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NEW NOMENCLATURAL COMBINATIONS IN *PERSICARIA* (L.) MILLER AND A NEW HYBRID NAME IN *RUMEX* L. (POLYGONACEAE)

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Abstract: New varietal combinations within native and adventive species of *Polygonum* in Europe and a new hybrid name for *Rumex crispus* × *R. rupestris* are published, with notes on their taxonomy and distribution.

Keywords: Nomenclature, docks, knotweeds, hybrids, Britain, Ireland, Europe, BSBI handbook

Introduction

The forthcoming second edition of the illustrated handbook to *Docks and Knotweeds of Great British and Ireland* [7] necessitates new nomenclatural combinations for names currently unavailable in *Persicaria* (bistorts and knotweeds), mainly at varietal rank, and a new hybrid name in *Rumex* (docks and sorrels). Although the proposed new handbook, to be published by the Botanical Society of Britain and Ireland (BSBI), is based on the native, naturalized and casual taxa of Polygonaceae in the British Isles, it has wider application in Europe. For example, Romania and Britain share nine of the twelve native European species of *Persicaria* found in one or both countries, although *P. orientale* L. (casual) and *P. alpina* All. (naturalized) are only adventive in Britain; and 16 of the 18 native European species of *Rumex* found in one or both countries, seven of which are naturalized or casual in Britain, but just two of which, *R. longifolius* DC. and *R. rupestris* Le Gall, do not occur in Romania [11].

In Europe, *Persicaria* (*Polygonum* sect. *Persicaria* (Miller) DC.), if separated from *Polygonum* sensu lato, can be divided into six sections: *Persicaria*, *Amblygonon*, *Cephalophilon*, *Echinocaulon*, *Bistorta* and *Aconogonon*, following the taxonomic treatment of Ronse Decraene and Akeroyd [12]. Subsequent studies of achenes have indicated that sections *Aconogonum* and *Bistorta* share particular features and may constitute another genus with two sections [13]. Conversely in the forthcoming BSBI handbook, as in *Flora Europaea*, *Rumex* is retained as a single genus divided into four clearly defined subgenera: *Acetosa*, *Acetosella*, *Rumex* and *Bucephalophorus* [11]. Some authors have recognized these as separate genera, but I prefer to follow tradition and practical expediency.

1. *Persicaria*

Floral characters and other evidence indicate strongly that botanists should adopt *Persicaria* (L.) Miller, which includes persicarias, bistorts and related species, as a genus distinct from *Polygonum* [12]. This well-marked distinction has been recognized in some recent European Floras, *Med-Checklist* and *Flora of North America*, although not in *Flora of China*. *Flora Nordica* and *Flora of North America* have gone further, and treat *Bistorta* as a separate

genus. However, Professor D.A. Webb (1912–94), family editor of Polygonaceae for the revised *Flora Europaea* volume 1 [18], made the pragmatic decision to retain a conservative treatment of *Polygonum* sensu lato in Europe.

Persicaria hydropiper (L.) Delarbre var. **densiflora** (A. Braun) Akeroyd, **comb. nov.**

Basionym: *Polygonum hydropiper* L. var. *densiflorum* A. Braun, Flora (Regensburg), 7 (1): 352. 1824.

This variant is taller, more robust and branched than var. *hydropiper*, with broader, less wavy-margined leaves and denser inflorescences, many arising from the leaf-axils, with flowers in larger clusters of 3–6. These characters fit Braun's original diagnosis: "β *densiflorum mihi*, elatum, spici terminali cylindrica densa, floribus axillaribus confertis." The leaves taste less acrid than those of var. *hydropiper*.

Var. *densiflora* is apparently widespread in Britain [14], and probably across the range of *P. hydropiper* in Europe, where the species is widespread apart from much of the Mediterranean region. Floras all too rarely record intraspecific variants, but *Flora RP Romania* (Grinţescu & Prodan in Săvulescu, 1952), which well describes this variety, notes records from Valea Plecica and Valea Morii in Cluj county, and from the River Vidra at Comana near Bucharest. It is listed from Hungary by Soó [15].

Sell & Akeroyd [14] described the features of *Polygonum hydropiper* var. *densiflorum* and listed herbarium specimens, some going back a century, from 14 vice-counties in England, Wales, Scotland and the Isle of Man (British and Irish 'vice-counties' used for botanical recording follow for the most part the administrative county boundaries). These and subsequent records show this variant to be widely scattered throughout Britain, up as far as the most northern parts of the islands. There is a black-and-white photograph by A. Gagg of this rather distinctive plant on the inside back cover of *Nature in Cambridgeshire* 37 (1995), relating to its occurrence in the Cambridgeshire fens [17].

Sell & Akeroyd [14] cited specimens of var. *densiflora* from three vice-counties in southern Scotland: Dumfries (v.c.72), Dumbarton (v.c.79) and Midlothian (v.c.83). Other vice-county records, based on specimens I have examined in the herbarium of the Royal Botanic Garden, Edinburgh (**E**), extend the known range of this taxon to northern Scotland:

Kirkcudbright (v.c.73) Auchencairn, weed in cultivated field, 1.9.1969, J. Anthony 4131; Moray (v.c.95) Elgin tip (38/2863), waste heaps, 4.10.1975, M. Mc. Webster, and near Brodie Station, carrot field, 14.10.1963, M. Mc. Webster; Angus (v.c.90) Sidlaw Hills, near Loch Long, damp ditch by farm, 15.9.1946, J. Sinclair 2590; Main Argyll (v.c.98) Carry Point, Tighnabruaich, 9.1967, M. McC. Webster; Ross (v.c.106) Black Isle, Gordonsmills, damp arable field, 13.9.1971, U. Duncan.

In Northern Ireland, Hackney [4] cited records from Counties Down (v.c.38), Antrim (v.c.39) and Derry (v.c.40), and there are voucher specimens from several of these localities in the herbarium of the Ulster Museum, Belfast (**BEL**). I have seen one other Irish specimen of var. *densiflora*: "In stream drain of grazed field, west of Kilmichael, Mid-Cork (v.c. H4), 1.10.1982", collected by the late Maura Scannell (**DBN**). However, it is likely that var. *densiflora* occurs over much of Ireland, although overlooked.

In Britain, var. *densiflora* is frequently associated with cultivated land, perhaps reflecting more nutrient-rich soils. It would be a simple and instructive experiment to raise plants of var.

densiflora and var. *hydropiper* from seed under garden conditions to determine whether the diagnostic characters of the two variants, as described by Sell & Akeroyd [14] persist in cultivation. Nor should the possibility of var. *densiflora* being of hybrid origin be entirely discounted, in view of the observations of Parnell & Simpson [9], who refuted in part the conclusions of Timson [16] that *Persicaria* species rarely, if ever, hybridize. Indeed, the widespread (but still rare) hybrid between *P. maculosa* Gray and *P. lapathifolia* (L.) Delarbre (*P.* × *pseudolapathum* (Schur) D.H. Kent), was described originally from Transylvania (Basionym: *Polygonum* × *pseudolapathum* Schur, Enum. Pl. Transs., 584. 1866).

Persicaria minor (Huds.) Opiz var. **latifolia** (A. Braun) Akeroyd, **comb. nov.**

Basionym: *Polygonum minus* Hudson var. *latifolium* A. Braun, Flora (Regensburg), 7(1): 359. 1824

Syn.: *Polygonum minus* Hudson var. *elatum* Fries, Nov. Fl. Suec. Mantissa, 2: 32. 1849.

This variant, analogous to *P. hydropiper* var. *densiflora* as a plant of richer soils in marshy ground, is more upright and robust, with lanceolate rather than the typically linear-oblong to linear-lanceolate leaves of var. *minor* (*cf.* Braun: "γ *latifolium mihi*, elongatum, foliis majoribus lanceolatis floribusque pallidioribus"). It can easily be confused with *P. dubium* (Stein) Fourr., but the small achenes 1.8–2.3 mm long (2.8–3.5(–4) mm long in *P. dubium*) are diagnostic. The flowers of *P. minor* can be crimson, pink or whitish, whereas those of *P. dubium* are slightly larger and a distinctive, rather attractive purplish-pink colour.

Persicaria minor and *P. dubia* do occasionally form hybrids. Parnell & Simpson [9], who carried out a biometric study of extensive mixed *Persicaria* populations on the shores of Lough Neagh in Northern Ireland, found several hybrids between these two species. The hybrids show significant reduction of pollen stainability.

Described originally from a swampy wood near Karlsruhe in SW Germany, var. *latifolia* is scattered in Britain and undoubtably occurs elsewhere across the European range of the species, which extends from Boreal Europe south to N. Spain and Macedonia. Hegi's *Illustrierte Flora von Mitteleuropa* lists this variant and notes "nicht selten". Var. *latifolia* is recorded from Hungary [15].

Persicaria maculosa Gray var. **biformis** (Wahlenb.) Akeroyd, **comb. et stat. nov**.

Basionym: *Polygonum biforme* Wahlenb., Fl. Suec., 1: 242. 1824.

Syn.: *Persicaria maculosa* var. *elata* (Gren. & Godr.) D.H. Kent, nom. illeg.

This conspicuous variant of *P. maculosa* from cultivated land is much larger and more branched, with broader leaves and numerous more elongated spikes.

Persicaria maculosa Gray var. **ruderalis** (Meisn.) Akeroyd, **comb. nov.**

Basionym: *Polygonum persicaria* L. var. *ruderale* Meisn. in DC., Prodr., 14 (1): 118. 1856.

Syn.: *Polygonum ruderale* Salisb., Prodr. 259 (1796), nom. illeg.

This variant of *P. maculosa* from dry places such as roadsides, railway-tracks and waste ground is shorter, more divaricately branched and often prostrate, with leaves 1–4 cm long and shorter flower-spikes that are broader in relation to their length.

These two variants of a widespread polymorphic weed of cultivation, which is also a plant of lakesides and other semi-natural habitats, require further study but are probably merely environmentally induced phenotypes best retained at varietal rank. In this judgement I am in agreement with the late Peter Sell (P.D. Sell, pers. comm., via P.H. Oswald), with whom I had many discussions on the taxonomy of Polygonaceae.

Persicaria amplexicaulis (D.Don) Ronse Decr. var. **speciosa** (J.D. Hook.) Akeroyd, **comb. nov.**

Basionym: *Polygonum speciosum* Meisn., Monogr. Gen. Polygoni Prodr. 66. 1826.

Syn.: *Polygonum amplexicaule* D.Don var. *speciosa* (Meisn.) J.D. Hook., Fl. Brit. India 5: 33. 1890.

The variable Himalayan species *Persicaria amplexicaulis* is widely naturalized from gardens in Britain and Ireland, especially in S. and S.W. England. All these records (P.D. Sell, pers. comm., via P.H. Oswald) can be referred to var. *speciosa*, which has deep purplish-red or red wine-coloured flowers, which Hooker also described as slightly larger. Var. *amplexicaule* has red, greenish-white or white flowers. Other varieties of *P. amplexicaule* in cultivation are discussed by Armitage [1], who regards var. *speciosa* as falling within the variation of var. *amplexicaule*. However, its flower colour is consistent and distinctive for naturalized populations.

Persicaria wallichii Greuter & Burdet var. **pubescens** (Meisn.) Akeroyd, **comb. nov.**

Basionym: *Polygonum polystachyum* Wall. ex Meisn. var. *pubescens* Meisn. in Wall., Plantae Asiaticae Rariores 3: 61. 1832.

Persicaria wallichii, from the Himalayas and W. China, is widely naturalized from gardens in C. and N.W. Europe, especially Ireland, Britain and N.W. France. Var. *pubescens*, which has hairy leaves, ochreae and peduncles, is frequent in Britain, especially West Wales, but its distribution elsewhere in Europe is not known.

2. *Rumex*

Docks (*Rumex* L. subgenus *Rumex*) hybridize promiscuously. The hybrids are intermediate in morphology between their putative parents, notably in leaf-shape, architecture of the panicle and the shape and toothing of the accrescent fruiting perianth-segments or valves. Hybrids can readily be recognized in the field by the irregularly developed or withered, often reddish valves. Fertility is low and the flowers have a high proportion of shrivelled pollen grains and achenes, indicating partial or complete sterility.

Since the 1980s, in the capacity of BSBI referee for *Rumex*, from late summer and early autumn each year I have received numerous hybrid specimens to determine, and we now have a much fuller picture of the hybrid docks in Britain and Ireland than was available to J.E. Lousley (1907–76), a gifted amateur botanist – by profession a bank manager – who was for many years the UK authority on this genus. Not only do native species of *Rumex* subgenus *Rumex* form a series of hybrids, but also in Britain at least four naturalized adventives from Europe (*R. confertus* Willd., *R. cristatus* DC. and two subspecies of *R. patientia* L.) have been found to hybridize with native species. Another adventive species, *R. frutescens* Thouars, from South America, also hybridizes with native British docks.

The hybrid *Rumex crispus* L. × *R. rupestris* Le Gall was recognized and even described by Lousley [7] but, perhaps because of limited herbarium material, it has long lacked formal nomenclature. The selected type comprises two sheets (Holotypus et Isotypus) in Lousley's herbarium at the University of Reading. This material is analogous to a lectotype, as Lousley never named the hybrid but left the information required. I therefore provide a holotype and diagnosis.

Rumex x **celticus** Akeroyd, **hybr. nov.** (*R. crispus* L. × *R. rupestris* Le Gall)

HOLOTYPUS: Rumex crispus L. × R. rupestris Le Gall. In a dune slack with parents, Kenfig [Burrows], Glamorgan (v.c. 41), 29 August 1948, J.E. Lousley (ex Herbario J.E. Lousley, **RNG**).

Planta inter *Rumex crispi* et *R.rupestri* quasi intermedia, plerumque cum fructibus abortivis vel aliquando ab valvis ambiti lati *R.crispi* sed cum apici lingulate et tuberculis grandissimis elongatis *R.rupestri* valde differt.

A robust perennial, much-branched plant, regenerating in late summer from the base and nodes of the stems. Leaves lanceolate, somewhat crisped. Flowers largely infertile but producing a few fruits, these irregular in size but with 3 well-developed tubercles. Valves (fruiting perianths) having the broad outline of those of *R. crispus* but with the more ligulate apex and very large, elongate tubercles of *R. rupestris*, the margins entire or with 1–2 indistinct teeth.

This rare hybrid is known only from Britain: Isles of Scilly (v.c. 1b) [7], Pendower Beach in East Cornwall (v.c. 2) (O. Stewart 277/82, 13 September 1982, **E**, fide JRA) and sand-dunes at Kenfig Burrows, Glamorgan (v.c. 41) in South Wales, and almost certainly from Penhale Camp in West Cornwall (v.c. 1), although the parentage was unclear [5].

It is likely that hybridization involves *R. crispus* subsp. *littoreus* (Hardy) Akeroyd, a characteristic ecotypic variant with dense infructescences, large subequal tubercles on the valves (fruiting perianths) and larger achenes, which is widespread in coastal plant communities, especially on sand and shingle beaches. Another Lousley specimen (Rumices Britannicae Exsiccatae 268, **RNG**) collected 24 July 1939 from Porthellick, Isles of Scilly, and labelled Rumex crispus L., with "× rupestris Le Gall" added in pencil in Lousley's handwriting, is similar to *R.crispus* subsp. *littoreus* but with extremely well-developed tubercles on the valves and some branches with low fertility. This may be one of the "curious plants which occur in the presence of rupestris in Scilly and Glamorgan" [6]. Similar material from Kenfig Dunes, Glamorgan, collected 26 August 1938 (Rumices Britannicae Exsiccatae 156, **RNG**), again labelled R. crispus L., is also close to *R.crispus* subsp. *littoreus* but with well-spaced whorls of fruits, sometimes a feature of *R. rupestris*. These specimens, resembling robust plants of *R. crispus*, but with three exceptionally large, elongate ovoid tubercles similar to those of *R. rupestris*, suggest that despite hybrids being largely infertile, some introgressive hybridisation may occur.

Rumex rupestris is one of Europe's – and Earth's – rarest docks, an endemic species restricted to damp places on upper seashores, seepages at the base of sea-cliffs, and wet places in sand-dunes, scattered along the coasts of N.W. Spain (Galicia), N.W. France (especially Bretagne), the Channel Isles, SW England (especially Isles of Scilly) east to Dorset, and Wales [2, 10]. The new hybrid epithet *celticus* reflects this distribution along the NW Atlantic seaboard of Europe, where this hybrid is perhaps more widespread but rare. In Britain *Rumex rupestris* has declined or disappeared from many known sites during the last 50 years.

The precise parentage of *Rumex* hybrids is difficult to ascertain and has traditionally relied on empirical judgements based upon morphological characters and the presence of one or both putative parents. There is plentiful scope for further research on these taxa, especially the population genetics of hybridization events and introgressive hybidization, as well as the existence of triple species hybrids, employing molecular techniques now familiar and widely available to taxonomists.

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NOI COMBINAŢII NOMENCLATURALE ÎN CADRUL GENULUI *PERSICARIA* (L.) MILLER ŞI UN NOU HIBRID AL GENULUI *RUMEX* L. (POLYGONACEAE)

(Rezumat)

Articolul publică noi combinaţii de soiuri ale speciilor native şi adventive de *Polygonum* din Europa şi o denumire nouă de hibrid - *Rumex crispus* × *R. rupestris*, cu detalii despre taxonomia şi distribuţia acestora.

ERRATA CORRIGE:

In the printed version of this paper '*Persicaria* Miller' should read '*Persicaria* (L.) Miller' in the title and body text on page 15 as well as in the title translated into Romanian on page 21.