

BOTANICAL SOCIETY OF THE BRITISH ISLES

# WELSH BULLETIN

*Editors : R. D. Pryce & G. Hutchinson*

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Publication date of last BSBI Welsh Bulletin (No. 80) - June 2007.

**ABSTRACTS OF EXHIBITS SHOWN AT THE 25th BSBI  
WELSH EXHIBITION MEETING, SWANSEA UNIVERSITY,  
SWANSEA JULY 2007**

**EXHIBITS:**

**A GLABROUS VARIETY OF *CERASTIUM DIFFUSUM***

ARTHUR CHATER, Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ

[The full text of the note and a coloured photo form a separate article in this Bulletin.]

**PLANTLIFE WALES:** A series of new information leaflets for species in the Back from the Brink programme have been produced and a selection of them was displayed. These leaflets aim to give succinct information on the biology, ecology and distribution of these species, along with advice on how to identify them, how to survey populations and how to manage them if they are on your land. They are aimed principally at landowners, land managers and other individuals and organisations that have these rare species on their land. The leaflets displayed were for: *Campanula patula*, *Centaurea cyanus*, *Cephalanthera longifolia*, *Chamaemelum nobile*, *Dianthus armeria*, *Galeopsis angustifolia*, *Hypericum linariifolium*,

*Lycopodiella inundata*, *Pilularia globulifera*, *Ranunculus tripartitus*, *Salvia pratensis*, *Scandix pecten-veneris*, *Silene gallica* and *Valerianella ramosa*.

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**A VASCULAR RED DATA LIST FOR WALES:** Preliminary results were presented from an assessment of the levels of threat that face the entire Welsh flora. This analysis will result in the publication of *A Vascular Plant Red List for Wales* to be published in early 2008. The analysis uses the same criteria to assess threat as used in the new GB Red List and so direct comparisons will be drawn between the two, such as the proportion of species that are threatened (fewer in Wales), the proportion in each threat category (more Critically Endangered taxa in Wales for example) and the number of extinct species (higher in Wales).

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#### **ALLOPOLYPLOID SPECIATION IN *CALLITRICHE*.**

RICHARD GORNALL, K. JOHNSON, & T. SCHWARZACHER, Dept of Biology, University of Leicester, University Road, Leicester LE1 7RH

***COTONEASTER* AROUND SWANSEA BAY:** 27 taxa have been named of which 13 have been found in the wild (\*\*); see alphabetical list below. Undoubtedly others await discovery. Some duplicate material was displayed and photocopies of the taxa were also shown. Details of the main sites of interest around Swansea Bay were given, which includes Mumbles Hill; Clyne Gardens, Blackpill; Clyne Valley; Swansea University; Singleton Park Rhododendron Garden; Singleton Park; Singleton Park Gardens (also called Singleton Botanic Gardens); Cwmdonkin Park; Victoria Park and Kilvey Hill.

Check-list: *C. bullatus*\*\*, *C. congestus*\*\*, *C. dielsianus*\*\*, *C. 'Exburyensis'*, *C. frigidus*\*\*, *C. frigidus* hybrid\*\*, *C. glaucophyllus*, *C. henryanus* 'Salmon Spray' (*C. x watereri* 'Salmon Spray'), *C. hjelmqvistii*\*\*, *C. horizontalis*\*\*, *C. 'Hybridus pendulus'* (= *C. dammeri* x *C. salicifolius*), *C. ignotus*, *C. induratus*, *C. integrifolius*\*\*, *C. lacteus*, *C. mairei*\*\*, *C. rehderi*, *C. salicifolius*\*\*, *C. salicifolius* 'Pink Champagne', *C. salicifolius* hybrid\*\*, *C. simonsii*\*\*, *C. x suecicus* 'Skogholm', *C. turbinatus*, *C. x watereri*\*\* (= *C. frigidus* x *C. salicifolius*), *C. x watereri* 'Cornubia', *C. x watereri* 'St Monica'

An updated check-list for *Cotoneaster* (NMW) was also displayed [The full list can be found separately in this Bulletin where it has been further updated to Dec 2007].

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**SWANSEA BAY, GOWER GUIDES AND TOURIST INFORMATION:** The latest publication about the area: *Swansea Bay... The Coastal Route*, launched only the previous weekend, was displayed, together with some of the editions of *A Guide to Gower*. Also shown were prints of photos taken locally, but in the 1850s, included in the publication *John Dillwyn Llewellyn - pioneer photographer*; one showing his eldest daughter Thereza looking down the microscope. Current tourist information literature for the area was also displayed.

4Site Education, Swansea Museum Service (2001). *John Dillwyn Llewellyn - pioneer photographer*. City and County of Swansea.

Strawbridge, D. (2007). *Swansea Bay... The Coastal Route*. The Gower Society, Swansea.

Strawbridge, D. & Thomas, P.J. (1999, etc.). *A Guide to Gower*. The Gower Society, Swansea.

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**BSBI SCOTTISH OFFICER 2005/6 ANNUAL REPORT.  
BSBI SCOTLAND VICE-COUNTY RECORDER WORKSHOP.  
BSBI SCOTTISH NEWSLETTER, 2007. NO. 29.  
BEN LUI SSSI SITE CONDITION MONITORING: VASCULAR PLANTS.**

All: JIM W. McINTOSH, BSBI Scottish Officer, c/o Royal Botanic garden, Edinburgh EH3 5LR. [For further information see BSBI website (BSBI.org.uk/Scotland)]

**GLYNHIR MEETING HIGHLIGHTS 2007** (poster): A poster of photographs with brief captions reporting the most memorable events of the 2007 Glynhir week which included the refinding of *Carex montana* at Castell Du SSSI near Ammanford, new discoveries of *Euphorbia serrulata* and *Juncus ambiguus* on shingle by the River Tywi at Llanwrda and Dryslwyn respectively, *Carex punctata* and *Scleranthus annuus* near Amroth and *Hymenophyllum tunbrigense* and *Dryopteris aemula* in the Eastern Cleddau valley near Efailwen. The moodiness of the photographs reflected the often heavy, ominous grey cloudscapes and rain characteristic of the week!

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**THE GLYNHIR FRINGE, 2007** (photographic exhibit): A series of photographs showing the 'fringe' activities held during the evenings of the 2007 Glynhir week. These included two recitals by Chris Cheffings, Graeme Kay, Mary and James Iliff of works for bassoon and double-bass by Iliff and Telemann and for piano by Iliff and Scarlatti. Other events depicted included the bat-recording evening led by Rob Colley and the hand-held computer, data capture demonstration by Steve Rhodes.

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**Other exhibitor:** Summerfield Books.

**WORKSHOPS:**

Arthur Chater: *Polygonum aviculare* group in Wales.

Arthur Chater: Identification of Cereal Crops.

John Poland: Vegetative Identification: *Chenopodium / Atriplex* (CHAT) Key.

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**A GLABROUS VARIETY OF *CERASTIUM DIFFUSUM***

*Cerastium diffusum* Pers. (Sea Mouse-ear) is an extremely variable plant. It can be dwarf to very robust; the stems can be prostrate, ascending or erect, and simple or branched; and plants can be eglandular to densely glandular, and the amount of glandulosity can vary on different parts of the plant. The leaves vary in shape, and can sometimes be very thick and fleshy. The flowers can be 4-merous or 5-merous. Much of this variation is clearly genetic, and for example one often finds whole populations with either 4-merous or 5-merous flowers, but some of it, for example the fleshiness of the leaves, may well not be. Several infraspecific taxa have been described, but the characters used to define most of them seem not to be well enough correlated for the taxa to be confidently identified.

In May 1960, Peter Benoit found a small colony of completely glabrous plants in dry, sandy dune grassland by the Borth promenade in north Cardiganshire (v.c. 46). He took seed and grew it on, depositing two of the resulting specimens in **NMW** the following year. I have often searched for this colony in recent years, but without success. In April 2007 however I found a colony of glabrous plants in the Ynys-las dunes SN60509359, some 3km further north (see photo); this colony was c.20 x 5m, consisted of both 4-merous and 5-merous

plants, and was mixed with normal pubescent plants, with no sign of any intermediates. As can be seen in the photo, the glabrous plants have a very distinctive appearance, usually rather shiny and reddish-tinged. Three more colonies were later found elsewhere in the dunes, and then another at what was almost certainly Benoit's original site at Borth SN60789097, as well as another one further south in Borth.

There seems to be no other record of glabrous plants in Britain, and it certainly seems conspicuously absent from the rest of Cardiganshire where *C. diffusum* is very common all along the coast. The only record of it elsewhere seems to be from Châtelailon, Charente Maritime, in south-west France where it was found on shingle by the sea by J. Foucaud in 1889 (*Comptes-rendus. Société botanique rochelaise* **10**: 26 (1889)), and was described by G. C. C. Rouy as *Cerastium tetrandrum* var. *glabrum* Rouy in Rouy & Foucaud, *Flore de France* **3**: 218 (1896). The epithet has not to date been transferred to *C. diffusum*, but the required new combination will probably be made in due course in Sell & Murrell's Flora.

Whether this plant is worth recognising as a variety is debatable, but it would be interesting to know if other colonies do exist. Its frequency over three tetrads in Cardiganshire makes it at least of local interest.

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### ANGLESEY PLANTS IN 2007

In April visits were made with Plantlife to assess the population of *Ranunculus tripartitus* (Three-lobed Crowfoot) at three of its Anglesey localities – a cold and wet task; but with some plants found at each locality. There was no lack of water, but a shortage of open mud - it is difficult to achieve the right level of grazing and trampling to suit this plant.

Also in April a visit to the seemingly natural looking woodland by the Menai Strait, near Llanfair Pwll, revealed new records of clearly well established introductions beneath the canopy, including the bamboos *Sasa palmata* (Broad-leaved Bamboo), *Phyllostachys bambusoides* & *Phyllostachys viridiglaucescens*, also several patches of *Pulmonaria officinalis* (Lungwort) and *Rodgersia podophylla* (Rodgersia).

A number of visits were made to assess the flora of Rhuddlan Fawr, under consideration by the North Wales WT as a 17ha extension to the west of their Cors Goch reserve. In addition to further areas of fen are areas of limestone grassland and rock, with new populations of *Orchis morio* (Green-winged Orchid), *Ophioglossum vulgatum* (Adder's-tongue) and *Polypodium cambricum* (Southern Polypody). Fortunately the Trust has successfully completed the purchase and is now planning the future management requirements.

An evening visit to the fen at Rhos y Gad saw Jane Rees find *Catabrosa aquatica* (Whorl-grass), a plant with few recent Anglesey records. It was growing quite extensively along the line of a former ditch.

Summer visits to look at the aquatic flora of the RSPB's Malltraeth Marsh reserve were hampered by high water levels, but useful populations of *Oenanthe fistulosa* (Tubular Water-dropwort) and *Stellaria palustris* (Marsh Stitchwort) were re-confirmed, together with plentiful *Elatine hydropiper* (Eight-stamened Waterwort) in one of the pools.

The wet summer seemed to suit other species, with flower-spikes of *Spiranthes spiralis* (Autumn Lady's-tresses) being much more plentiful than usual in its sand dune locations at Aberffraw and Rhosneigr, and over 1200 plants of *Tuberaria guttata* (Spotted Rock-rose) at Porth Diana, the highest count for eighteen years.

Probably the most interesting record of a native species was the discovery by Ivor and Jane Rees of *Ruppia cirrhosa* (Spiral Tasselweed) from the Inland Sea (see below).

IAN BONNER, Cae Trefor, Tyn y Gongl, Anglesey LL74 8SD

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### ***RUPPIA CIRRHOSA* (SPIRAL TASSELWEED) ON ANGLESEY (V.C. 52)**

There are currently about five locations for *Ruppia maritima* (Beaked Tasselweed) around the Anglesey coast and it was first recorded by Hugh Davies (1813); but no mention of the related *Ruppia cirrhosa*. The first reference was in the report of a survey of the Cefni saltmarsh, carried out in 1966-67 by Packham & Liddle (1970), *Ruppia cirrhosa* was recorded "in streams running through the marsh from the Rock Ridge" compared to *R. maritima* in saltpans near the sea. However this record seems to have been ignored or overlooked by botanists at that time and was not picked up, for example, by R. H. Roberts in his *Flowering Plants and Ferns of Anglesey* (1982).

Indeed Ellis (1983) lists only three records: Swansea (v.c. 41) pre1900, Dwyrdd Estuary (v.c. 48) 1971 and Afon-wen (v.c. 49) 1897. These are repeated in the New Atlas, Preston *et al.* (2002), which shows the nearest post-1987 records to be from Strangford Loch in Northern Ireland and from Lady's Island Lake & Tacumshin brackish lagoons behind a shingle ridge in Co. Wexford.

This September I accompanied Jane and Ivor Rees at low tide to the Inland Sea where, just north of Four Mile Bridge, *Ruppia* was locally quite frequent in an extensive bed of *Zostera* (Eelgrass). The water was about 30cm deep and the *Ruppia* plants were discharging pollen onto the water surface, so even at this stage the peduncles were quite long. We collected specimens in as advanced a stage of fruiting as we could find and these were confirmed as *R. cirrhosa* by C.D. Preston. One specimen has been deposited at the National Museum of Wales and a second specimen (see photo), has been retained by IRB.

In fact this was not the first confirmed record, as discussions between Ivor Rees and the CCW Marine Survey team (Robert Cook, Tom Stringell & Bill Saunderson) indicated that in August 2006 they had collected and retained a specimen of a tasselweed from the lagoon at Cemlyn, which on examination was also clearly *Ruppia cirrhosa*.

Also with re-kindled enthusiasm I have looked again at specimens collected from the Inland Sea in 2001, and labelled as *R. maritima*; but which on fresh examination also include probable *R. cirrhosa*, although the fruits are slightly too immature to be certain.

Further searches around the Inland Sea found plenty of *Ruppia maritima*, usually in shallow water, or on muddy sand irrigated by water draining from the adjacent shore; but there were other plants from slightly deeper channels that could not clearly be assigned to either taxon, because although they had long peduncles, the fruits were not fully mature, so the fruit stalks might elongate further.

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The differences between the two species do not seem very clear cut. Although Preston (1995) listed several vegetative differences, he concluded that all the features were insufficiently marked to be relied upon for identification. The only sure way is to look at material with mature fruits: in *R. maritima* the peduncles are usually 8-26mm long and 0.5–1.8 times as long as the longest fruit stalk, and in *R. cirrhosa* the peduncles are usually 40-300mm long and 2-10 times as long as the longest fruit stalk.

In compiling his vegetative flora John Poland (verbal communication) also agrees that he was not able to differentiate the taxa using vegetative characters.

Although pure speculation it appears that pedicel length may be linked to water depth and the characteristic coiling of the pedicel an adjustment to varying water depths over the flowering period. It would be interesting to hear from others with more knowledge and experience about tasselweeds, or perhaps for this to be tested by someone looking for a project using molecular and morphological methods!

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### *PARENTUCELLIA VISCOSA*

Little did I think that I would write a note for the *Welsh Bulletin* but Stephen Evans (County Recorder for Pembrokeshire) thought I should, so after having a chat with Dr. Charles Hipkin of Swansea University, I thought I'd have a go:

A few years ago, Tony was botanising in Charles Hipkin's square looking for *Filago vulgaris* (Common Cudweed) and found *Parentucellia viscosa* (Yellow Bartsia) on a brownfield site: the old railway sidings at Jersey Marine, Swansea, a site which Tony and Charles were both monitoring. This site is now partly developed with new houses.

At some time or other the car wheel must have picked up some seed because this year (2007) one plant has germinated where the rear nearside wheel would have come to rest on our driveway at Cannisland Park. The car hasn't been there for twelve months so the plant has had a chance to grow without constantly being run-over. The upshot is — don't park your car in exactly the same place all the time! I've had instructions from Stephen Evans on how to keep it growing.

VIV LEWIS, Cannisland Park, Parkmill, Gower

**COTONEASTER TRANSENS (GODALMING COTONEASTER) NEW TO WALES**

The full record can be read on the herbarium label (*see front cover of this Bulletin*).

The main shrub became conspicuous from the footpath in Sept 2005 with its plentiful dark fruit, some with a whitish bloom. Away from the path at the rear of this 3.5m high Cotoneaster there was clear evidence of self-seeding with a few stems scattered amongst the dense *Juncus* and with some already managing to fruit (seen 2007).

Identification of the plant was undertaken by first producing a lateral key of the 'black-fruited' Cotoneaster from keys, descriptions and illustrations that were readily at hand (e.g. Stace, 1997 & Fryer & Hylmö, 1995). Field note details were compared regarding growth habit, fruit shape and colour (noting the time of year) and stone number and shape; also leaf vein indentation and overall colour to the upper and underside of mature leaves. One could measure later the shape and size of typical leaves, and check under the microscope for pubescence primarily on the underside of the leaves again bearing in mind the time of year collected and whether examining young or mature leaves. Flowers were not present on this occasion (25 Sep).

On the main plant one of the key features was the younger leaf underside being pubescent, including the midrib and margin, but the mature leaves becoming glabrous indicative of *C. transens* (hairs persisting on leaf surface in *C. affinis*, and hairs only on the midrib and sparse in *C. bacillaris*). This also appeared to be so when NMW material of the three species was examined under the microscope. A more subtle feature was the whitish bloom on some of the fruit which rubbed off to give an almost black-fruited Cotoneaster. The bloom is reported for *C. transens* and *C. bacillaris* but sparser in the former. Evidence of the bloom remained on drying.

In detail: mature leaf undersides were glabrous on leaves below the fruiting areas of branches. However, the underside of young leaves above the fruiting area of the branch, and on non-fruiting branches had clearly pubescent midribs and margins with some hairs on the surface underside. Whitish lateral venation to the underside of the younger leaves showed up prominently under the microscope but had turned quite dark on older leaves. Refereeing was then sought from Jeanette Fryer to whom one is extremely grateful.

The localities where the species has previously been recorded in the British Isles are confined to the south-eastern part of England. In the vice-counties listed by C. A. Stace (1997), namely S. Hants, Beds, W. Kent and Surrey, habitats were: 'edge of ride in conifer plantation', 'waste ground', 'in chalk quarry' and 'on bank at sand pit' resp. (J. Fryer, pers. comm.). Although somewhat diverse they are typical of where birds are likely to shelter or feed, or where any introduced plants would have time to self-seed. Bearing this in mind, in Cardiff, the marshy ground into which it is spreading is sheltered by the high embankment of the A48 road and the raised embankment of the A4161 link road to it from Newport Road, with tree-lined and wooded surrounds. Also it is close to a tidal area of the River Rhymney.

To the south-west of the population is dense *Rubus* and elsewhere rank *Juncus effusus* (Soft-rush) and *J. articulatus* (Jointed Rush) containing some *Filipendula ulmaria* (Meadowsweet) and *Lythrum salicaria* (Purple-loosestrife), with *Phragmites australis* (Common Reed) nearby. One plant of *Spartium junceum* (Spanish Broom) grows in close proximity, and diagonally across the footpath is a small shallow pond created for wildlife.

The only other specimen of the species at NMW is cultivated material from C. G. Hanson, Ware, Herts. coll. 1.6.2001 (in flower ) and 3.10.2001 (in fruit) from seed Strasbourg Botanic Gardens via J. Fryer (originally as *C. wattii*), redet. J. Fryer 2.2002. The species is native to the Yunnan province of south-western China, one of the richest areas for the genus in the World, and was first described in 1968 (G. Klotz). Its systematic position in the genus *Cotoneaster* has changed from Series Insignes to Series Hebephylli as botanists have acquired increasing knowledge of the genus. Genetic work like that of Bartish, Hylmö and Nybom (2001 & 2006) may shed more light.

'Black-fruited' *Cotoneaster* are rarely found in Wales, the only other well reported species being *C. affinis* (Purpleberry) from near Plwmp, (Cards., v.c. 46) SN35 'Dominant in hedges on both sides of road, including many self-sown bushes' coll. initially by M. Evans Nov 1978 det. J. Fryer 1993 NMW (A. O. Chater, 1995). A specimen collected by Mrs A. M. Pell earlier in the autumn of 1978 is probably from this population.

Similarly, in a survey (by GH) of planted *Cotoneaster* across most of the parks and gardens open to the public in industrial South Wales in the early 1990s, from Llanelli in the west to Pontypool and Cwmbran in the east and Merthyr Tydfil in the north, only one *Cotoneaster* with 'black-fruit' present was encountered, planted in the border shrubbery adjoining the SW corner of Roath Park Lake, Cardiff and remaining unidentified; but young non-fruiting plants of *C. ignotus* (Black-grape *Cotoneaster*) were found planted in the 'Rhododendron Garden', Singleton Park, Swansea (det. J. Fryer).

For info: The Howardian Nature Reserve, Cardiff was one of the first examples of a statutory nature reserve established on a former domestic refuse site. Established in 1973 and associated with the former Howardian High School it was declared a local nature reserve in 1991. Some of the relict estuarine vegetation survives but is decreasing. Initially there was much growth of *Salix cinerea* x *S. viminalis* and *S. caprea* x *S. viminalis* (conf. R. D. Meikle, NMW) which has since been cleared. An enthusiastic group of local residents formed a Friends' Group in 1989 who work with the Council to further improve the reserve and it is now more known in June for its abundant population of *Ophrys apifera* (Bee Orchid) and mixed populations of *Dactylorhiza* (Marsh-orchid). A good network of paths weave between the great variety of habitats, packed with interesting flora and fauna as I have discovered over the years.

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CHECK-LIST OF *COTONEASTER* AT NMW (DEC 2007)

- \*\* Recorded from the wild in Wales.      **new** new to NMW since last list (2002).
- C. acutifolius* var. *villosulus* (*see C. villosulus*)      *C. frigidus* hybrid\*\*
- C. adpressus*      *C. froebelii* **new**
- C. affinis*\*\*      *C. glaucophyllus*
- C. ambiguus* (*C. laetivirens*)      *C. giraldii* **new**
- C. amoenus*      *C. glabratus* **new**
- C. antoninae*      *C. glacialis* (*C. nivalis*) **new**
- C. apiculatus*      *C. griffithii* (*see C. cooperi*)
- C. assamensis* **new**      *C. harrovianus*
- C. astrophoros*      *C. harrismithii*
- C. atropurpureus*      *C. henryanus*
- C. atropurpureus* 'Variegatus'      *C. henryanus* 'Salmon Spray'
- C. atrovirens*      (*see C. x watereri* 'Salmon Spray')
- C. auranticus* **new**      *C. henryanus* hybrid
- C. bacillaris*      *C. hersianus* **new**
- C. boisianus*      *C. hissaricus*
- C. bradyi*      *C. hjelmqvistii*\*\*
- C. bullatus*\*\*      *C. horizontalis*\*\*
- C. bullatus* 'Bergianum' **new**      *C. horizontalis* 'Variegatus'
- C. bullatus* 'Firebird' (*see C. ignescens*)      (*see C. atropurpureus* 'Variegatus')
- C. buxifolius* [needs conf.]      *C. hsingshangensis* (redet. of *C. ichangensis*
- C. calocarpus* 'Elegans' **new**      specimen) **new**
- C. cambricus* (*C. intergerrimus*)\*\*      *C. hummelii*
- C. cashmiriensis*      *C. hupehensis* **new**
- C. cinerascens* **new**      *C. 'Hybridus pendulus'*\*\*
- C. cochleatus*      (= *C. dammeri* x *C. salicifolius*)
- C. congestus*\*\*      *C. hylmoei*
- C. congestus* 'Seattle' (*C. 'Seattle'*) **new**      *C. ichangensis* (*see C. hsingshangensis*)
- C. conspicuus*\*\*      *C. ignavus* **new**
- C. conspicuus* 'Highlight'
- (probably *C. pluriflorus*)      *C. ignescens* (*C. bullatus* 'Firebird'; *C. 'Firebird'*)
- C. cooperi* (*C. griffithii*; *C. obtusus*) **new**      **new**
- C. 'Cornubia'* (*see C. x watereri* 'Cornubia')
- C. x crispaii* **new**      *C. ignotus*
- C. cuspidatus*      *C. induratus*
- C. dammeri*      *C. insculptus*
- C. dammeri* 'Major'
- C. dielsianus*\*\*      *C. insignis* (*C. ellipticus*; *C. lindleyi*) **new**
- C. distichus* (*see C. nitidus*)      *C. integrifolius*\*\*
- C. divaricatus*      *C. integerrimus* (*C. vulgaris*)
- C. 'Eastleigh'* (*see C. schlechtendalii*)      *C. juranus* **new**
- C. elegans* **new**      *C. kingdonii* **new**
- C. ellipticus* (*see C. insignis*)      *C. kitaibelii* **new**
- C. 'Exburyensis'* **new**      *C. kweitschoviensis*
- C. fangianus*      *C. lacteus*\*\*
- C. 'Firebird'* (*see C. ignescens*)      *C. laetivirens* (*see C. ambiguus*)
- C. flinkii* **new**      *C. langei* **new**
- C. floccosus* (*C. salicifolius* var. *floccosa*)      *C. lidjiangensis*
- C. forrestii* **new**      *C. lindleyi* (*see C. insignis*)
- C. foveolatus*      *C. lomahuensis* (*C. poluninii* aff. = Yu 10391) **new**
- C. franchetii*\*\*      *C. lucidus*
- C. series Franchetiioides* **new**      *C. ludlowii* **new**
- C. frigidus*\*\*      *C. mairei*\*\*
- C. frigidus* f. *fructuluteo* **new**      *C. marginatus*
- C. marquandii*
- C. marroninus* **new**
- C. megalocarpus* **new**

- C. microphyllus*  
*C. microphyllus* aff.  
*C. monopirenus*  
*C. moupinensis*  
*C. mucronatus*  
*C. multiflorus*  
*C. nanshan*  
*C. nebrodensis* (probably *C. tomentosus*)  
*C. niger*  
*C. nitens*  
*C. nitidus*  
*C. nivalis* (*see C. glacialis*)  
*C. nohelii*  
*C. obscurus*  
*C. obscurus* var. *cornifolius* **new**  
*C. obtusus* (*see C. cooperi*)  
*C. oliganthus* **new**  
*C. otto-schwarzii* **new**  
*C. ovatus* **new**  
*C. series Pannosi*  
*C. pannosus*  
*C. parkeri* (*C. x parkeri*) **new**  
*C. pekinensis*  
*C. pe-tsen* **new**  
*C. plurifolius* (incl. *C. permutatus*) **new**  
*C. poluninii* aff. (*Yu10391*)  
(*see C. lomahuensis*)  
*C. prostratus*  
*C. prostratus* 'Eastleigh'  
*C. przewalskii* **new**  
*C. pseudoambiguus*  
*C. rehderi*\*\*  
*C. roseus* **new**  
*C. reticulatus*  
*C. rotundifolius*  
*C. rubens*  
*C. rugosus* **new**  
*C. salicifolius*\*\*  
*C. salicifolius angustifolius* **new**  
*C. salicifolius* 'Autumn Fire'  
(*see C. salicifolius* 'Herbstfeuer')  
*C. salicifolius* var. *floccosa*  
(*see C. floccosus*) **new**  
*C. salicifolius* f. *fructuluteo*  
*C. salicifolius* 'Gnom'  
*C. salicifolius* 'Gracia'  
*C. salicifolius* 'Herbstfeuer'  
(*C. sal.* 'Autumn Fire')
- C. salicifolius* 'Parkteppich'  
*C. salicifolius* 'Pink Champagne'  
*C. salicifolius* 'Repens'  
*C. salicifolius* - small-berried var.  
*C. salicifolius* - small-leaved var.  
*C. salicifolius* - yellow-berried var.  
*C. salicifolius* cvs  
*C. salicifolius* hybrid\*\* **new**  
*C. salwinensis*  
*C. schantungensis* **new**  
*C. schlechtendalii* (*C.* 'Eastleigh') **new**  
*C.* 'Seattle' (*see C. congestus* 'Seattle')  
*C. serotinus* **new**  
*C. shannanensis* **new**  
*C. shansiensis* **new**  
*C. sherriffii*  
*C. sikangensis* **new**  
*C. simonsii*\*\*  
*C. splendens*  
*C. sternianus*\*\*  
*C. x suecicus* (= ?*C. dammeri* x *C. conspicuus*)  
*C. x suecicus* 'Coral Beauty'  
*C. x suecicus* '?Jurgl'  
*C. x suecicus* 'Skogholm'\*\*  
*C. taofuensis* **new**  
*C. tengyuehensis*  
*C. thymifolius*\*\* **new**  
*C. tomentosus* **new** (*see also nebrodensis*)  
*C. transens*\*\* **new**  
*C. turbinatus*  
*C.* 'Valkenburg' [Series *Sanguinei*]  
*C. vandelaarii* **new**  
*C. veitchii*  
*C. verna* **new**  
*C. vestitus* (*C. glaucophyllus* var. *vestita*)  
*C. villosulus*\*\* (*C. acutifolius* var. *villosulus*)  
*C. vilmorinianus* **new**  
*C. wardii*  
*C. x watereri*\*\* (= *C. frigidus* x *C. salicifolius*)  
*C. x watereri* 'Cornubia'  
*C. x watereri* 'Exburyensis'  
*C. x watereri* 'Salmon Spray'  
*C. x watereri* cvs\*\*  
*C. wilsonii* **new**  
*C. yui*  
*C. zabelii*  
*C.* with RBGE numbers (several) **new**

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