fertilisation without some form of intervention; natural fruit-set in open-pollinated populations has been recorded at 13.4% to 20.9% (Pellegrino *et al*., 2006).

The pollination strategy of this species is based on the sepals, petals and lateral lobes of the hypochile forming a small tube in which insects may rest or shelter, removing and transferring the pollinia in the process. This insect behaviour is described by Dafni *et al.* (1981) from observations in Israel of male solitary bees. Female solitary bees usually sleep in their own nest-holes, but males apparently may seek holes more widely for rest after their morning activity. *Serapias* flowers, through mimicry, offer what appear to be appropriate bee-refuges, with their dark colour. Such light as may penetrate through the reddish flowers is in the part of the spectrum invisible to bees and so will appear even darker to them. The sleeping behaviour was observed mostly in Israeli species of *Eucera*, but also *Andrena*, *Osmia* and *Tetralonia*. Pellegrino *et al.* (2005) have observed Italian *Eucera* and *Osmia* pollinating, as well as *Ceratina*. All these genera except *Tetralonia* are represented in the British Isles and Kent has, for example, 56 species of *Andrena* and nine of *Osmia*, of which several in both genera are common (Allen, 2009).

***Serapias vomeracea* in flower, May 2020; in fruit, July 2020. Photos © Daphne Mills**

Pollination of the Kent plant suggests that similar solitary bee behaviour may occur here, and the warm sunny weather at the time of flowering will have been conducive to bringing out bees. It is possible, however, that more generalist pollinators were also involved. Pellegrino *et al.* (2005) found that the main pollinators in the populations they examined were *Oedemeridae* spp. (False Blister Beetles, or Pollen-feeding Beetles) and *Lymexylidae* spp. (Timberworm Beetles), which also have British representatives. The former are more likely to be relevant as frequenters of flowers, with *Oedemera lurida* and *O. nobilis* commonly recorded in Kent (Laurence Clemons, pers. comm.).

So far as concerns the potential of *Serapias vomeracea* to develop here into a colony, seed set is encouraging, but the species is also generally regarded as capable of spreading vegetatively by the production of one to four new tubers on long stolons in years with favourable climatic conditions; ordinarily, a plant may be found with two tubers, one giving rise to the current year's growth, the other being a remnant from the previous growth season. The location is being maintained confidential to reduce the risk of damage to the plant and its immediate habitat (but it should be emphasised that random searches of this type of habitat could be dangerous to both searchers and motorists).

***Spartina maritima*, 26 October 2020. Photo © Lliam Rooney**

Spartina maritima (Small Cord-grass), an Endangered species, was listed as probably extinct in the county, last seen by Eric Philp at Harty Ferry, Sheppey in 1988. It was, however, re-found on 23 October in one of its traditional localities, Castle Coote by the Swale, TR 03447 64736, by FJR, LR and CW. It was growing in a relatively high, dry and flat area of saltmarsh in the *Puccinellia maritima* (Common Saltmarsh-grass) zone, containing a few shallow pools. *Spartina anglica* (Common Cord-grass) was also present, mostly around the pool margins. Other associated species were those to be expected in such a saltmarsh habitat, including *Salicornia ramosissima* (Purple Glasswort), *Salicornia disarticulata* (One-flowered Glasswort) and *Limonium vulgare* (Common Sea-lavender). This last species is reckoned (Gray, 1994) as being a constant companion of *S. maritima*, but of course this doesn't work the other way round! It may be that *Salicornia disarticulata* is a better indicator species for the presence of *S. maritima*, at least in its habitats along the Swale, and a start has been made in checking other possible locations. The *S. maritima* plants found were noticeable as being in tightly clustered spiky tufts with upright leaves, narrower than those of *S. anglica* in not exceeding 6mm across (those of *S. anglica* are 6-11mm across when flat). Ligules also differ between the species, with that of *S. anglica* being (1)1.4 to 3.2mm long and *S. maritima* 0.3 to 0.8mm; in this case, the ligules were so small as to be scarcely observable. The species is now being placed in the rare plant register list, and a species account with fuller details has been issued.

***Thymus serpyllum*, 4 November 2020. Photo © Lliam Rooney**

Thymus serpyllum (Breckland Thyme) is a native species with a distribution limited as its vernacular name suggests. It is widely available in horticulture, which makes it surprising that no escapes anywhere appear to be reported on the BSBI database. Nevertheless, one has been noted by LR, with SB, on 4 November at Dunkirk, TR 07877 58936, by a telegraph pole next to a garden gate, growing from a crack in the concrete. LR remarks that it may be a coincidence but the nursery around the corner along Courtenay Road has sold seed packets of the thyme.

There are older references to *T. serpyllum* in Kent, e.g. Hanbury & Marshall (1899), but that is because the name used to be used to cover the Wild Thyme of chalk grassland (now *T. drucei*, formerly *T. polytrichus* and *T. praecox*) as well. This is a **first record for East Kent, vc15**.

Viola odorata* var. *praecox (Sweet Violet) was first recorded in West Kent in 2018 (albeit that we have four more records in 2020). The **first records for East Kent, vc15**, followed on 21 November 2020, with sightings by GK and SK near West Hythe: on a shaded footpath parallel to Botolph's Bridge Road, TR1232, and in a couple of places under trees alongside the Royal Military Canal path west of West Hythe bridge, TR 123 342. In both cases, plants were already in flower (hence *praecox*, = early), the flowers as is usual being very deep purple and reluctant to open out fully. A further find, also flowering in November (but on an unrecorded day) was made by RH at Seaton (confirmed by GK): a patch of c. 1x1m was growing where shaded in summer.

***Zinnia elegans*, 6 August 2020. Photo © Lliam Rooney**

X *Dactylodenia heinzeliana*, the cross between *Dactylorhiza fuchsii* (Common Spotted-orchid) and *Gymnadenia conopsea* (Chalk Fragrant-orchid) was noted by DS on 21 June at Lydden Hill Roadside Nature Reserve, TR 2579 4569, where there was a hybrid swarm with several others dotted here and there, hybrid plants being vigorous and bigger than either of the parents, both of which were present.

Zinnia elegans (Youth-and-age) presented a straightforward find on 6 August for the recorder, LR, as it was growing in a pavement crack close by his house at Boughton Street, TR 06271 58995. Many cultivars of Zinnia have been bred, and this best resembled 'Purple Prince'. The vernacular name refers to the inflorescence head having the appearance of a young flower in an older one. This **is a first record for vc15, East Kent**.

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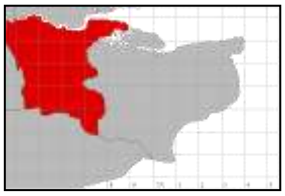
Plant records for West Kent (vice county 16)



Arum italicum x *maculatum* (the cross between ordinary and Italian Lords-and-Ladies) was noted by GK and SK on 21 March on a wooded bank by the footpath above Court Farm, Upper Halling, TQ 6894 6448. *A. maculatum* was present and the hortal form of *A. italicum* subsp. *italicum* with strong creamy-white leaf-veining (sometimes called cv. 'Pictum' or 'Marmoratum', incorrectly and also confusingly so, given that these are also species' names); the numerous hybrid plants showed weaker pale leaf-veining.

Carex elongata [R] (Elongated Sedge) is known to be less scarce than suggested by the single Kent record found in the period covered by Philp (2010); and SL and LCa on 24 May added a find of twelve tussocks in a line along a fallen crack willow trunk at the edge of a pit in wet woodland at Wanshurst Green, east of Marden, TQ 7624 4469.

Cephalanthera damasonium [R] (White Helleborine) seems to have had a good year, with DS reporting some 400-500 spikes in seed near Brands Hatch, TQ 580 647 to TQ 580 646 in heavy shade on 23 July, and (with the best year

since at least 2013) some 300 spikes in east and southern parts of Churchdown Wood, Longfield, TQ5968, on 14 May including spikes with up to 12 flowers/buds showing. On 19 May, GK and SK saw alongside Old Polhill, TQ 5052 5989 to TQ 5067 5976, thousands of plants on bare chalk ground in shade (mostly under hawthorn) on the banks of the M25 and an associated underpass. This section of motorway was opened in 1986, so the habitat has been maturing since then, with planted trees eventually providing shade (still looking very open on 1990 aerial photographs).

Coreopsis tinctoria (Garden Tickseed) was found by SA on 3 August, a single plant in the rough grassland of a verge in Jeskyn's Country Park, TQ 670 693, between a bridle path and Ashenbank Wood. There are wildflower seed mixes which include this species, presumably on the basis that it is a wildflower in America (albeit a garden annual here), and there have been some sowings at Jeskyn's Park (see *Glebionis segetum* (Corn Marigold) below). However, the *Coreopsis* was not accompanied by other seed mix plants, but with what were noted as thistles, clovers, knapweed, willowherbs, etc. On that basis, in the absence of indication of deliberate introduction, this is noted as a **first record for West Kent, vc16**.

***Coreopsis tinctoria*, 3 August 2020. Photo © Sheila Anderson**

Cotula coronopifolia (Buttonweed) seems to be gradually extending its range on the north Kent marshes, and on 23 July GK found its yellow buttons in a depression on Crayford Marshes, TQ5376, a new 10km square record.

Cyclamen repandum (Spring Sowbread) was reported by ME as a sighting on 24 March TQ713607, in flower alongside a path running parallel to Abbeymeads Lake between New Hythe and Snodland, far from any houses. As photographed, this shows some seedlings present.

***Cyclamen repandum*, 24 March 2020. Photo © Mike Easterbrook.**

Cynoglossum germanicum (Green Hound's-tongue) survives in Kent as a colony from seed introduced by Francis Rose in 1958 at Pilgrim's Way above Coldrum Long Barrow (in his words, 'In order to try and obtain some information on its powers of establishment, and on the possible reasons for its decrease at the present time, in Sept. 1958 I sowed seed of this plant for experimental purposes from Mickleham, Surrey, at two points on the sides of the Pilgrim's Way … between Wrotham and Ryarsh, in open ash-hazel-woodland on chalk (grid references 51/634607 and 51/656613), localities where the plant was certainly absent prior to sowing.'). There have not been records hitherto of material spread any distance from that site, but on 28 May GK encountered a single plant shaded at a woodland edge alongside a byway towards the top of the chalk escarpment west of Holly Hill, TQ 6654 6204. The seeds are capable of attaching to animals, but as the plant was found over 1km from the introduced site along the footpath network it is perhaps more likely that it was spread by a walker.

***Dryopteris cycadina*, 1 November 2020. Photo © Sarah Kitchener**

Dryopteris cycadina (Franch. & Sav.) C. Chr. (Shaggy Shield-fern) is a

hardy Asian species, sometimes sold here in error as *D. atrata*, which is a tender species with very different pinnae, although *atrata* (=clothed in black) well describes the scales which cover the stipe in both species. On 1 November, GK and SK noted a single plant in a damp area by a footpath adjoining Coolings Nursery, Knockholt, TQ 47818 61095. Other ferns in the vicinity were all native; it is assumed that a stray spore had spread from plants being sold behind the buildings and fences bounding the nursery; fern stocks have been kept within 30m. There is only a handful of records nationally, and this is **a first record for West Kent, vc16,** and for the county as a whole.

Elymus x obtusiusculus, the cross between *E. athericus* (Sea Couch) and *E. junceiformis* (Sand Couch) was seen by GK and SK on 11 October on the south east shore at Grain, TQ8975, with the parents; seeds were not developing fully and the rachis was not disarticulating, as nearby *E. junceiformis* was.

Epilobium brachycarpum (Panicled Willowherb) is a North American willowherb, gradually spreading through Europe, with records in Essex and Norwich; in Kent it has been found at Betteshanger and Yalding. A stray plant was recorded by GK on 10 July at Otford cemetery, TQ 53012 58545, where it was growing on a soil heap accompanied by otherwise ordinary weeds. Its appearance does not have an obvious explanation, unless seed was windblown from the recorder's garden, 4.7km away at Halstead, where the willowherb has persisted since Essex seedlings were grown for identification in 2010 before its British presence had been recognised.

***Epilobium* x *subhirsutum*, 21 September 2020.**
Photo © Sarah Kitchener

Epilobium hybrids found are not listed here in full, but the most interesting site was the damp ground edging the upper reaches of the River Darent in Squerryes Park, Westerham explored by GK and SK on 21 September where *E.* x *subhirsutum* (the cross between *E. hirsutum*, Great Willowherb and *E. parviflorum*, Hoary Willowherb) was present with the parents (TQ 4444 5242); and *E.* x *dacicum* (the cross between *E. obscurum*, Short-fruited Willowherb and *E. parviflorum*) at TQ 444 523. The latter was unusual in constituting a substantial and widespread population, probably more conspicuous as species willowherbs had finished growth and died back. Usually hybrids are found as odd individuals; in this case, ten samples were checked for confirmation of identity; one was unusually fertile and may have been a backcross.

Eryngium bourgatii (Mediterranean Sea-holly), reported in Kent Botany 2019, by DS from near Longfield has been found by him to be more extensive, with a further patch of plants flowering c.50m away, at TQ 5977 6958, noted on 17 June.

Euphorbia maculata (Spotted Spurge) continues to be found spreading in situations where resistance to trampling may be advantageous. MR found it on a pavement beside Okehampton Crescent, West Heath, TQ474770, on 12 July. At Kelchers Lane, Golden Green, TQ 6395 4816, on 20 July GK noted it in block paving and at the roadside of a residential frontage. Its occurrences – on street pavements, garden paving and drives – are compatible with import with ornamental shrubs.

Euphorbia stricta (Upright Spurge) has only one Kent record, prior to a colony being found by GK and SK on 7 November at Dibden Lane, Sevenoaks, TQ 5129 5398, with numerous plants on disturbed ground of a woodland margin, not near houses. They were noticeable for their red-flushed stems and the chunky cylindrical papillae on the capsules. Although it was late in the season and the plants were going over, they appeared likely to be the cultivar, 'Golden Foam'.

Euphrasia confusa [R] (Confused Eyebright) was recorded by MAS on 15 July at Henley Down, Luddesdown, TQ 664 665 in a survey for the Old Chalk New Downs project. Very few plants were noted, and *Euphrasia nemorosa* (Common Eyebright) was more frequent, with the hybrid considered also to be there. This site would merit a further

targeted review of the eyebrights; it may well be that we could be overlooking *E. confusa* in the expectation that it is confined in Kent to acid, heathy grassland, whereas in West Sussex it has been found in the short chalk turf of Cissbury Ring.

Glebionis segetum [R] (Corn Marigold) sightings always require some interpretation, given that records on (usually sandy) arable or former arable are far outnumbered by the products of wildflower seed sowing. RM recorded a plant on 10 September at TQ 663 694, where a stand had been seen the previous year. This was in Jeskyn's Country Park, which was farmland in 2005 but converted to a park/ community woodland opened in 2007. The site had been ploughed in Spring 2019 and sown with organic barley and some species favoured by Plantlife's Colour in the Margins project, but not (knowingly) *G. segetum*. The choice of site was partly based on avoidance of areas sown with arable plants by the Forestry Commission in setting up the park. So, in spite of every appearance of having been introduced here, there is a case for possible survival of seed from the original farmland, as with *Spergula arvensis* (Corn Spurrey), also present. The viability of *G. segetum* seeds is supposed to decline very rapidly, with a mean of over 30%, although a few seedlings were found to emerge after 20 years of being buried in sown grassland in an Oxfordshire experiment (Chancellor, 1986).

***Glebionis segetum*, 2019. Photo © Richard Moyse**

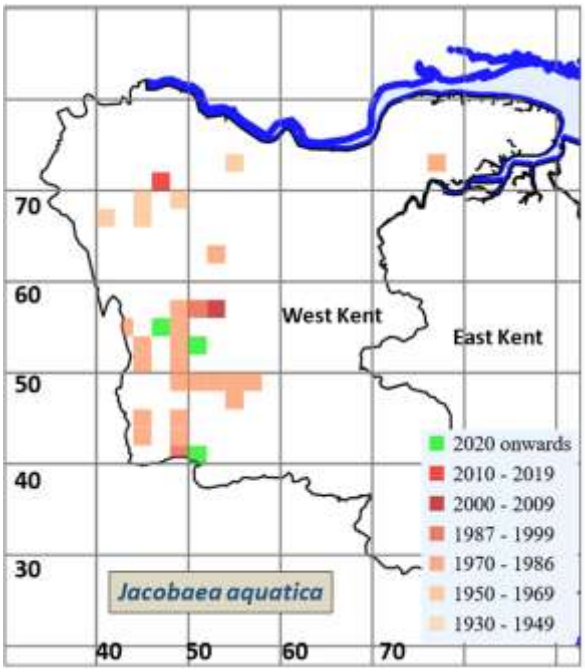
Hieracium lortetiae (Lortet's hawkweed) is not mentioned as having been part of the Kent Flora in any publications, until Shaw (2020), where the re-determination by DJMcC of material from the border of Hawks Wood, Chipstead collected in 1939 as *Hieracium strumosum* is noted as the sole record for south east England (and not recorded since). Back Lane, by Hawks Wood, TQ4953, still has *Hieracium* spp. present, whose flowering may be affected by light conditions derived from the condition of the adjoining woodland.

Inula conyzae (Ploughman's-spikenard) would not normally warrant comment, familiar as it is on the chalk, and occasionally on shingle or dunes. However, JC's record of 20 August at the Blackheath Halls, TQ 396 758, places it in an unfamiliar urban context, a single plant against a close-boarded fence bounding an alley behind the Halls' car park, in company with more-to-be expected *Erigeron sumatrensis* (Guernsey Fleabane) and *Erigeron floribundus* (Bilbao's Fleabane). It is a reminder that, notwithstanding all the known patterns of plant distribution, not everything conforms!

Ipomoea purpurea (Common Morning-glory) was noted by DS and EW on 16 October as a vigorous flowering plant growing in pavement crack against wall of Hartley Post Office car park, TQ 6046 6757, through block paving. Although unplanted having regard to its location, and presumably a garden escape, there were no gardens or containers in the immediate vicinity to provide any obvious seed source.

***Ipomoea purpurea*, 16 October 2020. Photo © David Steere**

Jacobaea aquatica [R] (*Senecio aquaticus*, Marsh Ragwort) appears to have undergone a very steep decline in Kent since the 1970s, down to four tetrads in Philp (2010), viz. three in West Kent, one in East. Distribution trends are shown in the accompanying map, with records given as tetrads. Searches were made in various West Kent locations, with limited success. SL found it still present at Tubs Hole, south of Penshurst, TQ 5168 4154, where seen by JP in 1989 (not a Philp (2010) record). There were only two plants on flushed ground in a small open area, once part of larger open field, on the south facing slope above a stream, now almost completely scrubbed over. However, two new locations were discovered. One was near the site of Whitley Mill, Sevenoaks, TQ 5077 5308, where GK and SK recorded it on 1 June as scattered along the wet floor of a stream valley from its spring northwards for 50m, with some outlying plants further north. The other find was in a series of fields north of the River. Darent, and west of Church Road, Brasted. Unfortunately, these fields were adversely affected by herbicidal treatment in November 2019. It is understood that the intention was to clear *Juncus* spp. (Rushes) in order to improve grazing, but the result appeared to be the dominance of *Persicaria maculosa* (Redshank) and the banishment of *J. aquaticus* to untreated damp, generally marginal areas. Plants were found lightly scattered from the gate at TQ 46858 55177 to the ditch/hedge field boundary at TQ 46773 55155, with a focus around a north-south stream at TQ 4680 5517. This scatter continued in the next field to the west, both near the Darent and along the west side of the ditch/hedge boundary, the total in this field being 22 plants. Further west was a small untreated corner field, cut off by ditches, with single plants at TQ 46654 55138 and TQ 46612 55159. It seems surprising that these new records were found, although a large number of 1970-86 sites could not be relocated. The latter were recorded as tetrads, making it difficult to pinpoint their location and assess whether, for example, they have habitat change in common. Neither SL nor GK and SK found it at Cowden Pasture, a former site which is now scrubbing over.



Juncus ranarius [R] (Frog Rush) was reported in Kent Botany 2019 as found by RMB at Crossness Nature Reserve, having previously been considered probably extinct in the county. On 23 July, GK found more in very similar habitat at Crayford Marshes, TQ 53110 76991 (indeed, the habitat was recognised as likely to yield the rush before it was found). This grid reference was taken from the edge of a dry (but seasonally wet) irregular oval depression in brackish grazing marshes c.25 x 35m, encompassing horse-trampled and grazed, semi-bare cracked and crumbly ground. *J. ranarius* was frequent as individual tufts around the edges where the ground was slightly higher, but still otherwise only part vegetated. Some tufts had become detached, and some rooted plants which had fruited were commencing fresh green flowering growth as well. The capsules were very blunt; fruits were clustered together as is typical with this species and the seed surface was smooth. A small colony was also observed in the adjoining monad, at the edge of a heavily grazed dry depression, TQ 5311 7742. The plant had been recorded at Crayford Marshes before, by RoF in 1986. The original Crossness site was revisited by RMB in July 2020 and very few plants were found. As an annual it may be affected by the timing of spring draw-down of winter flooding and local variation of drainage.

***Juncus ranarius*, 23 July 2020. Photo © Geoffrey Kitchener**

Juncus x *surrejanus* (the hybrid between *J. acutiflorus*, Sharp-flowered Rush and *J. articulatus*, Jointed Rush) was the subject of second and third records for West Kent, vc16. On 21 September GK and SK found a stand in flushes by the upper reaches of the River Darent in Squerryes Park, Westerham, TQ 444 523. Plants were tall, erect and with capsules which, to the extent formed, were shaped like *J. acutiflorus*, but sterile, and leaf septa numbered 3-5 per 5cm (within the range of *J. articulatus*). On 7 October they found further plants at the North Avenue of Bedgebury Pinetum, TQ 732 334, on an acid grassland slope. Capsules were not properly formed, and did not project beyond the perianth segments.

Lactuca saligna [R] (Least Lettuce) was reported in Kent Botany 2018 as having been found by DS in a new location in a remote part of Allhallows Marshes, where there were at least 20 plants of this Endangered species. The colony was surveyed on 15 July 2020 by GK with a count of 346 plants, well over twice as many as were found on the Grain side of Yantlet Creek in 2013. It extended along some 700m of seawall with a few outlying plants about 250m away; 22 grid-references were taken for plants, individually or in cluster, and the largest concentration was of 175 plants at TQ 86260 76675 and westwards for 9m. The aspect of the seawall slopes (in this case mostly south or south-east) seems less relevant to the plant's distribution than their openness, maintained by cracking of the London Clay and often by cattle trampling as well.

Nothofagus obliqua (Roble) is a Chilean tree used for forestry and amongst the forestry plots at Bedgebury was noted as by far the best performer of any broadleaved tree and since 1953 yielding so much fertile seed that the floor was carpeted with seedlings, thousands of which were removed every few years (Mitchell & Westhall, 1972). That readiness to reproduce was demonstrated by a find by GK and SK on 23 September in the middle of Crockhamhill Common, TQ 4451 5159. This is a mixed woodland, and a few mature trees of *N. obliqua*, presumed originally planted, accounted for the presence of scores of saplings and hundreds of seedlings, competing with *Betula pubescens* (Downy Birch) over an area of which one side was at least 25m long. This is a **first record for West Kent, vc16**, and for the county as a whole.

***Nothofagus obliqua*, 23 September 2020. Photos © Geoffrey Kitchener**

Oenanthe lachenalii [R] (Parsley Water-dropwort) is Near Threatened in England, but not particularly scarce in the Kentish coastal marshlands, particularly Romney Marsh and around Sandwich. Its distribution becomes more attenuated along the Thames toward London, and the only colony in Greater London appears to be one found by GK on 23 July at Crayford Marshes, TQ 5317 7690, a dense and extensive population growing on a flattish grassy area just over 300m from the tidal River Darent.

Ononis spinosa [R] (Spiny Restharrow) is normally a plant of the Kent north and north east coasts, so it was a surprise when SD on 24 July found a patch alongside the vehicle access to the upper car park at Pembury Hospital, TQ 61430 41394. Whilst it could have arrived with a vehicle, it is likely that it came with a seed mix when the hospital was built 2008-11, so this needs to be borne in mind for finds where distribution is anomalous. *Ononis repens* (Common Restharrow). can have spines as well but has stems hairy all round, whereas this plant was clearly showing hairs only along one side.

Ophrys apifera Huds. var. *cambrensis* M.J. Clark is the name of the Bee Orchid variant from Ranscombe illustrated in Kent Botany 2019. The name was published by Clark (2014) and as well as having been found in Wales (hence *cambrensis*), the variant has also been found in Dorset (as DJ advises).

Orobanche hederae [R] (Ivy Broomrape) continues to extend within and beyond its known Kent range. On 11 January GK and SK spotted thirty-six spikes on *Hedera hibernica* (Atlantic Ivy) planted at the junction of Viking Way and Church Manorway, opposite Erith Oil Mills, TQ 50566 79291: a new monad, although the species is known in the general vicinity. On 6 June, DS came across eight spikes in a new location within Bluewater quarry itself on *Hedera helix* s.s. (Common Ivy) at TQ 5748 7390; the species has long been known on surrounding land. The broomrape has not, however, been known in the Keston area, and RG on 26 August discovered it growing on the west verge of Jackass Lane, south of the entrance to Larch Barn, TQ 40940 63983. When visited by GK in December, there were 210 spikes along some 28m of verge, growing against a fence with *Hedera* cultivars, primarily *H. colchica* 'Sulphur Heart' and *H. colchica* 'Dentata Variegata'. *H. algeriensis* (Algerian Ivy) appeared also present, but it was not clear if it was being parasitised. There were a few very weak broomrapes on *H. helix* s.s., so the cultivars appear to be more accommodating hosts than the wild ivy. Where the identity of the ivy host is recorded in Kent, then it is often *Hedera hibernica* which, although not necessarily noted as such, may be cv. '*Hibernica*'. The nearest site for *O. hederae* is at the other end of Jackass Lane, where also discovered by RG, in 2019, by a footpath at TQ 4153 6312; this is also on *Hedera helix* s.s and there is unlikely to be a connection between the two sites, given the extent of non-parasitised ivy growing between them.

***Orobanche hederae,* 26 August 2020. Photo © Richard Gowing**

Orobanche minor subsp. var. *flava*, the yellow, anthocyanin-deficient variant of the usual Common Broomrape, was mentioned in Kent Botany 2019 and, although this is a taxon given in Stace (2019), Thorogood & Rumsey (2020) consider that calling it a variety overstates its significance, and that it should be given lower ranking, at forma level. It is accordingly named *O. minor* f. *lutea*. Whatever the naming of the plant, DS had two more records (in addition to three made in East and West Kent, 2015-16): on 2 June from near Eynsford, TQ5464, growing on legumes; and on 23 May near Bean at TQ 5858 7274 and TQ 5854 7281, both parasitising *Trifolium* (Clover) species.

Osmunda regalis [R] (Royal Fern) was recorded by DC on 1 July as two small plants with fertile fronds at the edge of a woodland ride at Kilndown, TQ 697 353. It is some years since *Osmunda* was recorded unequivocally for the West Kent part of TQ63. It is of course abundant around nearby Scotney Castle lake (from which the spores for these plants presumably came and would have had to have found a habitat enabling rapid germination as they have very short-term viability), but the lake is in vc14 (East Sussex) for recording purposes, although part of the administrative county of Kent.

Pastinaca sativa subsp**. *urens*** (Eastern Parsnip) has been spreading along the M20 and related roads, imported with the passage of Continental traffic, and has now reached West Kent with the recording by GK on 19 September of plants along c.10m of the central reservation of the A228 Snodland bypass, TQ6997 6048. This is a **first record for West Kent, vc16.**

Pilosella flagellaris* subsp. *flagellaris (Spreading Mouse-ear-hawkweed) is a puzzling plant in some respects. Its close relative subsp. *bicapitata* is an endemic, present in three sites in the Shetlands. Subsp. *flagellaris* is a Central and East European taxon naturalised with concentrations in central Scotland and Nottinghamshire. Elsewhere its distribution is very scattered, but it is being increasingly recorded, on waste ground, verges and lawns. An interesting, and not untypical, example is given by Leslie (2019) where it was found on a Cambridge lawn in 1971 and by 2005 could be seen in the lawns of eight neighbouring residential properties as well. It has now been found by

RMB (conf. JPo), not only in his own back garden at Pollyhaugh, Eynsford, TQ5465 (where it was known as a single rosette since about 2015 at edge of a drain cover in permanent shade and in 2020 producing daughter rosettes on long stolons), but also (November 2020) on the drive of 2 Pollyhaugh, about 100m distant, which has the appearance of an older colony.

***Pilosella flagellaris* subsp. flagellaris (non-flowering patch), November 2020. Photo © Rodney Burton**

Whilst garden occurrences are sometimes supposed to have originated in cultivation (and the taxon was first cultivated in Britain in 1816, not long after it was formally described, as *Hieracium flagellare*, from Berlin Botanic Garden), it is not really garden-worthy and currently does not seem obtainable as a garden plant. Even *Pilosella officinarum* (Mouse-ear-hawkweed), which is fairly similar, although having only one flower-head per stem while *P. flagellaris* generally has more, is listed by the Royal Horticultural Society as having only one UK commercial supplier. The first wild find in Britain was by Professor J.H. Balfour and J. Sadler (*Journal of Botany* (1869) **7**: 337) on railway banks at Granton and has been supposed to have escaped from Edinburgh Botanical Gardens, 2.5km distant. Although the *New Atlas of the British & Irish Flora* (Preston *et al*., 2002) refers to the plants as sometimes grown in gardens, it is questionable how much evidence there is of deliberate growing; it may be an escape from cultivation more analagous to the botanical garden origins of *Senecio squalidus* (Oxford Ragwort).

Pleioblastus pygmaeus (Dwarf Bamboo) generally comes in horticulture with a health warning as regards its capacity to spread, and a patch was found on 29 December by GK and SK at Hills Lane, east of Shoreham, TQ 5577 6090, which appears likely to have been ejected from a garden some years ago, although no garden was near. Nomenclature is far from straightforward for these small running bamboos and this was taken to be var. *pygmaeus*. The plant usually sold at present is var. *distichus*, which has a more fan-like arrangement of leaves than this, which is **a first record for West Kent, vc16**.

***Pleioblastus pygmaeus*, 29 December 2020. Photo © Geoffrey Kitchener**

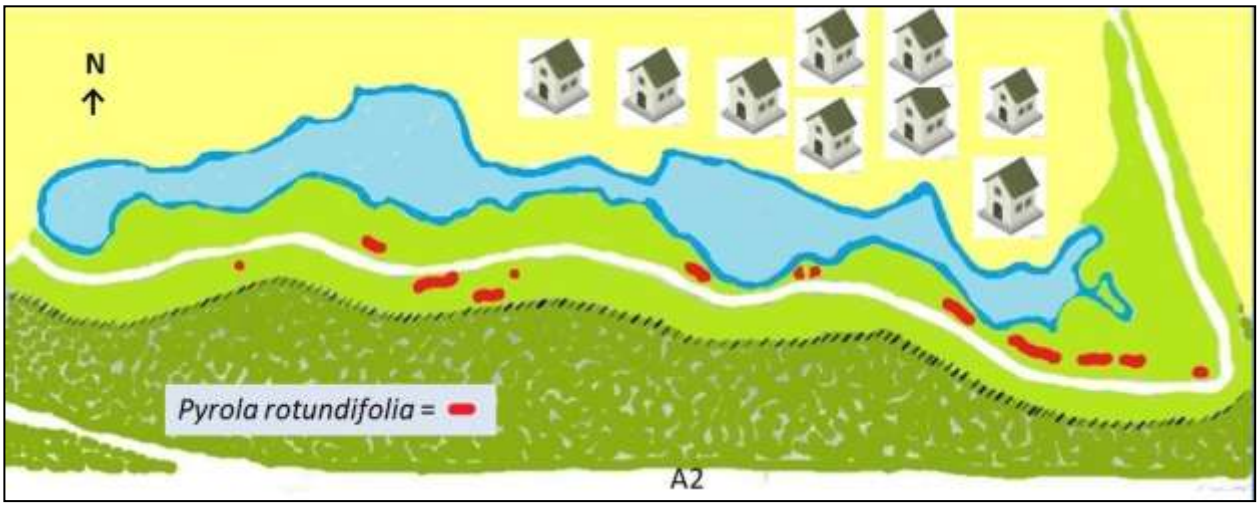
Polypodium cambricum [R] (Southern Polypody) is a fern with a liking for historic buildings but with only two Kent sites. GK and SK on 21 February discovered a further, secondary site at Penshurst Place, TQ 52767 43997, at some 150m from the main colony on the old brick wall separating the car park from the walled garden. The colony is a small one, on stonework by the disabled toilet in a courtyard on the north east side of the building complex. As usual, it was checked for the presence of paraphyses amongst the sporangia.

***Populus x generosa*, 16 October 2020. Photo © Geoffrey Kitchener**

Populus* x *generosa (Generous Poplar) is a hybrid between *P. deltoides* (Eastern Cottonwood) and *P. trichocarpa* (Western Balsam-poplar), bred in 1912 and formerly much planted for amenity purposes, albeit susceptible to disease and breakage. A young tree / sapling was recorded by GK on 16 October on damp reedy ground on the floor of the former Eastern Quarry which is being developed as the Ebbsfleet Garden City, TQ 605 728. Whilst there are various fenced plantings grouped round the lake, this tree was part of a general scatter of *Salix* spp. appearing to arise from seed or twig fragments on wet ground subject to seasonal flooding; no

search was made for any mature tree from which it may have derived. The *P. trichocarpa* parent contributes balsam scent to the cross; the *P. deltoides* parent contributes a truncate base to the leaves and conspicuous ridging to the twigs. The leaf midrib and petiole are reddish, the latter flattened. This is a **first record for West Kent, vc16**, and for the county as a whole**.**

Pyrola rotundifolia [R] (Round-leaved Wintergreen) was reported in Kent Botany 2019 by DS as present in Eastern Quarry (now renamed Whitecliffe). As an addendum to that record, a survey by GK on 16 October shows this to be the largest colony in Kent, numbering tens of thousands of plants. Some plants approached subsp. *maritima*, but could not be unequivocally assigned to that taxon. The colony was located south of Castle Hill Lake in the south east corner of the former Eastern Quarry, discontinuously from TQ 60555 72789 to TQ 59709 72865, i.e. for 846m. It is related to a raised trackway which follows the lake contours, below the north-facing chalk cliffs, and grows primarily along the lightly vegetated foot of the trackway where it drops towards ground seasonally flooded, and rarely at the foot of the cliffs; it must also enjoy calcareous drainage passing down the slope. In every case it was associated with *Salix caprea* (Goat Willow) and/or *S. cinerea* (Grey Willow) and/or *S.* x *reichardii* (the hybrid between the two willows). The trackway was at least partly in existence by 1999, fully by 2003, and the lake was formed between 2007 and 2012. Before then, the *Pyrola* was known as abundant in the north east corner of the former quarry (since destroyed), so this new habitat has rapidly succeeded the loss of the original. The 16 October records are mapped here.



Rumex x ruhmeri, the cross between *R. conglomeratus* (Clustered Dock) and *R. sanguineus* (Wood Dock) is seldom recorded, perhaps partly because of genuine rarity but also because instead of being intermediate as a whole, the hybrid can resemble each parent in different places, as a mosaic. This may leave recorders believing that it should be assignable to one of those species. On 14 August GK found a hybrid in rough pasture north west of Rye Lane, Dunton Green, TQ 51697 57420, growing in a mixed colony of parents, *R. conglomeratus* being near a stream, *R.sanguineus* having crept out from the Rye Wood boundary. It was a weak plant, showing bracts high into inflorescence as with *R. conglomeratus*, but with the angle of its branches more vertical, soon rising parallel with the main stem. Its small fruits were being shed irregularly (through sterility), mostly having three subequal tubercles (as with *R. conglomeratus*) but rarely with one or two of these under-developed. Tepals sometimes had tubercles covering most of surface with relatively little 'tongue' below (as with *R. conglomeratus*), but others had ample free length of tongue below tubercle (as with *R. sanguineus*).

Schoenoplectus* x *levensis (the hybrid between *S. lacustris*, Common Club-rush, and *S. tabernaemontani*, Grey Club-rush) has now been formally recognized and described (Lansdown & Rumsey, 2020a and b), with confirmation afforded by molecular analysis of Lincolnshire material. Amongst records listed as likely to have involved such a hybrid is one by J.E. Lousley (published 1931) of a colony relating to the River Medway near New Hythe, with stems 1.32m high, very stout; panicle spreading; glumes asperous; stigmas 3; anther connective not bearded; achenes slightly trigonous. It seems appropriate to take this as a **first record for West Kent, vc16**, but the area has changed considerably since the 1930s with gravel extraction around New Hythe and it seems likely that the original site no

longer exists. Current coincidence mapping shows the species generally with separate distributions in Kent, but it would be desirable to look out for robust glaucous plants with unusually long secondary panicle branches.

Securigera varia (Crown Vetch), an introduced European species with attractive pink flower heads and, in Kent, a somewhat coastal or estuarial distribution, was recorded by SP and DG between Frindsbury and Upnor, TQ751 699, where there were at least ten small plants spread thinly along the edge of a footpath for some 10m.

Sorbus x *thuringiaca*, the hybrid between *S. aria* (Common Whitebeam) and *S. aucuparia* (Rowan) was noted by GK and SK on 24 September, about 30m into Mariners Hill Wood from the car park at a bend in Hosey Common Road, TQ449520. It was a small, weak tree, bowed down so that its tip approached the ground. Both parents grew in the vicinity as they often do in the chart woodlands of the Greensand ridge.

***Umbilicus rupestris and habitat,* 11 February 2020. Photos © Mike Robinson**

Umbilicus rupestris [R] (Navelwort) is somewhat enigmatic in its off-wall appearances, sometimes reaching places that only birds might visit or winds blow; the seeds are small and extremely light, weighing only 0.0087 mg (Salisbury, 1976) and comparable with those of orchids. On 11 February, MR came across three plants on steep incline of pebbles set in concrete by steps down from A220 to the south side of the A2 at Bexley, TQ 499 741. Clearly the site is influenced by the passage of traffic, above and below; but the ultimate source of seed is not evident; the nearest site is MR's 2017 discovery of *U. rupestris* at Erith.

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