
This impressive volume is the first of a proposed three. The second will illustrate the diversity within and between species with photographs taken in the field. The third will deal with phylogeny and evolution.

The present volume comes with full scholarly apparatus; it is not for the botanically faint-hearted. It deals only with the wild species, with only brief mention of cultivation, largely historical, and nothing on artificial hybrids or cultivars arrived at by selection. The concept of species is morphological; molecular studies are mentioned but presumably the results of DNA work will be saved for the third volume. A particular feature of the discussion is the study of wild populations and their distribution. The maps showing the distributions of the species are very informative, and details of important localities are given. The field studies result in an emphasis on the wide variation found in most populations, in obvious characters such as colour of petals, but also in subtle features such as the different kinds of "hairiness", to use a deliberately imprecise term, on leaves, stems and carpels. Hong finds that most of the single characters relied on by previous authors for specific determination are too variable to be relied upon. Thus many described species are reduced to synonymy. This aspect may well prove controversial.

So what is there in this for gardeners who love peonies? It surely behoves us to take an informed interest in the biology of the plants we grow, and their ancestors. I am not competent to undertake a specialist botanical review, but I will pick out some of Hong's conclusions that affect plants that many of us know, or think we do. I have used Martin Page's 2005 book for comparison, also comments in seed lists from Will McLewin and the late, much lamented, Jim Archibald, in the absence of formal publications from these authorities. As these are not scientific publications they are not referred to by Hong, but many of us have used them as sources of expert information.

Hong divides the genus *Paeonia* into three sections: section Moutan (woody or "tree" peonies, all from China), section Onaepia (the two species confined to North America) and Section Paeonia, the rest of the herbaceous peonies, occurring on Europe, north Africa and Asia, I shall not discuss the first two sections. Section Paeonia (22 species) is divided into three subsections, each of which contains species that many of us grow. Beware of my simplifications; you need the monograph for exceptions, ifs and buts. I shall mention only the commoner species.

Subsection Albiflorae (literally "white-flowered"; applies to many not all of them) includes *Pp. lactiflora, emodi*, and *anomala*; mostly from east Asia, though *anomala* extends into Russia. The subsection is characterized by having carrot-shaped roots, mostly smooth foliage with elongated leaflets, and generally several flowers per stem.

A notable decision here is to treat *P. veitchii* as a subspecies within *P. anomala*, as suspected by McLewin (seed list 2008 and earlier).
One of the few comments on cultivars states that all cultivated lactiflora peonies are doubles. This may be so in China, but not in the west, where many singles are grown.

Subsection Foliolatae (literally "broad leaved") includes *Pp. mascula*, *cambessedessii*, *broteri*, *clusii*, *corsica* and *oriacea* from Europe and adjacent Africa. *P.daurica* mostly from the Caucasus, Turkey and Iran, and *Pp. obovata* and *mairei* from east Asia. Roots are carrot shaped, lower leaflets usually 9 up to 21 (more in *broteri* and *clusii*), flowers solitary and terminal.

*P. mascula* has four subspecies, of which only ssp. *mascula* has the familiar red or pink flowers. *P. mascula* russoi as defined here is confined to Sicily and southern Calabria. It, as well as ssp. *hellenica* and *bodurii*, is said to have mainly white flowers. Plants called ssp. *russoi* are quite widely grown and valued for their dwarf habit, bronzy foliage and early flowering, but those I have seen have all been pink flowered. I do not know their provenance. Archibald's 2008 seed list offered *mascula* ssp. *russi* from Sardinia, which according to Hong would probably make it the separate species (little known in gardens?) *P. corsica*. I suspect the poor gardener will have to wait and see.

*P. daurica* becomes a broad species; comments below.

*P. japonica* is included in synonymy in *P. obovata*.

Subsection Paeonia. This is the subsection Dissectifoliae in Page, which term is usefully descriptive, less the species here separated as Albiflorae on root and floral characters. It includes *Pp. officinalis*, *peregrina*, *arietina* and *tenuifolia*. Lateral roots are tuberous or fusiform, lower leaves with leaflets divided to many (21 to 340) segments, flowers solitary and terminal. The species are variously distributed from southern Europe to western China.

*P. arietina* is moved here from the *mascula* group because it has tuberous roots and dissected foliage, as in Page. *P. tenuifolia*, which has been variously subdivided, is treated as a single species. Hong recognizes five subspecies within the widely distributed *P. officinalis*, which is Linnaeus' type species of the genus *Paeonia*.

Perhaps the most intriguing result of Hong's work is his radical revision of the peonies in the Foliolatae we have been accustomed to call *Pp. mlokosewitschii*, *witmaniana*, *tomentosa*, *macrocarpa*, *caucasica* and *triternata* in various combinations of species and subspecies, as all being part of a wider species of which the valid name is *P. daurica*. The species ranges from the Balkans to northern Iran, and from Syria to southern Russia, with greatest diversity in the Caucasus region. This was foreshadowed in an earlier paper on Caucasian peonies, as noted in this Newsletter by David Victor (Spring 2006). Hong's claim is that all the populations he studied are highly variable, and that although differences between them exist no set of characters is so consistent as to warrant separation at species level. For instance, *P. macrophylla* was established as a distinct species mainly on account of its large leaflets, but according to Hong this character is within the range of leaflet size in other subspecies of *P. daurica*. On this kind of evidence he recognizes seven subspecies: *daurica*, *coriifolia*, *macrophylla*, *mlokosewitschii*, *tomentosa*, *velebitensis* and *witmaniana*. The distinctions given in Hong's keys are subtle; you need a hand lens and a dictionary of botanical terms. Other names that have been applied to this group of peonies, either as species or subspecies, are reduced to synonymy within these seven. *P.triternata* (often regarded by others as a subspecies of *P. mascula*), becomes *P. daurica* *daurica*. *P. caucasica*, *P. ruprechtiana* and *P.
kavachensis (of some authors) are included in ssp, coriifolia. P.steveniana is in ssp. macrophylla. P. lagodechiana is in ssp. mlokosewitschii.

Some of these taxa are distinct in horticultural terms, or at least have been thought to be so. Certainly the best known is P. mlokosewitschii. It is well known to gardeners that plants grown from seed, or purchased in the hope of obtaining the classic yellow form, often turn out to be various shades of pink. This has been noted in the wild population before, as quoted in the McLewin and Archibald seed lists, and is confirmed by Hong’s work. The supposedly separate species lagodechiana, with pink flowers, is part of this variation, and so, it seems possible, is the "hybrid" xChameleon (not mentioned by Hong). This has been supposed to be natural cross between mlokosewitschii and caucasica (daurica ssp. coriifolia), though it seems doubtful that they occur together. Chameleon is known to be variable (e.g. as noted by Page, and in our own experience). Hong acknowledges that mlokosewitschii is rather distinct from the other subspecies, geographically as well as in appearance, and many will regret its demotion.

Of the other subspecies of Hong, wittmanniana, tomentosa and macrophylla are white or cream flowered. All are high-altitude forms, and all tetraploid. They correspond to what has been informally called the P. wittmanniana group or complex, in which the past usage of names has been inconsistent. If you grow any of these, you expect it to be a big plant with white or near-white flowers.

The remaining subspecies are red or pink, and the former P. triternata is probably the best known of them. People will continue to value its distinctive leaves. The distinction between this and pink forms of P. mascula appears subtle, at least in horticultural terms.

An article in the Autumn 2010 newsletter (Hudson, Porter, Templar and Zaki) gives notes on our own experience with some of these peonies, and in the same issue Judy Templar illustrates some peonies from Iran.

Whatever views botanists may take, it is clear that they will have to engage seriously with Hong’s monograph, and serious gardeners can study it with profit too. At the very least, it makes you look carefully at your species peonies, and wish you knew more about where they came from. I often can't even remember where I bought mine, still less their wild provenance.

I thank Judy Templar for many hours of discussion.

John Hudson