Notes

JUNCUS CAPITATUS WEIGEL (JUNCACEAE) REDISCOVERED NEAR ITS ORIGINAL LOCALITY IN ANGLESEY (v.c. 52)

The dwarf rush, *Juncus capitatus* Weigel, is an annual with a predominantly southern distribution in Europe. It is known from the Channel Isles, the Isles of Scilly, the Lizard peninsula and a few other localities in Cornwall; the only other British records are from Anglesey where it is rare and elusive and recorded only from a few places in or near sand-dune systems on the south-west coast.

The first record of *J. capitatus* in Anglesey was made by Bolton King in August 1918. It was reported from near Rhosneigr "in good quantity over a limited area, but assuredly native, growing with the usual damp heath vegetation" (*Report of the Botanical Exchange Club* **5**: 402, 1918). Specimens were sent by King to G. C. Druce and in an accompanying letter (dated 13 August 1918), held with the material in **OXF**, he gave details of the locality at "the extreme northern edge of Towyn-Trewan, close to the S. corner of the encircling wall round a rocky mound called Carnau (?)". A few years later, Druce was sent a further Anglesey specimen of *J. capitatus* (in **OXF**) by Lady Kathleen Stanley who wrote on 25 June 1925 that "there was quite a lot of it at Tywyn Trewan quite close to Rhosneigr". Although precise details are not available, the latter locality is unlikely to be the same as King's and is probably to the south-east in another part of the extensive sand-dune and dune hinterland habitat at Tywyn Trewan.

In the 1940s, Tywyn Trewan was extensively modified by the construction of RAF Valley airfield, and as this encroached up to the wall of the Carnau mound (Roberts 1982) it had been assumed that *J. capitatus* was extinct at this locality. The site has been searched on various occasions in recent years, but always without success. It was thus a welcome surprise when *J. capitatus* was found nearby by one of us (T.H.B.) while recording bryophytes on 31 March 1995.

About 10–20 individuals were present on the sides of two adjacent small hollows within an old vegetated blow-out, in a stand of dune heath situated to the south-west of Carnau farmhouse, immediately to the west of the airfield perimeter fence. The deeper of the two hollows had a shallow depth of water, but the other was above the water table. The *J. capitatus* plants were in patches of very moist sand in a narrow zone above the base of the hollows, with only a very sparse cover of associated species, including *Carex flacca* Schreb., *Erica cinerea* L., *Lotus corniculatus* L., *Luzula* sp., *Pedicularis* (seedling), *Sagina* sp. and *Salix repens* L. The *Calluna-Cladonia* heath in the surrounding blow-out was interspersed with open bryophyte-covered patches, but no further plants of *J. capitatus* were detected in this or in other parts of the heath.

All the *J. capitatus* plants at this locality were already post-mature, brown and with few remains of basal leaves by the end of March 1995; the inflorescences were still intact, but the capsules had all dehisced and were empty. A few shoots were collected and have been deposited in **NMW**.

Elsewhere in Anglesey, there are records from two other dune systems. It was observed on a field excursion of the Botanical Exchange Club in June 1937 from "S.W. side of Newborough Warren" (*Report of the Botanical Exchange Club* **11**: 49, 1937); no further details are available, and *J. capitatus* has not been recorded again from this locality where its habitat may have been destroyed by the establishment of a conifer plantation. It has also been reported from Tywyn Aberffraw by J. G. Duckett and J. N. B. Milton, and a specimen (now in herb. **A. J. Byfield**) was gathered in August 1983 "on damp sand" with two of the liverwort specialities of the Aberffraw dune system, *Petalophyllum ralfsii* (Wils.) Nees & Gott. and *Southbya tophacea* (Spruce) Spruce. More recent searches at this site by R. H. Roberts and others have been unsuccessful.

J. capitatus has thus been recorded only very sporadically and locally in Anglesey from three sand dune systems. Viable seed of this species can remain dormant for at least 29 years (Coombe 1987), and its reappearance near Carnau demonstrates that it can persist unnoticed for over 50 years. Londo & van Leeuwen (1974) reported the appearance of *J. capitatus* at a new locality within a dune system in the Waddendistrict of The Netherlands following the creation (by excavation) of

depressions which were part-flooded in winter. A curious feature of the Anglesey records is their seasonal range; *J. capitatus* (presumably always with inflorescences) has been observed in March, June and August, suggesting variable phenological behaviour.

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RUBUS PANNOSUS P. J. MUELLER & WIRTGEN (ROSACEAE) IN BRITAIN

Watson (1958) described *Rubus gravetii* as "very rare; [v.c.] 15 (Bigbury to Chartham Hatch), [v.c.] 18, (Epping Forest, High Beach). Belgium, W. Germany." No search has yet been made for the plant in v.c. 15, E. Kent, but during the summer of 1995 A.L.B. studied intensively the Rubi of the whole northern half of Epping Forest, S. Essex (v.c. 18), on behalf of the Superintendent of Epping Forest (Corporation of London). The plant was already known to him from visits to the Forest in 1987 and subsequently. It had been determined by A.N. as "false *gravetii*" with the proviso that it had not been compared critically with the Continental European plant since Watson's time and could possibly be the same. Watson's Bigbury-Chartham (v.c. 15) specimen (**SLBI**) had, however, been compared with the type of *gravetii* by Newton and E. S. Edees in 1978, when its identity was rejected.

Interestingly, the "false *gravetii*" was met with only once in the northern part of the study area, whereas the closely related *Rubus fuscus* Weihe was frequent and occurred at nine of the study sites. In the southern and south-western part of the study area *R. fuscus* was only found once, but the "false *gravetii*" was abundant and often dominant in eleven sites. At this time the plant was accepted as being "probably a local endemic."

During August 1995, whilst revisiting the tetrads covered by the Norfolk B.S.B.I. recording weekend in June to record the Rubi, A.L.B. discovered "false *gravetii*" to be frequent on the Sheringham Park estate at NGR TG/1.4.

As it had now been established that the plant was not an Epping Forest endemic, a specimen was sent to Professor H. E. Weber (University of Osnabrück, Germany) with the request that if possible he compare it with the Continental *R. gravetii*. In his reply, he stated that he and Dr G. Matzke-Hajek (of Alfter, Germany) had independently examined the specimen and both had determined it without hesitation as *Rubus pannosus* P. J. Mueller & Wirtgen: however he wished to see photocopies of additional herbarium specimens. Among the photocopies sent to him were copies of specimens from both the Epping Forest and Sheringham Park populations. All of these were accepted by Weber as falling within the range of possible intraspecific variation.

After some discussion, A.N. offered to borrow specimens of *R. gravetii* and *R. pannosus* from **MANCH** for comparison. The sheets examined were as follows:
Rubi praesertim Gallici exsiccati (1895) no. 39, coll. F. Gravet (an isolectotype of *Rubus gravetii*).

Wirtgen Herb. Rubor. Rhen. ed. 2, fasc. 2 no. 77, *Glandulosi* Muell.: "Bopparder Walde hinter Waldesch bei Coblenz", 17. vii. 1859 (the holotype of *R. pannosus*).
G. Braun Herb. Rub. Germ. no. 134, coll. [Th.] Braeucker, "in der Rheinprovinz" (*R. eifelensis* Wirtgen).
Wirtgen Herb. Rubor. Rhen. ed. 1, fasc. 4, no. 94 (*R. eifelensis*).

The last-named sheet above was laid aside as being distinctly different from the other three, which were subjected to intense scrutiny. Syntypes of *R. pannosus* all belonging to set 77 had been sent from **BM** and **BR** and were included in the comparisons. It was concluded that, despite minor differences, chiefly with regard to leaf shape, all three belonged to the same species and that they matched the Epping Forest plant well. Thus, while Watson was correct in equating the Epping Forest plant with that distributed by Gravet in 1895, the name *Rubus pannosus* P. J. Mueller & Wirtgen has priority. *R. pannosus* should therefore be admitted to the British list with a known distribution of NGR: TL/4.9 and TL/4.0, Epping Forest (v.c. 18); TG/0.3, Holt Lowes (1972, **herb. A.L.B.**); and TG/1.4, Sheringham Park (both v.c. 27, E. Norfolk).

We have also studied the defective holotype specimen (**BR**) and other specimens of *Rubus cinerascens* Weihe ex Lej. sent from Belgium by H. Vannerom, which he considers to be conspecific with *R. pannosus* and *R. gravetii*, but this identity in our opinion cannot be sustained.

Rubus pannosus may be recognised by its villous stem, deep reddish-black in colour, the hairs covering dense, short, blackish glands. The prickles are short-based, straight, somewhat slanting, fairly many, and coloured like the stem. The leaves are digitate, softly pilose, especially on the veins beneath, which are pectinately hairy. The terminal leaflet is ovate or elliptical, acuminate, the base somewhat cordate or emarginate. The panicle is pyramidal, usually round-topped, the middle and lower branches long and spreading, the pedicels exactly patent when well developed, armed and coloured like the stem. The white-edged sepals may be loosely reflexed or patent, sometimes long pointed. The petals are narrowly obovate, mid-pink; the filaments are pink and a little longer than the deep red styles.

R. fuscus Weihe differs in the stem being not quite so densely hairy or glandular, but with fairly numerous pricklets. The leaves are more abruptly and shortly acuminate, and the margins less evenly serrate. The panicle of *R. fuscus* is longer and more symmetrically pyramidal than *R. pannosus*, and the petals in the Epping Forest population of the former are typically several shades darker than *R. pannosus*, often almost red.

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THE STATUS OF *PULICARIA VULGARIS* GAERTNER IN BRITAIN IN 1995

In 1990 the Hampshire Wildlife Trust undertook a national census of *Pulicaria vulgaris* Gaertner, Small Fleabane (Asteraceae). All surviving populations were identified and surveyed. The population was estimated at 10,000 plants. Of all the populations in Britain 98% were found in S. Hants (v.c. 11), the majority in the New Forest with outliers in the Avon Valley. The remaining

populations were found in the Thames Basin of N. Hants (v.c. 12) and Surrey (v.c. 17). A summary of the 1990 survey results was published in *Watsonia* **18**: 405–406.

Since 1990 there have been resurveys of selected populations by Wildlife Trust volunteers and a collation of population studies pre-dating 1990. These studies, together with informal observations of various sites, suggested that the plant may still be in decline in various localities. This general concern prompted the 1995 survey.

The 1995 survey was undertaken by Lady Rosemary FitzGerald, assisted by Geoffrey Field, Elizabeth Young, John Ounsted and Joyce Smith. The 1995 survey adopted the same methodology as the 1990 survey. Small Fleabane was refound at all of the sites identified in 1990. The plant was not refound in any sites whose populations were considered extinct by 1990, nor was it reported from entirely new sites. Since 1990 additional populations have been found within the immediate vicinity of known sites. Some of these extentions to populations identified were significant, particularly those associated with farmyards and enclosed lands in S. Hants.

The British population of Small Fleabane in 1995 was estimated at some 28,000 plants. The distribution of plants by vice-county was found to be very similar to the 1990 survey, with 98% of the population in the Hampshire Basin, S. Hants. (v.c. 11), with 87% in the New Forest and 11% in the Avon Valley. The Thames Basin supported 2% of the population, 1·5% in N. Hants. (v.c. 12) and 0.5% in Surrey (v.c. 17).

The 1995 populations were compared to the 1990 survey and a partial 1985 Nature Conservancy Council survey, together with other records for the sites. Some well recorded sites have been recorded up to 13 times over the last three decades.

Since the onset of detailed recording in 1985, only one area had entirely lost its population of Small Fleabane in Britain. This was a population formerly known from English Nature's Ashford Hill National Nature Reserve in N. Hants. As a result of the 1995 survey remedial works to revive the population have been adopted.

The population size in Britain as a whole has decreased by an order of magnitude from over 100,000 plants in 1985. This decline had occurred by 1990 and was not considered to be significant in conservation terms (Chatters 1991). The national decline is predominantly accounted for by changes in a single sub-site which still supports a healthy dynamic population.

Since 1990 four areas have experienced increases in their Small Fleabane population which are considered to be significant. In two sites the populations increased by one order of magnitude and in two other sites by two orders of magnitude. No sites have declined by one or more orders of magnitude.

Whereas Small Fleabane is usually associated with grazed village greens and heathland edges, the 1995 study found it in enclosed farm lands and within non-intensively managed farm-yards. Historic ecological studies revealed that these were former commons and greens or closely associated with the same. The farmyard habitats have not been described previously and pose unusual challenges to ensure continuity of management to conserve the population.

This survey would not have been possible without the financial assistance of English Nature's Species Recovery Programme and the Guinness Trust. We are also very grateful for the assistance of the many landowners and managers on whose private property Small Fleabane grows.

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A WOLLEY-DOD LETTER OF HISTORICAL INTEREST

The following letter from A. H. Wolley-Dod to the Rev. H. J. Riddelsdell was found in one of the folders of the **BM** British *Rosa* collection. It is reproduced here exactly as Wolley-Dod typed it, apart from the correction of a few obvious typing errors.

Glenrinnes,
Tadworth, Surrey.
18th Oct. 1920

Dear Mr. Riddelsdell,

I have not been many days over your roses, but that is not much indication of the number of hours spent. I have done little else since they came. My motives were partly selfish, because I had just started on a parcel for Dingler when they arrived. I fear I shan't get much out of him, and that not for some months. He finds British Roses very difficult and grudges the time they take.

As you anticipate, my criticism of your plants in general is that you have collected too indiscriminately. It is easy to go out and cut a specimen from every bush you see, but it is quite another matter to name them. Personally I pass over 50% of the bushes I see as unnameable, and only collect those which are in good condition and which present some marked feature. This of course is shirking my responsibilities but the difficulties are greater than I can face. Another result of indiscriminate collecting is the number of bad specimens; I mean those which are badly grown or in some way abnormal. In so difficult a genus only the best grown material gives a critic a chance, that is the stuff must be characteristic of the bush it is cut from, and that bush should be a well grown one. Someone once said that the average herbarium is a collection of freaks, meaning that botanists have a tendency to gather unusual looking specimens, just to show how species vary. That is all very well in general where the species and varieties are more or less easily recognisable, but it will not do in Rosa.

Another minor point, which concerns your own herbarium more than my determinations is the awkward shape of some of the specimens owing to your having cut pieces with the old stem not in the same plane as the flowering branches. Old stem is often desirable, since the prickles on the flowering shoots are often not characteristic of the specimen, but you can almost always get these of a less awkward shape. Some of your worst bits have not even prickles on them so that they are useless encumbrances.

One more suggestion is that you try and arrange your gatherings in Groups. No doubt you will make mistakes. I do so myself, but it is very helpful to have all of one affinity together, if only to facilitate reference to my own herbarium. Moreover the chances of my giving the same name to different varieties or conversely, is reduced.

I hope you won't mind these criticisms, but I hope they may help you as well as me.

I have got quite a lot of N.C.R.s for Gloster, but very few for Oxon as Druce has skinned that V.C. fairly closely. I am surprised at the absence or rarity of several of what I had regarded as our commoner forms e.g. viridicata, stenocarpa, adscita, andegavensis, urbica, trichoneura, jactata, Gabrielis, (the last 3 I think totally absent, but all very near urbica and semiglabra). Typical dumetorum is also absent, but I believe that to be rare. All Deseglisei, not a very common Group, also do not appear nor do Villosae (except one abnormal plant) and Rubiginosae. I am not surprised at seeing no Glaucae or Coriifoliae, as they thin out greatly as you go S.E., still Gloster is hardly S.E., nor is Oxon.

Do not be surprised at my nomenclature. I think in the last lot I did for you I followed that I had adopted in my last paper, but I am contemplating changes, not so much in names as in combinations, e.g. I shall probably drop R. lutetiana as a type, i.e. species name, and go back to R. canina. I have therefore in the main given you the names in the form their authors wrote them.

I am not sure that I am not wrong in attempting to name more than above 30% of what I see. The more I see of the genus the more new combinations of characters appear. Doubtless many of these have names, but they are unknown to me. I have at least 100 names from Sudre and Dingler which I do not use, since the specimens seem to me to be too near to other better known ones, or are probably those of individual bushes which I should not adopt unless they presented very striking features. I am getting stronger in the opinion that Roses are classified on wrong lines. They are much over-split, and the Subgroups, and even some Groups are based upon purely artificial characters, so that plants which have great natural affinities get widely separated. I believe we may have species

which may be glabrous or hairy, uniserrate or biserrate, glandular or not, with variations in the fruit, sepals and style. So you may say we have if I adopt R. caninae as a large aggregate species, but I mean its varieties should be associated on different grounds, abolishing most of its Subgroups, though how to do it beats me. If only I could find someone in England who knows roses well enough to discuss these matters, I should feel happier. As it is I fear I shall develop into a dictator, with no one able, if I may say so, to contradict me. The result may be disastrous. Still former rhodologists have differed so widely in their treatment of the genus that I may perhaps be allowed to be original, but I hope not comic or worse.

Yours sincerely
(signed) A. H. Wolley-Dod.

The main interest of this letter arises from the fact that it was written at a time more or less half way between the publications of Wolley-Dod's major papers: *The British roses* (1908 and 1910) and his *Revision of the British roses* (1930–31). It is plain from this letter that he was dissatisfied with the state of affairs at that time, if not actually bewildered by it. He came to distrust Sudre's determinations, and based his nomenclature on that of R. Keller, though realising that British material could not necessarily conform with the large numbers of named varieties and forms derived from Continental specimens. E. B. Bishop, on the other hand, working concurrently with Wolley-Dod, tried to follow Keller exactly, with the result that he grossly over-collected, as his large herbarium collection in **BM** shows: there are literally hundreds of specimens of *R. canina* from the small areas around Godalming in Surrey and near Ailsworth in v.c. 32 (Northants). This is one of the things which Wolley-Dod was warning Riddelsdell against in the letter here reproduced. When Wolley-Dod published his *Revision of the British roses* he reduced the species to a workable number, dividing some of the species into "groups" which though not strictly valid taxonomically, at least provided pigeon holes into which the majority of the roses could be placed. The varieties and forms which he retained were less satisfactory, as Wolley-Dod himself (1936) came to realise. Though Wolley-Dod's system can be criticized in the light of modern taxonomic opinion, he did produce some order out of chaos, and provided a workable system which served British rhodologists for 60 years.

It is a pity that Wolley-Dod would not admit the possibility of extensive hybridization in *Rosa*; he would only allow a rose to be a hybrid if it showed complete or partial sterility. Had he allowed for this, with his intimate knowledge of the British roses he could have arrived at a system more conformable with modern taxonomic opinion. Also it appears from his writings that he was aware of the researches of Blackburn & Harrison (1921) into the peculiar reproductive behaviour of the caninoid roses, but did not seem to realise their significance. It was not until 1975 that R. Melville, by the publication of his account of British *Rosa* hybrids, provided a basis for research (Melville 1975; Graham & Primavesi 1990). This made possible a complete revision of the British roses, as described in Stace's *New Flora* (1991) and *Roses of Great Britain and Ireland* (Graham & Primavesi 1993). Further research is still required, especially for the informal groups of *R. canina*, but at least it can be said that taxonomy of British *Rosa* is now placed on a firm and sound basis.

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ALIEN PLANTS AT FOYNES PORT, CO. LIMERICK (V.C. H8), 1988–1994

Despite their obvious potential as sites of plant introductions, there have been no published botanical surveys of ports in Ireland prior to the survey of alien plants made at Dublin Port for 1988–1994 (Reynolds 1996a). This note and list of established and casual alien plants at Foynes Port, Co. Limerick (v.c. H8), has been written to complement the list for Dublin Port.

Foynes Port (grid ref. R/25.51), on the Shannon estuary about 30 km west of Limerick city, is the largest public port in the west of Ireland, and the only west coast port with a substantial trade in animal feed. It has a land area of 52 ha and the annual total throughput was approximately 1 million tonnes in 1988, increasing to 1·5 million tonnes in 1994, with imports making up 88% of the total throughput in 1994 (M. V. O'Brien, pers. comm. 1996). Animal feed, including grain, made up 25% of imports in 1988, increasing to 43% in 1994. Over the study period, about 60% of the animal feed was imported from New Orleans, and the next most common sources were Indonesia and Malaysia. Some feed also came from China and more rarely Argentina. Other imports were coal, fertilizers, petrol, fuel oils and molasses. Although the port had been botanized regularly since 1977, there was no conspicuous influx of alien plants before 1988 (Reynolds 1990).

In 1988, there was a luxuriant growth of alien plants at Foynes Port, with many rare and new species, and the probable source was as seeds with the imported animal feed. Animal feed was normally unloaded by grab into lorries, stored in nearby warehouses and then transported from the port by road, so there was a certain amount of spillage at each stage. Open land at Foynes Port is largely unpaved, unlike Dublin Port, where there is little unpaved ground near the docks. At the eastern edge of Foynes Port, there is an area of newly reclaimed land, which has also been used as an unofficial dump since 1994.

Established and casual alien plants have been a botanical feature of Foynes Port since 1988, and a list of all those species found in the port area from 1988 to 1994 inclusive is given in Table 1. Detailed records for some of these have already been published (Reynolds 1990, 1992, 1993, 1994, 1996b). The alien species which occurred in the greatest numbers over the seven years were *Amaranthus retroflexus* and *Thlaspi arvense* while *Erucastrum gallicum*, *Setaria viridis* and *Erysimum cheiranthoides* were much less frequent. Many other species were found only in small numbers, such as *Amaranthus albus*, *A. hybridus*, *Chenopodium* spp., *Echinochloa crusgalli*, *Lepidium* spp., *Matricaria recutita*, *Sinapis alba* and *Sisymbrium loeselii*. On the newly reclaimed area in 1994, *Amaranthus retroflexus*, *Chenopodium ficifolium* and *Erucastrum gallicum* thrived, intermingling with potatoes (*Solanum tuberosum*), tomatoes (*Lycopersicon esculentum*) and other plants of local domestic or garden origin. *Hordeum distichon* has been exported from Foynes, hence plants occur casually.

Compared to the 66 species found at Dublin Port over the same period (including *Rapistrum rugosum* 1988–1994, which was inadvertently omitted from the Dublin Port list), 41 species were found at Foynes Port, with an overlap of 24 species (Table 1). Some plants which were very common at Dublin Port were not found at Foynes, for example, *Conyza canadensis*, *Melilotus officinalis*, *Rapistrum rugosum*, *Senecio squalidus*, *Sisymbrium orientale* and *Hordeum murinum*. *Hirschfeldia incana* has been abundant in parts of Dublin Port since at least the early 1980s (Rich 1988), but it was only seen for the first time at Foynes in 1992, where it is now well established particularly on stony ground.

TABLE 1. ESTABLISHED AND CASUAL ALIEN PLANTS FOUND AT FOYNES PORT, CO. LIMERICK, FROM 1988 TO 1994, WITH YEAR(S) WHEN FOUND.

Species	Years found at Foynes Port	Origin	Recorded at Dublin Port
Amaranthus albus	1989, 1990	Gr	
Amaranthus hybridus	1990	Gr	
Amaranthus retroflexus	1988–1994	Gr	D
**Avena fatua*	1988–1990, 1992, 1994		D
Avena sativa	1989, 1994	Cult	D
Bassia scoparia	1988, 1989	Gr	D
Brassica juncea	1993	Gr	
**Brassica napus*	1988, 1989	Cult	
**Buddleja davidii*	1993	Cult	D
**Camelina sativa* s.s.	1988, 1989		
**Chaenorhinum minus*	1993		D
Chenopodium capitatum	1988		
Chenopodium ficifolium	1994		
Chenopodium glaucum	1988–1990		D
Chenopodium leptophyllum	1990	Gr	
Chenopodium strictum	1988	Gr	
Crepis tectorum	1988–1991	Gr	
**Echinochloa crusgalli*	1990		D
**Epilobium ciliatum*	1989, 1993		D
Erucastrum gallicum	1988–1994	Gr	D
**Erysimum cheiranthoides*	1988–1993		D
**Hirschfeldia incana*	1992–1994	Gr	D
Hordeum distichon	1988, 1989, 1992, 1994	Cult	D
Hordeum vulgare	1989	Cult	
Lepidium ruderale	1990		
Lepidium virginicum	1989	Gr	
Lycopersicon esculentum	1993, 1994	Cult	D
**Matricaria discoidea*	1988–1994	Gr	D
**Matricaria recutita*	1988, 1989		D
**Phalaris canariensis*	1993	Gr	D
Pisum sativum	1992	Cult	D
**Senecio viscosus*	1993		D
Setaria viridis	1988–1993	Gr	D
**Sinapis alba*	1990	Cult	
Sisymbrium loeselii	1988	Gr	
Solanum tuberosum	1994	Cult	D
**Tanacetum parthenium*	1993	Cult	
**Thlaspi arvense*	1988–1994		D
**Trifolium hybridum*	1988	Gr, Cult	D
Triticum aestivum, unawned	1989, 1994	Cult	D
Tropaeolum majus	1994	Cult	

Nomenclature follows Stace (1991).
* = listed in Scannell & Synnott (1987) as an established alien in Ireland.
Gr = known grain alien (Clement & Foster 1994; Ryves, Clement & Foster 1996).
Cult = of garden or agricultural origin.
D = recorded at Dublin Port 1988–1994 (Reynolds 1996a).

Several species which are not considered to be 'certainly introduced', i.e. alien, in Ireland (Scannell & Synnott 1987), but which are almost cosmopolitan (Clapham, Tutin & Moore 1987), were likely to have been introduced with animal feed at Foynes Port, for example, *Descurainia sophia* (1988–1992) and *Spergula arvensis* (1988–1991). In addition, it should be noted that some species which are considered native or probably native in Britain and so excluded from Clement & Foster's (1994) list of aliens, may have arrived at Foynes Port as grain aliens, the grain being used for

animal feed. For example, *Thlaspi arvense* was abundant at the port and was found with other aliens on roadsides leading away from Foynes; it is otherwise rare in Ireland.

In 1995, despite some use of weedkiller, alien plants were again conspicuous. A new addition was *Malva pusilla*, a distinctive mallow with tiny pale flowers, which is unlikely to have been missed in previous years. As has been described elsewhere (Reynolds 1992), many alien plants found at Foynes Port have also been found on roadsides in Co. Limerick. Although some, such as *Amaranthus retroflexus*, *Setaria viridis* and *Thlaspi arvense*, are capable of setting seed successfully under Irish conditions, presumably there are also fresh introductions of aliens each year with spilt animal feed, mainly grain and feed nuts. Such plants are particularly noticeable where grass verges have been scraped back mechanically to expose new soil. So far there is no evidence that any of the plants recorded at Foynes Port are competing with the native flora or are becoming invasive in natural habitats.

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THE PUTATIVE HYBRID BETWEEN TWO TEASELS, *DIPSACUS FULLONUM* L. AND *D. SATIVUS* (L.) HONCK. (DIPSACACEAE) IN DUBLIN (v.c. H21)

Dipsacus fullonum L., Wild Teasel, is native in the British Isles; it is common in south-east Britain and more local elsewhere. *D. sativus* (L.) Honck., Fuller's Teasel, is not native, and its origin is uncertain; it is grown for fulling (raising the nap on woollen cloth) in Somerset, and is also known as an escape from cultivation and a bird-seed alien (Stace 1991; Clement & Foster 1994). Topham (1968) and Ryder (1996) have written interesting accounts of Fuller's Teasel in Britain. In Ireland, Colgan (1904), quoting an earlier work published in 1772 which described the 'Manured Teasel' as

being "cultivated and dried for the use of the clothiers in Dublin", then commented that the wild teasel in Co. Dublin was "perhaps but a reversion from the plant once so cultivated". *D. sativus* (as *D. fullonum* subsp. *sativus*) has been recorded as a casual with *D. pilosus* in Co. Down (v.c. H38) in 1915 (Hackney 1992) and at one site in Co. Dublin (v.c. H21) since 1990 (see below). There are no specimens of *D. sativus* in the herbaria at the National Botanic Gardens, Dublin (**DBN**), Ulster Museum, Belfast (**BEL**) or Trinity College, Dublin (**TCD**).

In the past, the two taxa in question were frequently treated as subspecies of *D. fullonum* (e.g. Clapham, Tutin & Warburg 1962), but currently they are recognized as distinct species (Hansen 1976; Kent 1992). Recently, the status of *D. sativus* as a distinct species has again been questioned (Ryder 1996). I have not been able to discover any mention of the hybrid between these species in continental Floras despite most of them recognizing two separate species. However, the hybrid between *D. fullonum* and *D. laciniatus* L. has been found in a garden in England (Campbell 1993), and it is well known on the continent (C. A. Stace pers. comm., 1996).

In the British Isles, I am aware of only two possible occurrences of the putative hybrid between *D. fullonum* and *D. sativus*. Firstly, there is a record of *D. sativus* at Bradger's Hill in Bedfordshire "with intermediates with *D. fullonum*" (Dony 1953). Secondly, in a letter to C. A. Stace dated 27 June 1974, Dr J. T. H. Knight wrote that he had found "the putative *Dipsacus* hybrid near Langport in Somerset some two miles [3 kms] east of the town in 'Wagg Drove' which lies off the Langport-Wincanton road. It was mid-August [probably 1973] . . .". Dr Knight was attracted by the tallness of the plants and "certain features of the inflorescence". He also added that *D. sativus* was grown as a crop some five miles [8 kms] west of Langport. A slide of the putative hybrid taken by Dr Knight, and seen by me, resembles the plant found in Dublin (described below).

In Co. Dublin, *D. fullonum* is more common along the coast than inland. It has been abundant on an area of reclaimed land at the edge of Dublin Bay, known informally as 'Ringsend Dump' (Grid ref. O/19.33) since at least the early 1980s. In July 1990, a few plants of *D. sativus*, also a biennial, were found in one patch on a cleared gravel site at Ringsend Dump, with dense stands of *D. fullonum* within 100 m. A small number of *D. sativus* plants have been found in the same place every year since then. In 1994 a possible intermediate between the two species was seen, but not further

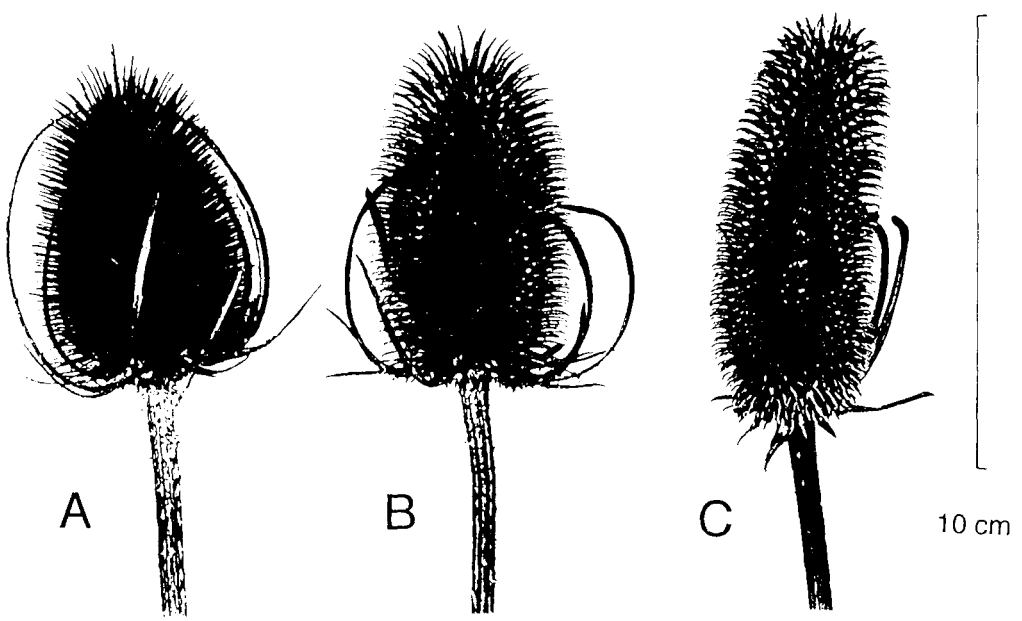

FIGURE 1. Mature, dried flower heads showing the involucral and receptacular bracts of: A. *Dipsacus fullonum*, B. the intermediate, and C. *D. sativus*, from Ringsend Dump, Dublin.

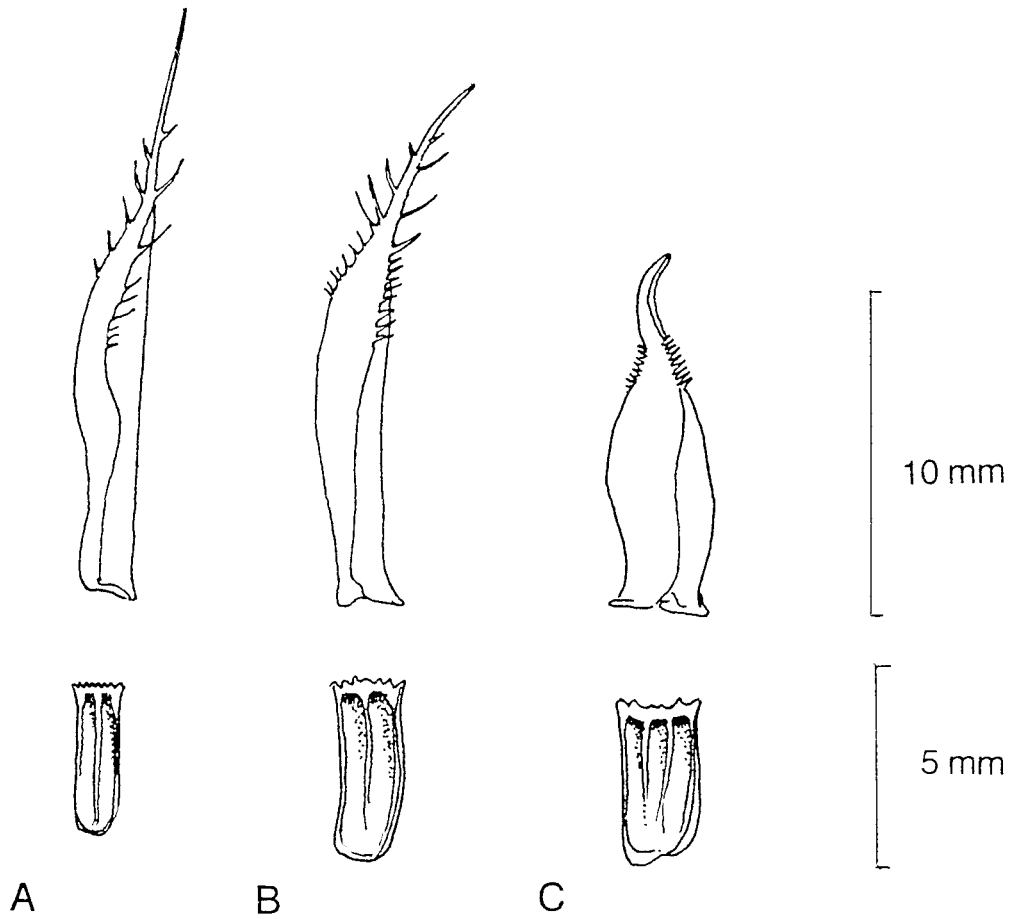

FIGURE 2. Drawings of the receptacular bracts (above) and seeds of: A. *Dipsacus fullonum*, B. the intermediate, and C. *D. sativus*, from Ringsend Dump, Dublin.

TABLE 1. LENGTHS AND WIDTHS OF MATURE SEEDS OF *DIPSACUS* FROM RINGSEND DUMP, DUBLIN (MEAN AND RANGE (IN BRACKETS) FOR 20 SEEDS OF EACH TAXON)

	D. fullonum	Intermediate	*D. sativus*
Mean length (mm)	3·7 (3·1–4·1)	4·6 (4·0–5·0)	4·3 (3·8–4·7)
Mean width (mm)	1·1 (0·9–1·8)	1·8 (1·3–2·2)	2·0 (1·7–2·3)

checked. The following year, when the site was visited with the Dublin Naturalists' Field Club on 9 August 1995, there were two plants of *D. sativus* and, beside them, one large plant with conspicuously intermediate characters between it and *D. fullonum*, particularly noticeable in the involucral and receptacular bracts, and stem leaves. This plant was 2 m tall with about 30 inflorescences. Presumably the more distant *D. fullonum* provided the pollen for this cross.

Further visits were made to the site later in August and in mid-September, when specimens were taken and seeds collected. Fig. 1 shows whole flower heads, and Fig. 2 shows details for the receptacular bracts and seeds. Descriptions of some characters of Ringsend Dump plants in fruit are given below for both parents and for the intermediate. Measurements were made on 20 mature seeds (Table 1). Voucher specimens have been deposited in **DBN**.

D. fullonum
Stems with many prickles; stem leaves with sharp prickles on underside of midrib; the longer involucral bracts spiny, curving upwards, usually as long as or exceeding the inflorescence; receptacular bracts with long straight flexible spines, conspicuously ciliate; seeds longer than wide, c. 3·7 × 1·1 mm, four-sided with one longitudinal ridge in the middle of each side, brown with appressed hairs.

D. sativus
Stems with fewer, shorter, blunter prickles than *D. fullonum*; stem leaves with no prickles on underside of midrib; the longer involucral bracts not spiny, spreading, much shorter than the inflorescence; receptacular bracts stiff, short with strongly recurved tips, inconspicuously shortly ciliate; seeds longer than wide, c. 4·3 × 2·0 mm, four-sided with one, two or occasionally three longitudinal ridges in the middle of each side, pale brown with silvery white appressed hairs, more densely hairy than *D. fullonum* or the intermediate.

Intermediate
Stems with fewer prickles than *D. fullonum*; stem leaves with prickles on underside of midrib; the longer involucral bracts curving upwards, usually shorter than the inflorescence, somewhat spiny; receptacular bracts stiff, slightly recurved at the tip, longer than in *D. sativus*, ciliate; seeds longer than wide, c. 4·6 × 1·8 mm, four-sided with usually one longitudinal ridge in the middle of each side, occasionally two, dark brown with appressed hairs.

It was noted that the length of the longest involucral bracts and degree of prickliness of the stems were variable on individual plants at Ringsend Dump. However, the structure of the receptacular bracts was much more constant for each taxon. Mature, dried seeds of *D. fullonum* were distinctly smaller and narrower than those of *D. sativus*, while the seeds of the intermediate were slightly larger and darker than those of the latter species. By mid-September, the seeds of all three taxa were mature and being released from the inflorescences. Seed-set was as good in the intermediate as it was in both parents. Seeds of the intermediate, planted outdoors in the author's garden in November 1995 had germinated by early April 1996, while others planted indoors on 5 April 1996 had germinated eleven days later.

As *Dipsacus* seeds are heavy and have no adaptation for wind dispersal, many will drop beneath the parent plants; hence *D. fullonum* may form dense stands. However, the number of *D. sativus* plants at Ringsend Dump has not increased since 1990. At that time, the site was more open than in August 1995 when it and the intermediate were growing among a dense cover of *Agrostis stolonifera*, *Dactylis glomerata*, *Cirsium arvense*, *Plantago lanceolata*, *Hypochaeris radicata*, etc. In September 1995, the area had been burnt leaving small patches of open ground. This may allow new plants to establish themselves more easily.

There are many plants of garden origin at Ringsend Dump, and it is possible that the *D. sativus* arrived here as seeds in garden refuse. The 1993 catalogue for Chiltern Seeds listed *D. fullonum*, "used by fullers", as "one of the most popular flowers for drying for use as flower arranging material", also attractive to bees and butterflies, and easily grown. It is also listed in the 1996 Thompson & Morgan catalogue, with *D. sativus* given as a synonym. The picture on the seed packet, only labelled 'Teasel', is that of *D. sativus*; however the seeds are not identical with those of that species collected at Ringsend Dump. The description on the packet says that the cylindrical heads are evenly covered by hooked spines used for raising the nap on cloth, but then goes on to describe this teasel as a "native" plant. The picture on the Suttons Seeds 'Teasel (*Dipsacus fullonum*)' packet appears to be of Wild Teasel, and the flower heads are described as large and spiny, "a valuable source of nectar for bees and butterflies" or to be cut and dried for winter decoration. The enclosed seeds are similar in appearance to those of Thompson & Morgan.

In conclusion, since fertile hybrids may be formed between two recognized species (Stace 1975), and since two distinct species, *D. fullonum* and *D. sativus*, are now recognized, then the plant found in Dublin with intermediate characters and mature, viable seeds should be considered the putative hybrid.

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EARLY GENTIAN (*GENTIANELLA ANGLICA* (PUGSLEY) E. F. WARB.) PRESENT IN WALES

Gentianella anglica (Pugsley) E. F. Warb. is a rare endemic protected under Schedule 8 of the *Wildlife and countryside Act*, 1981 (as amended). It is also listed in Appendix 1 of the Council of Europe's *Bern Convention* and Annex II of the *E.U. Directive on the conservation of habitats and wild fauna and flora* ("*Habitats Directive*").

This short note documents the two records of Early Gentian, *Gentianella anglica* (Pugsley) E. F. Warb. for Wales, both from Pembrokeshire (v.c. 45) and determined by TCGR. The plant has previously been regarded as an English endemic and there are no published records for Wales.

1. Near Tenby, 17 May 1921, J. E. Arnett (**OXF**). The collection consists of one specimen with a corolla 18 mm, three internodes and a terminal internode forming 35% of the length of the stem. It was mounted on a sheet with other material named by G. C. Druce as *Gentiana amarella* var. *praecox*, but the record does not appear to have been published. The herbarium sheet was seen by N. M. Pritchard during his work at Oxford on *Gentianella* but he makes no reference to the specimen (Pritchard 1959).

Arnett's copy of 'On the botany of South Pembrokeshire' (Babington 1863) contains a pencil annotation to "*Gentiana amarella* var. *praecox*", which is what *G. anglica* was known as at the time,

but there are no additional specimens in Arnett's herbarium at Tenby Museum (**TBY**; S. V. Baldwin pers. comm., 1996).

I am aware that *Gentianella uliginosa* (Willd.) Börner also occurs in the Tenby area. All specimens seen have been collected flowering from July onwards and differ in morphology.

2. Stackpole National Nature Reserve, sparsely in dry hollow dominated by mosses and lichens, SR/984.944, 10 June 1994, A. Jones (**NMW**). The collection of three plants has a mean corolla length of 15 mm, a mean of 2·3 internodes and the terminal internode forms a mean of 63% of the length of the stem.

Odd '*G. amarella* (L.) Börner' plants were first shown to me on Stackpole Warren in 1990 by Bob Haycock. Plants collected for identification on 16 July 1990 mostly had four internodes and a slightly contracted terminal internode (measurements by S. B. Evans; specimens not seen). These may be hybrids between *G. anglica* and *G. amarella*.

The rediscovery and conservation of the Tenby locality is much to be desired. The plant should be searched for in short, dry, open, calcareous grassland in May or early June. Populations of *G. anglica* elsewhere are known to fluctuate markedly in abundance from year to year due to its biennial habit, so suitable sites may need to be investigated repeatedly.

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NOTES ON SOME EARLY SUSSEX BOTANICAL RECORDS BY THOMAS SOCKETT (1777–1859)

Born into quite a humble family on 20 November 1777, Thomas Sockett was plucked from obscurity when he was about 14 years old by the poet William Hayley (Povey 1928).The young Sockett was helping to operate a device for generating static electricity for therapeutic purposes in Weston Underwood, Buckinghamshire. Hayley, who was interested in scientific gadgets in general and this machine in particular, encountered the boy while on a visit to fellow poet Cowper; so impressed was he with his natural intelligence that Hayley took Sockett back to his home in Eartham, West Sussex, to be preceptor and companion to his son. The arrangement evidently proved satisfactory and in 1794 Sockett assisted Hayley with the transcription of the autobiography of Edward Gibbon which was being prepared for publication by Lord Sheffield, and he was described as having a good education and being able to read Latin and French.

In 1795 he became preceptor to Lord Egremont's eldest son, and in 1797 was tutor at Petworth House. In 1806 he went to Exeter College, Oxford (presumably at Lord Egremont's expense) and was ordained in 1808. He graduated in 1810 and became Rector first of Tadcaster and then of North Scarle, Lincolnshire and of Duncton and Petworth in Sussex. He resided mainly at Petworth, and died on 17 March 1859. There is a monument to him in Petworth Church and a portrait in Petworth House (reproduced in Povey 1928).

Sockett was also godfather to F. H. Arnold, who wrote the first Sussex Flora (Arnold 1887).

Arnold's father was choir master in Sockett's church at Petworth. It is almost certain that Arnold learnt some of his plants from Sockett, and in his *History and antiquities of Petworth* thanked him for ten years of tuition (Arnold 1864). Oddly, there are no records attributed to Thomas Sockett in Arnold's *Flora of Sussex*, but he does include some records by one of his sons, Henry Sockett. Henry Sockett also entered the church and had the living of nearby Sutton for many years.

RECORDS FROM PETWORTH

In the Petworth House archive held at the West Sussex Office, there is an unpublished, incomplete manuscript from 1805 entitled "Mr Sockett's Journal" (no. 1679). This diary indicates that he regularly hunted, played Real Tennis and read many classical works in Latin, especially those of Horace. He also gives a fascinating account of seeing Lord Nelson on the Isle of Wight before he embarked on the HMS Victory prior to the Battle of Trafalgar. He was also a botanist and the fragment of his journal contain three specific plant records:
Thursday 19 September 1805 "went into the paddock [at Petworth] to get *Sedum telephium* to dry but it was all out of flower".
Wednesday 25 September 1805 "went into the pleasure ground to look for fungi – found *Asplenium dilatatum* [probably *Dryopteris dilatata*] which I have brought home and dried". The pleasure ground was a wild garden, walled on one side, to the north of Petworth House.
Saturday 5 October 1805 "went in a boat to Wiggonholt and brought back four plants of *Butomus* [*umbellatus*] which I planted in the pond". Wolley-Dod (1937) records *Butomus* from Petworth as "(introduced?)", and attributes the record to F. H. Arnold. This record is not listed in Arnold's (1887) *Flora of Sussex*.

The records for *Sedum* and *Butomus* predate the first localised records for Sussex given by Wolley-Dod (1937). Sockett is not mentioned in *British and Irish herbaria* (Kent & Allen 1984) and no herbarium specimens are known to survive. Arnold's herbarium at Christ's Hospital, Horsham (**HSM**) does not contain any of Sockett's specimens.

ORCHIS SIMIA IN SUSSEX

Wolley-Dod (1937) gives a record for *Orchis simia* "Petworth, Sussex, 1801, Mr Sokot, in F. Bauer's drawings of British orchids, pp. 69–70. This is the only record known and is no doubt a good one, though the species has never been recorded since in Sussex". This 'Mr Sokot' must refer to Thomas Sockett, the spelling being a corruption by Bauer.

Franz Bauer (1758–1840) was Kew's first botanical artist and was outstanding (Stewart & Stern 1993). His original drawings are held in the Botany Library at the Natural History Museum, London. The *Orchis simia* illustration is annotated at the bottom in black ink "Mr Sokot from Petworth, Sussex, June 4 1801". Other drawings are annotated in pencil, and the annotation appears to have been added at a later date.

There is no doubt about the identity of the drawing of the *Orchis simia*, but the origin of the plant is another matter. The most obvious reading of the wording in light of what is now known about Sockett is that it is he, and not the *Orchis simia*, that was from Petworth. Petworth is in the middle of the Weald, and the nearest suitable calcareous soils occur on the South Downs. Arnold (1864, 1887) makes no reference to the plant, which would surely have been of sufficient note for Sockett and he to have discussed in relation to Petworth. Unfortunately it has not been possible to trace where Sockett or the Egremont family were at the time the orchid was collected. The record of *Orchis simia* for Sussex is therefore rejected.

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