



The sixth edition of the *Nouvelle Flore de la Belgique*: nomenclatural and taxonomic remarks

Filip VERLOOVE^{1*} and Jacques LAMBINON²

¹ Botanic Garden Meise, Nieuwelaan 38, B-1860 Meise, Belgium

² Université de Liège, Institut de Botanique, Sart Tilman, B-22, B-4000 Liège, Belgium

* author for correspondence: filip.verloove@br.fgov.be

Samenvatting. – De zesde editie van de *Nouvelle Flore de la Belgique*: nomenclatorische en taxonomische commentaren. Naar aanleiding van de publicatie van de zesde editie van de *Nouvelle Flore*, in 2012, biedt deze bijdrage een overzicht van nomenclatorische en taxonomische wijzingen ten opzichte van de vorige editie van de Flora, die dateert van 2004.

Résumé. – La sixième édition de la *Nouvelle Flore de la Belgique* : mises au point nomenclaturales et taxonomiques. A l'occasion de la publication de la sixième édition de la *Nouvelle Flore*, en 2012, cette contribution donne un aperçu des mises au point nomenclaturales et taxonomiques vis-à-vis de l'édition précédente de la Flore, qui était publiée en 2004.

Introduction

To continue a long tradition nomenclatural and taxonomic modifications, introduced in the latest edition of the *Nouvelle Flore* (Lambinon & Verloove 2012), are presented in this paper.

Since the publication of the 5th edition of the *Nouvelle Flore* (Lambinon *et al.* 2004; further abbreviated as NF5) much has changed. Molecular data have considerably altered standard classifications and have been applied in several different modern western European floras (e.g. van der Meijden 2005; Stace 2010). In 2009 the Angiosperm Phylogeny Group published a new update of their classification (APGIII 2009). The broad outline of the system remained unchanged, but the number of previously unplaced families and genera was significantly reduced. Unfortunately, in the 6th edition of the *Nouvelle Flore* (further abbreviated as NF6) it has not been possible yet to apply these changed familial and generic concepts. However, a table of correspondence was presented in which standard and modern (i.e. essentially based on molecular data) classifications are compared. Moreover, in numerous cases where recent molecular phylogenetic studies have affected generic circumscriptions, relevant alternative names were added as synonyms. In some cases (e.g. *Anagallis*, *Lysimachia*, *Salicornia*, Orchidaceae) the classification was already adjusted to molecular data.

In recent years, our knowledge of non-native plants in the territory covered by the *Nouvelle Flore* has been much improved (e.g. Verloove 2006). The number of newly introduced taxa has continued to increase and several of these recent introductions have naturalized. NF6 provides not less than 56 supplementary alien taxa in the keys and full accounts for these taxa.

Finally, the publication of the Vienna Code in 2006 (International Code of Nomenclature for algae, fungi, and plants; available online at: <http://www.iapt-taxon.org/icbn/main.htm>) resolved several nomenclatural matters.

Abbreviations

The following abbreviations referring to phytogeographical districts (Fig. 1) are frequently used throughout the paper (for further details, see Lambinon & Verloove 2012: XXV-XXVII):

- Ard. (district ardennais): Ardenne district
- Boul. (district boulonnais): Boulogne district
- Brab. (district brabançon): Brabant district
- Camp. (district campinien): Campine district
- Champ. (district champenois): Champagne district
- Eifel centr. (district de l'Eifel central): central Eifel district
- Fl. (district flandrien): Flemish district
- Fluv. (sous-district fluviale): fluviale district
- Lorr. (district lorrain): Lorraine district
- Mar. (district maritime): maritime district
- Mosan (district mosan): Maas/Meuse district
- Pic. (district picard): Picard district
- Tert. Par. (district du nord-est de l'Ile-de-France): Paris Basin district

In the *Nouvelle Flore* these abbreviations are often used in combination with cardinal directions:

- sept(entrional): northern
- or(iental): eastern
- mér(idional): southern
- occ(idental): western

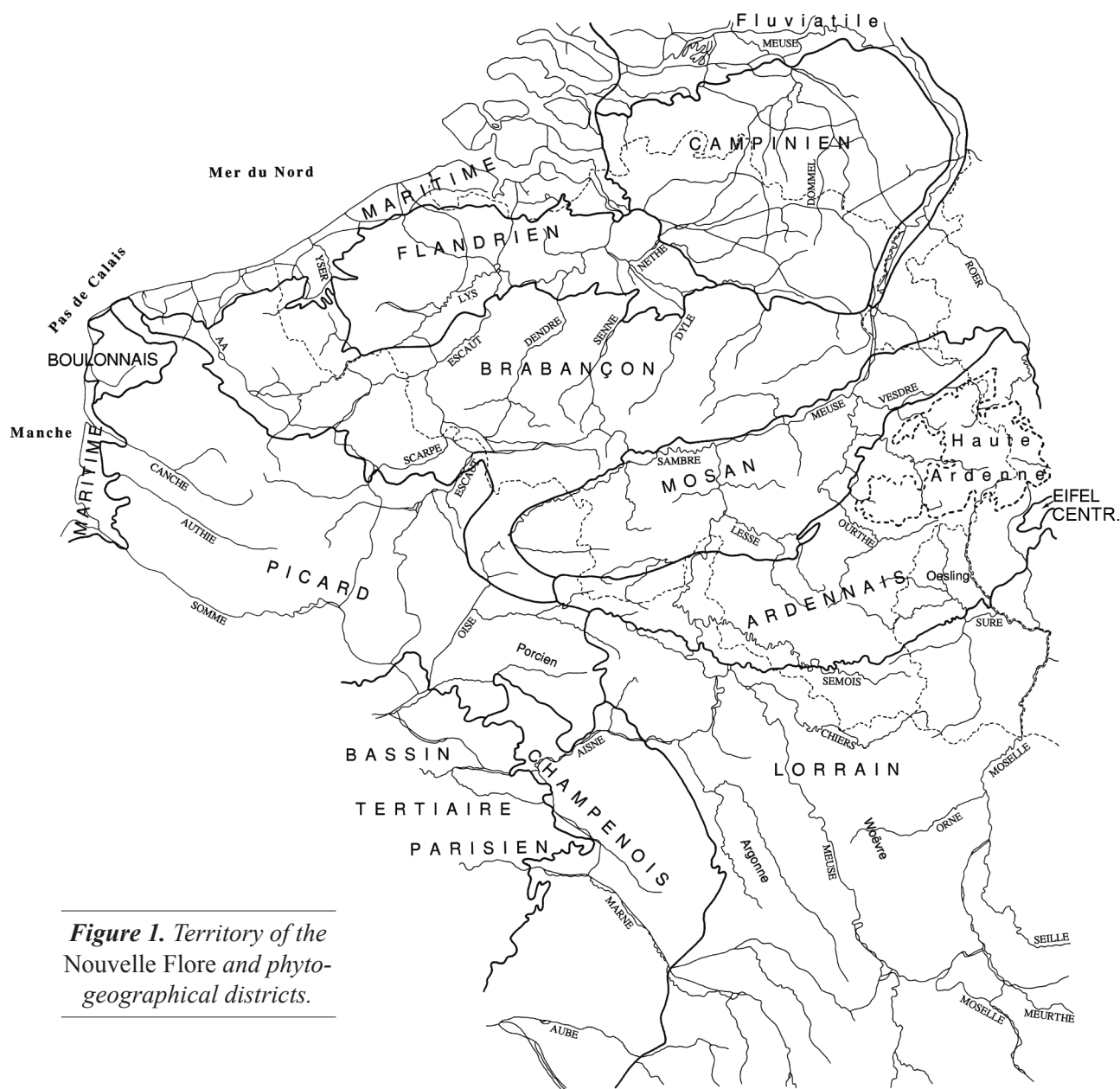


Figure 1. Territory of the Nouvelle Flore and phytogeographical districts.

E.g. 'Mar. mér.' = southern maritime district.

Two further abbreviations:

- *AFB*: Atlas Flanders and Brussels (*Atlas van de Flora van Vlaanderen en het Brussels Gewest*, Van Landuyt *et al.* 2006).
- *AFF*: Atlas Flandre française (*Flore de la Flandre française*, Toussaint *et al.* 2008).

Comments

- 11 – *Equisetum* × *trachyodon* A. Braun [*E. hyemale* L. × *variegatum* Schleich.; syn.: *E. ×mackayi* (Newman) Brichan]: an additional hybrid *Equisetum* L., discovered in 2007 in Etalles (Lorr. sept.) (A. Bizot & B. Pétremont, *Adoxa* 61: 14-21, 2009; id., *Adoxa* 64: 1-5, 2010). From

the very same locality a second hybrid, *E. ×moorei* Newman (*E. hyemale* × *ramosissimum* Desf.), was also reported (A. Bizot & B. Pétremont, *Adoxa* 64: 1-5, 2010). The latter parent being unknown from this district, this record at first appeared to be surprising but its identity in this and several other localities was subsequently confirmed by morpho-anatomical and cytological studies (B. Pétremont *et al.*, *Bull. Soc. Natur. Luxemb.* 113: 83-90, 2012).

- 11-12 – *Equisetum hyemale* L.: in addition to native subsp. *hyemale*, an American variant is increasingly cultivated as an ornamental (mainly for pond margins). It is more vigorous, with stems often exceeding 2 m and leaf sheath teeth that are longer persistent. Such plants belong to subsp. *affine* (Engelm.) Calder et R.L. Taylor var. *robustum* (A. Braun) A.A. Eaton (syn.: *E. robustum*

A. Braun), a taxon that tends to naturalize in the area of the *Nouvelle Flore* (J. Saintenoy-Simon, *Adoxa* 46/47: 65, 2005).

- 12 – *Equisetum variegatum* Schleich. [*Ann. Bot. (Usteri)* 21: 124, 1797] is a *nomen nudum*, subsequently validated by Weber and Mohr in 1807; hence the correct author citation appears to be “Schleich. ex Weber et D. Mohr”. However, this point of view is not followed, or merely neglected, in recently published important floras (cf. *Fl. Europaea* (ed. 2), *Fl. Nordica*, *Fl. North Am.*, etc.). This problem requires re-evaluation.

- 18 – *Adiantum* L.: two supplementary species, and an additional genus, are introduced in the key in NF6: *Adiantum capillus-veneris* L. and *A. raddianum* C. Presl have been recorded in urban habitats in Fl. and Brab. since 2001 and seem to persist well in climatologically favourable habitats: basement walls, sewers, ruins, etc. (e.g. R. Van der Ham & F. Verloove, *Gorteria* 28: 139-141, 2002; F. Verloove *et al.*, *Dumortiera* 92: 1-16, 2007).

- 18-19 – *Pteris* L. (*Pteridaceae*): two supplementary species (and an additional family) are introduced in the key in NF6: *Pteris cretica* L. and *P. multifida* Poirét have been recorded in urban habitats in Fl. since 2001 and seem to persist well in climatologically favourable habitats: basement walls, sewers, ruins, etc. (F. Verloove *et al.*, *Dumortiera* 92: 1-16, 2007). Records of the former are all referable to var. *albolineata* Hook., a taxon that perhaps merits species rank (and that then should be called *P. nipponica* W.C. Shieh).

- 24 – *Asplenium* × *murbeckii* Dörfler [*A. ruta-muraria* L. × *septentrionale* (L.) Hoffmann] is a supplementary hybrid, newly discovered in Kaltenbach (Oesling; Ard. or.) (G. Colling & Y. Krippel, *Bull. Soc. Natur. Luxemb.* 103: 4, 2003).

- 30 – *Rumohra adiantiformis* (Forster) Ching: found as an escape from cultivation in 1993 (F. Verloove, *Catal. Neoph. Belg.*: 73, 2006).

- 32 – *Polystichum tsus-simense* J. Smith: found as an escape from cultivation on an old garden wall in Ghent in 2006 (F. Verloove *et al.*, *Dumortiera* 92: 1-16, 2007).

- 32 – *Polystichum setiferum* (Forssk.) T. Moore ex Woy-nar: the author citation needed to be improved (e.g. C.A. Stace, *New Flora Brit. Isles*, 3rd ed.: 32, 2010).

- 32-34 – *Cyrtomium* C. Presl (*Dryopteridaceae*): two new species and a new genus are introduced in the key in NF6: *Cyrtomium falcatum* (L. f.) C. Presl and *C. fortunei* J. Smith have been recorded in urban habitats in Fl. since 1998 and seem to persist well in climatologically favourable habitats: basement walls, sewers, ruins, etc. (e.g. F. Verloove *et al.*, *Dumortiera* 92: 1-16, 2007 ; R. Fontaine & J. Saintenoy-Simon, *Adoxa* 57: 27-28, 2007).

- 35 – *Dryopteris* × *complexa* Fraser-Jenkins [*D. affinis* (Lowe) Fraser-Jenkins × *filix-mas* (L.) Schott]: the presence of this hybrid in the territory covered by the *Nouvelle Flore* has long been debated. According to some au-

thors (e.g. *AFB*) it is probably “not rare” where-ever both parents grow together. However, its genuine occurrence in the area of the *Nouvelle Flore* was only recently confirmed from the Grand Duchy of Luxembourg (Y. Krippel *et al.*, *Bull. Soc. Natur. Luxemb.* 110: 43-52, 2009).

- 35 – *Dryopteris cycadina* (Franch. et Sav.) C. Christens.: found as an escape from cultivation on a basement wall in Ghent in 2006 (F. Verloove *et al.*, *Dumortiera* 92: 1-16, 2007).

- 36 – *Dryopteris affinis* (Lowe) Fraser-Jenkins subsp. *cambrensis* Fraser-Jenkins: populations of this subspecies in the territory of the *Nouvelle Flore* belong to var. *insubrica* Oberholzer et Tavel ex Fraser-Jenkins. Subsp. *stillupensis* (Sabr.) Fraser-Jenkins is a synonym of subsp. *borreri* (Newman) Fraser-Jenkins and needed to be removed from the synonymy of subsp. *cambrensis*.

- 36 – *Dryopteris affinis* (Lowe) Fraser-Jenkins subsp. *pseudodisjuncta* (Tavel ex Fraser-Jenkins) Fraser-Jenkins [syn.: *D. pseudodisjuncta* (Tavel ex Fraser-Jenkins) Fraser-Jenkins]: a fourth subspecies of *Dryopteris affinis* was recently recorded in the territory of the *Nouvelle Flore* [C.R. Fraser-Jenkins, *Fern Gaz.* 18(1): 1-26, 2007]. It requires further study.

- 40 – *Salvinia auriculata* Aubl.: cultivated as an ornamental and sometimes found as an escape (so far in Brab. only) but apparently not persisting.

- 41 – *Azolla filiculoides* Lam.: in addition to this species, a second one was formerly collected in the Dutch part of the territory of the *Nouvelle Flore*. It was usually referred to as *Azolla mexicana* C. Presl but there appears to be an earlier valid name, *A. cristata* Kaulf. (C. Evrard & C. Van Hove, *Syst. Geogr. Pl.* 74: 301-318, 2004).

- 50 – *Pinus ponderosa* Dougl. ex Lawson et C. Lawson: introduction in the key of an additional species of *Pinus* L. that is sometimes planted in forestry (timber production) and that rarely has been observed as an escape from cultivation as well (for instance in Hallerbos near Brussels in 2010).

- 54 – *Chamaecyparis nootkatensis* (D. Don) Spach: molecular and cladistic studies have shown that this species is better accommodated in a segregate genus, *Xanthocyparis* Farjon et Hiep [A. Farjon *et al.*, *Novon* 12(2): 179-189, 2002]. Its corresponding name in this genus [*X. nootkatensis* (D. Don) Farjon & D.K. Harder] is added as a synonym in NF6.

- 55 – *Taxus baccata* L.: a recent monograph of the genus *Taxus* L. [R. Spjut, *Journ. Bot. Res. Inst. Texas* 1(1): 203-289, 2007] accepts *T. fastigiata* Lindl. (Irish Yew) as a distinct species. This binomial is added as a synonym in NF6 [of *T. baccata* var. *stricta* Lawson; syn.: var. *fastigiata* (Lindl.) Loud.]. This taxon is frequently cultivated as an ornamental and has been recorded as an escape as well in the territory of the *Nouvelle Flore*.

- 56-57 – *Ephedra* L. (*Ephedraceae*): an additional family, genus and two supplementary species are introduced.

Ephedra distachya L., a native of southern Europe but extending north up to Bretagne in France, was already exceptionally recorded on the Belgian coast prior to 1850 (H. Matagne, *Bull. Soc. Roy. Bot. Belg.* 75: 131, 1943). In 1998 a single plant was collected on the beach of Koksijde (Koksijde, Westelijk deel Schipgat, C0.47.44, één exemplaar in de zeereep, adventief of aangespoeld, 01.08.1998, W. Van Landuyt 98-1 GENT). It was not confirmed subsequently. Native status of this species cannot be excluded but seems rather unlikely given the absence of similar records in neighbouring territories. Moreover, *Ephedra distachya* is cultivated as an ornamental which most likely explains its recent occurrence. A second taxon, *E. saxatilis* (Stapf) Royle ex Florin var. *sikkimensis* Royle ex Florin, a native of Central Asia, was also discovered in 1998 (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>): a single large clone grows in coastal dunes in Heist and was recently confirmed. This taxon is also cultivated as an ornamental and the clone from Heist probably represents an established garden throw-out.

- 60 – *Aristolochia macrophylla* Lam.: Molecular studies strongly suggest New World members of the genus *Aristolochia* L. be accommodated in several segregate genera, including *Isotrema* Rafin. (e.g. T. Ohi-Toma *et al.*, *Syst. Bot.* 31: 481-92, 2006). This new taxonomy was not yet applied in NF6 but a synonym in the latter genus was added for convenience [*I. macrophyllum* (Lam.) C. Reed].
- 62-64 – *Nymphaea* L.: in NF5, largely based on J.E. De Langhe & R. D'hose, *Dumortiera* 12: 15-19, 1979, two species were accepted: *N. alba* L., with 2 subspecies [subsp. *alba* and subsp. *occidentalis* (Ostenf.) Hyl.] and *N. candida* C. et J. Presl. According to P. Uotila (*Fl. Nordica* 2: 216-221, 2001) and R. van der Meijden (*Heukels' Flora van Nederland*, 23ste druk, 2005) a reliable separation of the latter from *N. alba* subsp. *occidentalis* is only possible on pollen characters. Moreover, still according to these authors, subsp. *occidentalis* is reduced to synonymy under subsp. *alba*. The taxonomic treatment of this species complex for NF6 was therefore modified and additional distinguishing features (including pollen characters) were included in the key. One variable species (*N. alba*) with three subspecies [subsp. *alba*, subsp. *candida* (C. et J. Presl) Korsh. and subsp. *occidentalis*] are taken into account. All three require further study. Subsp. *occidentalis* – superficially reminiscent of subsp. *candida* – appears to be more closely related to subsp. *alba* (intermediate forms are not rare) and remains a critical taxon. A future study of pollen morphology of all three subspecies could clarify the issue.
- 70 – *Nigella sativa* L.: sometimes seen as an ephemeral alien (F. Verloove, *Catal. Neoph. Belg.*: 63, 2006).
- 72 – *Aconitum lycoctonum* L.: this species was recently typified in the sense of *A. vulparia* Reichenb. s.l. (W. Starmühler, *Ber. Bayer. Bot. Ges.* 71: 99-118, 2001). In NF6 it is accepted in a fairly large sense. Some authors (incl. W. Starmühler l.c.) accept two subspecies [subsp. *ly-*

coctonum and subsp. *vulparia* (Reichenb.) Cesati] that are linked by intermediates (nsubsp. *spetanum* Starmühler). These (notho-) taxa are said to be preferably distinguished on hair type of pedicels and sepals but differences appear to be very subtle. Moreover, their ecology and distribution also seem to be identical. Hence, their taxonomic value is questionable. The author citation of subsp. *vulparia* was also corrected: the combination made by Cesati (1844) predates that of Nyman (1889) (see also K.P. Buttler & R. Hand, *Kochia* 2: 43-49, 2007).

- 73-75 – *Anemone* L.: recent molecular and biosystematic studies suggest the dismantlement of the genus *Anemone* [E. Banfi *et al.*, *Atti Soc. it. Sci. nat. Museo civ. Stor. nat. Milano* 146 (2): 219-244, 2005]. In the territory covered by the *Nouvelle Flore* three species of *Anemone* are preferably transferred to the genus *Anemonoides* Mill. Like in similar cases, this new taxonomy is not followed in NF6 but the corresponding names in the latter genus are provided in the synonymy: *Anemonoides nemorosa* (L.) Holub, *A. ranunculoides* (L.) Holub and *A. sylvestris* (L.) Galasso, Banfi *et al.* Soldano.
- 75 – *Clematis* × *jackmanii* T. Moore (? *C. integrifolia* L. × *lanuginosa* Lindl. × *viticella* L.): cultivated ornamental vine, sometimes seen as an (ephemeral) escape from cultivation (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 85 – *Ranunculus marginatus* D'Urv.: recorded as an ephemeral grain alien in the Ghent port area (F. Verloove, *Dumortiera* 88: 3-4, 2006).
- 90 – *Thalictrum simplex* L.: this species [and more precisely its subsp. *tenuifolium* (Swartz ex Hartm.) Sterner] was formerly recorded in the territory of the *Nouvelle Flore*, but is long extinct. R. Hand (*Bot. Natursch. Hessen*, Beiheft 9, 2001) provides records from Schönecken and Fleringen (Germany) in Eifel centr.
- 92 – *Mahonia aquifolium* (Pursh) Nutt.: as currently understood, as a result of molecular studies, *Berberis* L. includes *Mahonia* Nutt. (Kim *et al.*, *J. Pl. Res.* 117: 175-182, 2004). The latter is merely distinguished by pinnate leaves and the absence of spines. Its separation is artificial and chiefly maintained by horticulturists. The existence of intergeneric hybrids (for instance × *Mahoberberis neubertii* C.K. Schneider, a putative hybrid of *Berberis vulgaris* L. and *Mahonia aquifolium*) also suggests their close relationship. As in similar cases this new taxonomy is not followed in NF6 but the corresponding name in *Berberis* is added as a synonym (*B. aquifolium* Pursh).
- 93-94 – *Macleaya* R. Brown: the exact identity of the representatives of this genus in the territory of the *Nouvelle Flore* requires further study. A majority may turn out to belong to *M. ×kewensis* Turritt [*M. cordata* (Willd.) R. Brown × *microcarpa* (Maxim.) Fedde] rather than to genuine *M. cordata* (although at least one record from Tournai seems to be referable to the latter). Distinguishing features for both are provided in NF6 (see also K. Adolphi *et al.*, *Florist. Rundbr.* 38: 29-37, 2004). Moreover, the

generic name was misspelled in NF5 (*Macleya* instead of *Macleaya*).

- 94 – *Roemeria hybrida* (L.) DC.: the delimitation on morphological grounds of taxa of *Papaver* L. and *Roemeria* Med. is straightforward based on capsule characteristics. However, molecular phylogenetic analyses [J.W. Kadereit & K.J. Sytsma, *Nord. J. Bot.* 12: 205-217, 1992; J.W. Kadereit *et al.*, *Pl. Syst. Evol.* 204: 75-98, 1997; J.C. Carolan *et al.*, *Ann. Bot.* 98(1): 141-155, 2006] demonstrated that *Papaver* is only monophyletic if *Roemeria*, *Stylomecon heterophylla* G. Taylor and *Meconopsis cambrica* (L.) Vig. are included in this genus. Moreover, some of the morphological characters that separate *Papaver* sect. *Argemonidium* (with *P. argemone* L. and *P. hybridum* L.) from the remainder of *Papaver* are shared with *Roemeria*. In fact, section *Argemonidium* is more closely related to *Roemeria* than it is to *Papaver*. *Roemeria* has previously been included in *Papaver* on morphological grounds (K.F. Günther, *Flora* 164: 185-234 and 393-436, 1975). Other authors tend to transfer species of *Papaver* sect. *Argemonidium* to *Roemeria* [C. Morales Torres *et al.*, *Lagascalia* 15 (Suppl.): 181-189, 1988; J.W. Kadereit *et al.*, *New J. Bot.* 1(2): 80-87, 2011]. It is clear that the generic boundaries of *Papaver* are still insufficiently understood. Pending additional studies the genus is accepted in NF6 in a conservative way, relying exclusively on morphological features, but the corresponding synonym of *Roemeria hybrida* in *Papaver* is added [*P. bivalve* (DC.) Günther subsp. *hybridum* (L.) Karlsson].
- 104 – *Ulmus minor* Mill.: the name *Ulmus campestris* L. has a very confused history, having been used for three different species of *Ulmus* in the past. A.T. Whittemore [*Taxon* 57(2): 656-657, 2008] therefore proposed to formally reject this binomial.
- 108 – *Urticaceae* (adventive species): the list with alien species from genera, others than those treated in detail, reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *Laportea aestuans* (L.) Chew, *Pilea hyalina* Henzl and *P. microphylla* (L.) Liebm. (F. Verloove, *Catal. Neoph. Belg.*, 2006).
- 108 – *Urtica* L. (adventive species): *U. membranacea* Poir. ex Savigny has been recorded as an alien in urban habitats (Ghent) (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 109 – *Soleirolia* Gaud.-Beaup.: a supplementary genus and species [*S. soleirolii* (Req.) Dandy] are treated in detail in NF6. The species is cultivated as an ornamental (mostly indoors) and is increasingly reported as an escape from cultivation, especially in climatologically favorable habitats (urban areas, etc.). It has been reported so far from Boul., Fl., Pic. occ. and Brab. and tends to naturalize locally.
- 110 – *Pterocarya* Kunth: a supplementary genus and species [*P. fraxinifolia* (Poir.) Spach] are treated in detail in NF6. The species is cultivated as an ornamental tree

since quite some time and has been known to escape in the valley of river Meuse (NF5). Since 2005, it has been recorded on several occasions in Fl. and Brab. occ. in the valleys of rivers Deûle, Leie and Scheldt as well (F. Verloove, *Dumortiera* 99: 1-10, 2011). It is locally well-established and obviously spreading. The author citation in NF5 ["(Lam.) Spach"] needed to be corrected, the basionym (*Juglans fraxinifolia*) being described by Poir. in Lamarck's *Encyclopedie* (1798). Hence, the correct author citation is "(Poir.) Spach".

- 121 – *Betula pubescens* Ehrh.: the correct author citation for subsp. *carpatica* is "(Waldst. et Kit. ex Willd.) Simonk." (K.P. Buttler & R. Hand, *Kochia* 2: 43-49, 2007). *B. alba* being accepted as a *nomina rejicienda* (Vienna Code) all infraspecific combinations cited in NF5 (e.g. those taken from F. Muñoz Garmendia & J. Pedrol, *Anales Jard. Bot. Madrid* 44: 599, 1987) were removed in NF6.
- 122 – *Phytolacca acinosa* Roxb.: is considered in NF6 in a broad sense as to include all eastern Asian related taxa that are cultivated for ornament (among others *P. esculenta* Van Houtte) (e.g. E.J. Clement & M.C. Foster, *Alien plants of the British Isles*: 37, 1994). The distinction between these taxa is critical and diagnostic features often overlap.
- 122 – *Abronia fragrans* Nutt.: recorded in 1951 as an ephemeral alien, probably an escape from cultivation (F. Verloove, *Catal. Neoph. Belg.*: 25, 2006).
- 122-123 – *Mirabilis jalapa* L.: is still frequently cultivated and increasingly seen as an escape, mainly in urban habitats. A detailed account for this species therefore seemed appropriate and was introduced in NF6.
- 128 – *Minuartia mediterranea* (Link) K. Malý: this species is known since 2004 from urban habitats (foot of walls, brick quays, pavement) in the city of Ghent (F. Verloove, *Dumortiera* 90: 15-18, 2006). Although still present in 2013, it hasn't spread.
- 136 – *Sagina nodosa* (L.) Fenzl.: A. Kurtto (*Fl. Nordica*, vol. 2: 160-163, 2001) distinguishes two subspecies on the basis of hairiness and other minor characteristics, subsp. *borealis* G.E. Crow (syn.: var. *moniliformis* Lange) and subsp. *nodosa*. At least part of the populations in the territory of the *Nouvelle Flore* (e.g. those from the French coast) seem to pertain to the former, characterized by glabrous stems (or at most with scattered glandular hairs at the nodes). However, both taxa seem to be linked by intermediates and Kurtto *l.c.* himself admits that "(...) a large part of the Nordic material cannot be assigned to one or the other of these two variants. This is particularly true for seashore populations, (...)". A closer examination of numerous collections confirms that no infraspecific taxa can be distinguished within the territory of the *Nouvelle Flore*.
- 138 – *Spergula arvensis* L. (infraspecific taxa): V. Cesati (in *Catt., Not. Nat. Civ. Lombardia*: 289, 1844) already validly combined *S. sativa* Boenn. at subspecies rank

under this species, much earlier than Čelakovsky did (in *Prodr. F. Böhmen*: 492, 1875). Moreover, the basionym is of von Boenninghausen, not of Mertens et Koch. The correct author citation for subsp. *sativa* is thus '(Boenn.) Cesati' [syn.: var. *sativa* (Boenn.) Mert. et Koch].

- 140 – *Lychnis chalconica* L. [syn.: *Silene chalconica* (L.) E.H.L. Krause]: in addition to *L. coronaria* (L.) Desr., this species is also cultivated as an ornamental in the territory of the *Nouvelle Flore* (though much less frequently so). In the past years it has been recorded on several occasions as an escape; hence, a formal citation in NF6, accompanied by some distinguishing features, seemed appropriate.

- 140 – *Lychnis flos-cuculi* L.: in the territory of the *Nouvelle Flore* populations occur with very short petals, for example on the verge of salt marshes in Blanche-Eglise (Lorr.). It is unclear whether this dimorphism correlates with habitat or whether it is genetically determined. These populations merit further study, emphasizing also on seed coat structure (see also A. Kurtto, *Fl. Nordica*, vol. 2: 177-179, 2001).

- 140-141 – *Agrostemma githago* L.: in the territory of the *Nouvelle Flore*, this species is now almost confined to ruderal habitats and no longer occurs as a weed of arable fields. In the past years it is also increasingly used in wild flower seed mixtures, as is a similar species that is tentatively ascribed to *A. gracile* Boiss. (see for instance: *Fl. Hellenica* 1: 238-239, 1997). However, the exact identity of these plants (genuine species or merely cultivars?; cf. Ph. Martin & J. Lambinon, *Natura Mosana* 65: 5-16, 2012) will require additional research.

- 142 – *Silene* L. (adventive or ornamental species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *S. coeli-rosa* (L.) Godr. and *S. schafta* S.G. Gmel. ex Hohen. (F. Verloove, *Catal. Neoph. Belg.*: 77, 2006).

- 142 – *Silene italica* (L.) Pers.: this species, superficially reminiscent of native *S. nutans* L., has been recorded on several occasions in the territory of the *Nouvelle Flore* and appears to be locally naturalized (F. Verloove, *Dumortiera* 94: 5-6, 2008). It is most likely introduced in wild flower seed mixtures, for instance for the revegetation of coal mining spoil heaps, in newly sown roadsides and canal banks, etc. A population from Mont St. Quentin near Metz (French Lorr.), discovered in 1995 (M. Renner & N. Pax, *Willemetia* 35: 5-6, 2003), is found in a more natural habitat and was believed to be 'wild'; this, however, seems to be very unlikely.

- 144 – *Silene vulgaris* (Moench) Garcke subsp. *maritima* (With.) Á. et D. Löve: all populations in the territory of the *Nouvelle Flore* (confined to shingle and cliffs in Mar. mér.) are characterized by (nearly) smooth seeds; such plants pertain to var. *montana* (Arrondeau) Kerguélen (seeds clearly tuberculate in var. *maritima*). However, the delimitation and taxonomic value of this variety

may be questionable. *S. montana* Arrondeau was initially described from mountain peaks in Montagnes Noires and Montagnes d'Arrée in western France and these populations have not yet been compared with coastal ones (M. Kerguélen, *E.R.I.C.A.* 10: 10, 1998). Moreover, in *S. vulgaris* subsp. *vulgaris* no correlation between seed morphology, ecology and distribution has been discovered (A. Kurtto, *Fl. Nordica*, vol. 2: 189-191, 2001). This issue requires further study.

- 145 – *Cucubalus baccifer* L.: the correct author citation for *Silene baccifera* (syn.) is '(L.) Durande'. J.F. Durande (*Fl. Bourgogne*, 1782) validly published this combination six years earlier than A.G. Rothius did (*Tentamen florae germanicae*, 1788) (K.P. Buttler & R. Hand, *Kochia* 2: 43-49, 2007).

- 145 – In NF6 *Cucubalus* was still accepted at generic level. Recent molecular studies support its inclusion in a broadly circumscribed genus *Silene* L. (e.g. B. Oxelman *et al.*, *Nord. J. Bot.* 20: 743-748, 2001).

- 146 – *Gypsophila* L. (adventive or ornamental species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species was added: *G. viscosa* Murray (F. Verloove, *Catal. Neoph. Belg.*: 53, 2006).

- 146 – *Petrorhagia nanteuillii* (Burnat) P.W. Ball et Heywood: recorded in 1992 as an ephemeral alien in the Antwerp port area (F. Verloove, *Catal. Neoph. Belg.*: 67, 2006).

- 147 – *Dianthus* L.: some additional species have been recorded as escapes from cultivation in the territory of the *Nouvelle Flore* in recent years: *D. giganteus* d'Urv. and *D. subcaulis* Vill. (F. Verloove, *Catal. Neoph. Belg.*: 44, 2006). At least the former is more or less naturalized on coal mining spoil heaps in the surroundings of Mons and Charleroi (e.g. Hornu, 23.05.1993, F. Verloove 915, BR, LG).

- 147 – *Dianthus superbus* L.: the possibility of two subspecies being present in the territory of the *Nouvelle Flore* was already suggested in NF5. Recent studies (G.H. Parent, *Adoxa* hors-série 2: 14 et 44, 2004; S. Muller, *Pl. prot. Lorr.*: 105, 2006) demonstrate that, at least in Lorr., all populations pertain to subsp. *silvestris* Čelak. However, the presence in the area of the *Nouvelle Flore* of subsp. *superbus* cannot be excluded.

- 148 – *Calandrinia elegans* Spach: recorded in 1956 as an ephemeral alien (F. Verloove, *Catal. Neoph. Belg.*: 35, 2006).

- 153-156 – *Salicornia* L.: recent biochemical (mostly molecular) studies tend to reduce the number of species within this genus [G. Kadereit *et al.*, *Taxon* 61(6): 1227-1239, 2012]. In Eurasia only four species are upheld, two of which occur within the territory of the *Nouvelle Flore*: *S. europaea* L. and *S. procumbens* Smith (while 5 species were recognized in NF5). *S. europaea* is now divided in two subspecies, subsp. *europaea* (that includes *S. ra-*

mosissima J. Woods and *S. obscura* P.W. Ball et Tutin of NF5) and a new subsp. *disarticulata* (Moss) Lambinon et Vanderpoorten (syn.: *S. disarticulata* Moss) that corresponds with *S. pusilla* J. Woods of NF5. A hybrid between these subspecies (nsubsp. *marschallii* Lambinon et Vanderpoorten) is frequently encountered. Finally, *S. procumbens* is maintained, as are its two varieties [var. *procumbens* and var. *stricta* (G.F.W. Mey.) J. Duvinéaud et Lambinon]. However, *S. emericii* Duv.-Jouve var. *vicensis* (J. Duvinéaud) J. Duvinéaud of NF5 by no means (not morphologically, nor genetically) seems to differ from *S. procumbens* var. *procumbens* and should no longer be considered an endemic species in Lorraine.

- 158 – *Corispermum* L.: an additional adventive species, *C. gmelinii* Bunge, was recently recorded as an ephemeral grain alien (Harbour of Roeselare, unloading quay for cereals, 13.10.2009, F. Verloove 7884, BR). Previous claims within the territory of the *Nouvelle Flore* of *C. intermedium* Schweigg., already thought to be unreliable in NF5, indeed turned out to be erroneous (F. Verloove & J. Lambinon, *Syst. Geogr. Pl.* 78: 65, 2008).

- 158 – *Bassia* All.: an additional adventive species, *B. hyssopifolia* (Pallas) O. Kuntze, has been recorded as an ephemeral alien, mostly formerly from wool (F. Verloove, *Catal. Neoph. Belg.*: 33, 2006).

- 158 – *Chenopodium* L.: in its original sense *Dysphania* R. Brown was a vaguely circumscribed Australian genus of 7-10 species (P. Aellen, *Bot. Jahrb. Syst.* 63: 483-490, 1930). S.L. Mosyakin & S.E. Clemants [*Ukr. Botan. Journ.* 59: 380-385, 2002; *J. Bot. Res. Inst. Texas* 2(1): 425-431, 2008] considerably expanded *Dysphania* and it now includes all gland-dotted taxa that were formerly accommodated in *Chenopodium*. This new generic concept has soon become widely accepted and it was recently also confirmed by molecular phylogenetic studies [G. Kadereit et al., *Am. J. Bot.* 97(10): 1664-1687, 2010]. As in similar cases this new taxonomy was not yet followed in NF6 but corresponding names in *Dysphania* for the taxa concerned are provided: *D. ambrosioides* (L.) Mosyakin et Clemants (syn.: *Chenopodium ambrosioides* L.), *D. botrys* (L.) Mosyakin et Clemants (syn.: *C. botrys* L.), *D. carinata* (R. Brown) Mosyakin et Clemants (syn.: *C. carinatum* R. Brown), *D. cristata* (F. Muell.) Mosyakin et Clemants [syn.: *C. cristatum* (F. Muell.) F. Muell.], *D. multifida* (L.) Mosyakin et Clemants (syn.: *C. multifidum* L.), *D. pumilio* (R. Brown) Mosyakin et Clemants (syn.: *C. pumilio* R. Brown) and *D. schraderiana* (Schult.) Mosyakin et Clemants (syn.: *C. schraderianum* Schult.).

- 161-162 – *Chenopodium* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *C. salinum* Standley [syn.: *C. glaucum* L. var. *salinum* (Standley) B. Boivin] and *C. simplex* (Torr.) Rafin. (syn.: *C. gigantospermum* Aell.) (F. Verloove, *Catal. Neoph. Belg.*: 39, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 162 – *Chenopodium desiccatum* A. Nelson: this species belongs to a complex group of several closely related taxa, all indigenous to North America [subsect. *Leptophylla* (Standley) Clemants et Mosyakin]. In NF5 this species and *C. pratericola* Rydberg were considered conspecific. However, both these species [as well as *C. leptophyllum* (Moquin-Tandon) Nuttall ex S. Watson] are given species rank by most recent authors (e.g. S.E. Clemants & S.L. Mosyakin, *Fl. North Am.* 4: 275-299, 2003). The Belgian collections, the most recent one dating back to 1953, are difficult to assign to one of these species. Nonetheless, they are preferably referred to as *C. desiccatum* (incl. *C. pratericola*).

- 162 – *Chenopodium polygonoides* (J. Murr) Aellen: this rare and ephemeral wool alien is now usually accommodated in the genus *Einadia* Rafin. (e.g. *Fl. Austr.* 4: 164, 1984; *Fl. New South Wales* 1: 225, 1990; E.J. Clement & M.C. Foster, *Alien plants of the British Isles*: 45, 1994). Its corresponding synonym in this genus was added [*E. polygonoides* (J. Murr) P.G. Wilson].

- 163 – *Chenopodium rubrum* L. var. *humile* (Hook.) S. Watson: the author citation for this variety needed to be corrected, Watson (*Bot. California* 2: 48, 1880) having validly published it 17 years earlier than Gürke did (e.g. S.E. Clemants & S.L. Mosyakin, *Fl. North Am.* 4: 275-299, 2003).

- 164 – *Chenopodium album* L. var. *reticulatum* (Aell.) Uotila (syn.: *C. reticulatum* Aell.), a variant with a finely reticulate seed coat, has been recorded in the territory of the *Nouvelle Flore* in the past and may have been overlooked.

- 164 – *Chenopodium berlandieri* Moq.: this North American alien was formerly regularly recorded in the territory of the *Nouvelle Flore* but long remained strictly ephemeral. At least since 1994, however, it is locally well-established and not rare in the surroundings of Ghent (port area, rough ground, ground heaps, etc.) and, less frequently, elsewhere too (Mar., Fl.) (F. Verloove et al., *Dumortiera* 88: 20-26, 2006). This species was therefore introduced in the key in NF6 and a detailed account was provided.

- 168 – *Atriplex* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *A. sibirica* L. and *A. suberecta* Verdoorn (F. Verloove, *Catal. Neoph. Belg.*: 32, 2006).

- 168 – *Atriplex micrantha* Ledeb.: still considered an ephemeral alien in NF5, this species is now treated in detail in NF6. Since 2003 it is fast spreading along motorways (mainly central reservation and probably benefiting from the extensive use of deicing salt during winter) (F. Verloove, *Dumortiera* 88: 15-20, 2006; N. Pax, *Monde Pl.* 495: 27-29, 2008). By now it is well-naturalized in Mar., Fl., Brab., Mosan and Lorr.

- 172 – *Amaranthus rudis* Sauer: this alien species is possibly conspecific with *A. tuberculatus* (Moq.) Sauer or

at most a variety of the latter [M. Costea & F.J. Tardif, *Rhodora* 105(923): 266, 2003; *Fl. North Am.* 4: 417-418, 2003]. Its corresponding name at varietal rank was added in NF6 [var. *rudis* (Sauer) Costea et Tardif].

- 172 – *Amaranthus muricatus* (Gillies ex Moq.) Hieron.: the author citation needed to be improved (e.g. J.L. Carretero, *Flora Iberica* 2: 554-569, 1990; S.L. Mosyakin & K.R. Robertson, *Fl. North Am.* 4: 410-435, 2003).

- 172 – *Amaranthus scleropoides* Uline et Bray: the identity of this alien species was confirmed by P. Aellen in 1960 (Béthane, Vesdre-dal, wegrand, 20.09.1958, S.J. van Ooststroom 21926, L). An orthographic error (“*scleropodioides*” in NF5) was also corrected in NF6.

- 172 – *Amaranthus hybridus* L. and related species: this is a taxonomically difficult species complex in which species boundaries have long been unclear and therefore controversial. Recent morphological and anatomical studies have considerably changed interspecific relationships [e.g. M. Costea *et al.*, *Sida* 19(4): 931-974, 2001]. This renewed species concept is widely becoming accepted in the New World (see for instance S.L. Mosyakin & K.R. Robertson, *Fl. North Am.* 4: 410-435, 2003). In NF6 traditional concepts were maintained but the following corresponding synonyms were added: *A. hybridus* subsp. *quitensis* (Kunth) Costea et Carretero (syn.: *A. quitensis* Kunth) and *A. powellii* S. Watson subsp. *bouchonii* (Thell.) Costea et Tardif [syn.: *A. hybridus* subsp. *bouchonii* (Thell.) O. Bolós et Vigo].

- 181 – *Rumex* L. (hybrids): three additional hybrids have recently been recorded in the territory of the *Nouvelle Flore*. *R. ×schulzei* Hausskn. (*R. conglomeratus* Murray × *crispus* L.) was discovered in French Lorr. (G.H. Parent, *Adoxa* hors-série 2: 20, 2004), *R. ×erubescens* Simonk. (*R. obtusifolius* L. × *patientia* L.) on several locations in Fl. (F. Verloove, *Dumortiera* 95: 4-8, 2008) and *R. ×confusus* Simonk. (*R. crispus* × *patientia*) near Kortrijk (F. Verloove, *Dumortiera* 102: 3-9, 2013).

- 181 – *Rumex alpinus* L.: the proposal to conserve this name with a conserved type was accepted (Vienna Code: 461, 2006).

- 181 – *Rumex* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *R. kernerii* Borbás, *R. longifolius* DC. and *R. stenophyllus* Ledeb. (F. Verloove, *Dumortiera* 95: 4-8, 2008; id. 102: 3-9, 2013).

- 184 – *Rumex pulcher* L.: this species comprises several subspecies that are not easily separated (mature fruiting valves are required for an accurate identification). The only native taxon in the territory of *Nouvelle Flore* (confined to its southernmost parts) seems to be subsp. *pulcher*. A second taxon, subsp. *woodsii* (De Not.) Arcang., was recorded as an ephemeral grain alien in the port of Ghent (F. Verloove, *Dumortiera* 80: 51, 2003).

- 185 – *Polygonum argyrocoleon* Steud. ex Kunze: an

ephemeral grain alien, recorded in 1995 in the Roeselare port area (F. Verloove, *Catal. Neoph. Belg.*: 69, 2006).

- 189 – *Persicaria divaricata* (L.) H. Gross [syn.: *Polygonum divaricatum* L., *Aconogonon divaricatum* (L.) Nakai ex T. Mori]: cultivated ornamental found as an escape or throw-out in 2008 in an abandoned quarry [Bilstain (comm. Limbourg), carrière Max Blees, deux pieds sur un talus, 07.06.2009 (aussi en 2008), A. Remacle, LG].

- 189 – *Persicaria nepalensis* (Meissn.) H. Gross (syn.: *Polygonum nepalense* Meissn.): discovered in abundance by sandy tracks in woodland in Averbode in 2010 (Averbode, bospad, talrijk, 30.10.2010, R. Barendse, BR, LG). This species seems firmly established in this locality.

- 189 – *Persicaria wallichii* Greuter et Burdet: this species is sometimes accommodated in a segregate genus, *Rubrivena* M. Král. Morphologically, members of *Rubrivena* doubtlessly are more closely similar to *Aconogonon* (Meissn.) Reichenb. and this relationship is also corroborated by molecular data [G. Galasso *et al.*, *Atti Soc. It. Sci. Nat. Museo Civ. Stor. Nat. Milano* 150(1): 113-148, 2009]. However, the pollen character of *Rubrivena* is very reminiscent of that of *Persicaria* Mill. Final placement of this species remains uncertain but, for convenience, its corresponding name in *Rubrivena* was added as a synonym in NF6 [*R. polystachya* (Wall. ex Meissn.) M. Král].

- 189-190 – *Persicaria mitis* (Schrank) Asenov and *P. maculosa* S.F. Gray: the proposal to conserve these names with a conserved type was accepted (Vienna Code: 457, 2006).

- 193 – *Fallopia japonica* (Houtt.) Ronse Decraene var. *compacta* (Hook. f.) J.P. Bailey: this taxon is usually given varietal rank. However, G.H. Loos [*Online-Veröff. Bochumer Bot. Ver.* 2(1): 1-20, 2010], mainly summarizing previous studies, strongly recommended specific status and this was confirmed by molecular data as well [G. Galasso *et al.*, *Atti Soc. It. Sci. Nat. Museo Civ. Stor. Nat. Milano* 150(1): 113-148, 2009]. In fact, it proved to be more closely related to *F. sachalinensis* (F. Schmidt Petrop.) Ronse Decraene than to *F. japonica*. Two synonyms at species rank were added in NF6: *F. compacta* (Hook. f.) G.H. Loos and *Reynoutria compacta* (Hook. f.) Nakai.

- 195-196 – *Limonium humile* Mill.: a small population of this species was discovered in 1996 on rough ground alongside the Schelde-Rijnkanaal in Nieuw Vossemeer in Mar. sept. (Netherlands) (R. van der Meijden, *Heukels' Fl. Nederl.*, 23th ed.: 269-270, 2005). It is unclear whether this species was overlooked hitherto or whether it arrived as a result of a natural range extension (it is also cultivated as an ornamental and could as well be a garden escape or throw-out). *L. humile* is not always easily distinguished from *L. vulgare* and despite their different chromosome numbers, hybrids are easily produced where-ever both species grow in close proximity; this further complicates their separation (see also: H.J. Dawson, updated by T.G.C. Rich, *Limonium vulgare*/L. *humile*, *Plant Crib* 1998: 102; C.A. Stace, *New Flora Brit. Isles*, 3rd ed.: 429, 2010; *Fl.*

Eur. 3: 38 and 42, 1972). Additional research, including a thorough revision of herbarium collections, should elucidate its status within the territory of the *Nouvelle Flore*.

- 197 – *Armeria maritima* Willd. (subspecies): inland populations from zinciferous soils are usually ascribed to subsp. *halleri* (Wallr.) Rothm. In NF5 the identity of these populations was already briefly discussed, especially with respect to their close resemblance to some coastal plants (subsp. *maritima*). Indeed, populations of subsp. *halleri* within the territory of the *Nouvelle Flore* are much less characteristic than those from Central Europe. Moreover, in the surroundings of Douai in France (Brab. occ.), also on zinciferous substrate, some plants with long-acuminate outer involucre bracts rather tend towards subsp. *elongata* (Hoffmann) Bonnier (e.g.: Evin-Malmaison, au NW de Douai, F. Verloove 5363, LG). Populations from the very same area were already referred to as “*Armeria elongata* Hoffmann” by A. Berton [*Bull. Soc. Bot. Fr.* 111 (“1964”): 90, 1969]. This issue clearly requires further study within the area of the *Nouvelle Flore*.

- 198 – *Paeonia* L.: two species of *Paeonia* (*P. officinalis* L. and *P. suffruticosa* Haw.) have been recorded as escapes from cultivation in Lorr. (G.H. Parent, *Adoxa hors-série* 2: 18, 2004).

- 198 – *Actinidia deliciosa* (A. Chevalier) C.S. Liang et A.R. Ferguson: the basionym for this combination being *A. latifolia* (Gardner et Champ.) Merr. var. *deliciosa* A. Chevalier (*Rev. Bot. Appl. Agric. Trop.* 20: 12, 1940), the author citation needed to be corrected accordingly.

- 203 – *Hypericum perforatum* L. subsp. *veronense* (Schrank) Cesati: the author citation for this subspecies needed to be corrected, Cesati (in Cattaneo, *Not. Nat. Civ. Lombardia*: 291, 1844) having validly published it much earlier than Lindberg (*Öfvers. Förh. Finska Vetensk.-Soc.* 48: 73, 1906) and Fröhl (*Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl., Abt. 1*, 120: 539, 1911) (K.P. Buttler & R. Hand, *Kochia* 2: 43-49, 2007).

- 208 – *Malvaceae* (adventive and ornamental species): a list is provided with species from genera, others than those treated in detail, that have been recorded as escapes; the following were added: *Kitaibela vitifolia* Willd. [e.g. Berchem (Antwerpen), former demolition site, 28.06.2009, F. Verloove 7658, BR, LG] and *Malope malacoides* L. (F. Verloove & G. Heyneman, *Dumortiera* 100: 19-24, 2012).

- 208 – *Lavatera* L.: the traditional generic distinction between *Lavatera* and *Malva* L. is based on fusion or non-fusion of the epicalyx but this character is very critical and turns out to be highly artificial and untenable [M.F. Ray, *Pl. Syst. Evol.* 198: 29-53, 1995; E. Banfi et al., *Atti Soc. It. Sci. Nat. Museo Civ. Stor. Nat., Milano* 146(2): 219-244, 2005]. The relationships inferred from molecular data also strongly contrast with this traditional classification (P. Escobar García et al., *Mol. Phylogenet. Evol.* 50: 226-239, 2009). There are species in *Lavatera* (e.g. *L. mauritanica* Durieu and *L. triloba* L.) in which

fusion of epicalyx segments differs between populations (S.R. Hinsley, *B.S.B.I. News* 115: 51, 2010). Some species traditionally included in *Lavatera* are more closely related to, for instance, *Malva sylvestris* L. than are some other species of *Malva*. These species of *Lavatera* – the so-called Malvoid group (M.F. Ray l.c.) – were already transferred to *Malva* [M.F. Ray l.c.; M.F. Ray, *Novon* 8(3): 288-295, 1998; Banfi et al. l.c.; J. Molero Briones & J.M. Montserrat Martí, *Fontqueria* 55: 285-292, 2005; Banfi et al., *Atti Soc. It. Sci. Nat. Museo Civ. Stor. Nat., Milano* 152(2): 85-106, 2011]. The remainder of the genus (the Lavateroid group) may be upheld, in part based on an alternative distinction of both genera on mericarp characters (i.e. malvoid mericarps with dorsal faces flat vs. lavateroid mericarps with dorsal faces rounded; see M.F. Ray l.c.; P. Escobar García et al. l.c.). However, this separation is blurred by the existence of taxa with intermediate morphology (some *Malva* species possess fruits that are not assignable to any of the two types; P. Escobar García et al. l.c.). Both genera are therefore better merged or *Lavatera* further divided into four or up to 12 independent genera (E. Banfi et al. l.c.; P. Escobar García et al. l.c.; S.R. Hinsley l.c.). *Malva* having priority, all species currently accommodated in *Lavatera* are better transferred to *Malva*. As in similar cases this new taxonomy was not yet followed in NF6 but corresponding names in *Malva* for the taxa concerned are provided: **M. ×clementii* (Cheek) Stace (syn.: *L. ×clementii* Cheek), **M. maroccana* (Batt. et Trabut) Verloove et Lambinon [syn.: *L. maroccana* (Batt. et Trabut) Maire], *M. pseudolavatera* Webb et Berthel. (syn.: *L. cretica* L.), **M. punctata* (All.) Alef. (syn.: *L. punctata* All.) and *M. trimestris* (L.) Salisb. (syn.: *L. trimestris* L.). Out of these, the taxa preceded by an asterisk were not yet reported in NF5.

- 209 – *Alcea* L.: a full account for this genus was added in NF6. *A. rosea* L. is increasingly reported as an escape from cultivation in the territory covered by the *Nouvelle Flore* and locally seems to naturalize (roadsides, old walls, canal banks, etc., often in urban habitats) (*AFB*: 118). A similar species, *A. ficifolia* L. (a putative hybrid *A. rosea* × *rugosa* Alef.) has also been recorded as escape, as is *A. rugosa*. Their separation is not always straightforward.

- 212 – *Abutilon ×suntense* C.D. Brickell [*A. ochsenii* (Phil.) Phil. × *vitifolium* (Cav.) J. Presl]: cultivated ornamental, exceptionally seen as an escape or throw-out (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 214 – *Drosera longifolia* L.: this ambiguous name that has been applied to two species (*D. anglica* Huds. and *D. intermedia* Hayne) was finally rejected (Vienna Code: 473, 2006).

- 222 – *Viola elatior* Fries: previous claims of this species in the territory of the *Nouvelle Flore* were always erroneous and referable to *V. pumila* Chaix (NF5). However, genuine *V. elatior* was recently discovered in Toul (Lorr. mér.) (P. Dardaine in J. Lambinon, *Dumortiera* 85-87: 14,

2005) and therefore introduced in NF6. Unfortunately, its unique locality was destroyed soon after its discovery (S. Muller, *Pl. prot. Lorr.*: 270, 2006).

- 225 – *Blumenbachia hieronymi* Urban: all Belgian records of *B. insignis* Schrad. proved to be erroneous and referable to *B. hieronymi* (F. Verloove & J. Lambinon, *Syst. Geogr. Pl.* 78: 63-79, 2008).

- 227-228 – *Cucumis* L.: introduction in NF6 of a full account for this genus with two frequently cultivated vegetables (*C. melo* L. and *C. sativus* L.), both also known as escapes or aliens. A third species, *C. myriocarpus* Naudin, was formerly recorded as ephemeral wool alien (F. Verloove, *Catal. Neoph. Belg.*: 42, 2006).

- 241 – *Salix* L. (adventive taxa): some recent studies [A. Zwaenepoel, *Streepzaad* 9(2): 4-13, 2003; F. Verloove, *Catal. Neoph. Belg.*: 74, 2006] have considerably improved our knowledge on this genus within the territory of the *Nouvelle Flore*. The following taxa have been reliably recorded as escapes from cultivation (some perhaps locally naturalized): *S. acutifolia* Willd., *S. babylonica* L. var. *pekinensis* A. Henry f. *tortuosa* (Vilm. Andr.) Geerinck, *S. daphnoides* Vill., *S. elaeagnos* Scop. [especially subsp. *angustifolia* (Cariot) Rech. f.], *S. eriocephala* Michaux, *S. forbyana* Smith, *S. irrorata* Anderss. and *S. udensis* Trautv. et C.A. Mey. Pending further study (especially emphasizing on their degree of naturalization and distribution) these taxa are merely cited in NF6 although at least some perhaps merit a full account in the future.

- 242 – *Salix* × *mollissima* Hoffmann ex Elwert: this putative hybrid of *S. triandra* L. and *viminialis* L. was merely cited in NF5 but appears to be rather widespread within the territory of the *Nouvelle Flore* [A. Zwaenepoel, *Streepzaad* 9(2): 4-13, 2003; *AFB*: 792; see also: R.D. Meikle, *Willows and Poplars of Great Britain and Ireland*, 1984; C.A. Stace, *New Flora Brit. Isles*: 230-243, 1997; *Fl. Nordica* 1: 117-188, 2000]. A full account for this nothotaxon was therefore introduced in NF6. It is, in fact, not rare at all in Fl. and has also been reported from Mar., Brab. occ. and Fluv. Only female clones seem to be present and although both parent species are not rare within large parts of the territory of the *Nouvelle Flore*, *S. ×mollissima* is often a mere relic of or an escape from cultivation. Some clones approach *S. triandra*, others *S. viminialis* and the separation of these taxa is not always straightforward.

- 243 – *Salix* × *rubens* Schrank var. *basfordiana* (Scaling ex Salter) Meikle: attention is drawn to this variety that is much reminiscent of *S. alba* L. var. *vitellina* (L.) Stokes (both with yellowish twigs). These taxa should be studied more closely in the territory of the *Nouvelle Flore*.

- 253 – *Matthiola longipetala* (Vent.) DC. subsp. *bicornis* (Smith) P.W. Ball: cultivated ornamental, rarely seen as an escape (F. Verloove, *Catal. Neoph. Belg.*: 61, 2006).

- 254 – *Sisymbrium* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were

added: *S. erysimoides* Desf., *S. runcinatum* Lag. ex DC. and *S. septulatum* DC. (F. Verloove, *Catal. Neoph. Belg.*: 78, 2006).

- 255 – *Descurainia pinnata* (Walter) Britton: this North American alien was previously referred to as *D. brachycarpa* (Richards) O.E. Schulz (NF5); the latter is included in *D. pinnata* by most modern taxonomists (e.g. B.E. Goodson & I.A. Al-Shehbaz, *Fl. North Am.* 7: 518-529, 2010).

- 262 – *Cardamine* L.: an additional species, *C. pentaphyllos* (L.) Crantz (sub *Dentaria digitata* Lam.), was formerly claimed from the Aisne department in France (Forêt d'Hirson in Ard. occ.; see L.B. Riomet & M. Bournérias, *Flore de l'Aisne*, fasc. 4: 136, 1954). Its nearest known localities being located in the Vosges this claim appears to be suspect. No voucher specimens seem to confirm this record and confusion with *C. heptaphylla* (Vill.) O.E. Schulz, known from some nearby localities in the Tert. par. district, is not unlikely. In the absence of unequivocal evidence, this species was not introduced in NF6.

- 264-265 – *Cardamine corymbosa* Hook. f.: this New Zealand species, first discovered in Europe (Great Britain) in 1975, is increasingly found within the territory of the *Nouvelle Flore* (mainly in Flanders and the Netherlands) since the end of the 1990s, mostly as a weed in plant nurseries and gardens (I. Hoste *et al.*, *Dumortiera* 93: 15-24, 2008); the species is therefore introduced in the key in NF6 and a full account provided.

- 265 – *Arabidopsis* (DC.) Heynh.: the basionym for this name being *Sisymbrium* L. sect. *Arabidopsis* DC., the author citation ("Heynh." in NF5) needed to be corrected.

- 265 – *Cardaminopsis* (C.A. Mey.) Hayek: recent molecular studies merge *Cardaminopsis* and *Arabidopsis* (DC.) Heynh. (S.L. O'Kane & I.A. Al-Shehbaz, *Novon* 7(3): 323-327, 1997), the latter having priority. This new taxonomy was not yet followed in NF6 but corresponding names in *Arabidopsis* for the taxa concerned are provided: *A. arenosa* (L.) Lawalrée [subsp. *arenosa* and subsp. *borbasii* (Zapał.) O'Kane et Al-Shehbaz] [syn.: *C. arenosa* (L.) Hayek subsp. *arenosa* and subsp. *borbasii* (Zapał.) Pawl. ex H. Scholz] and *A. halleri* (L.) O'Kane et Al-Shehbaz [syn.: *C. halleri* (L.) Hayek].

- 266 – *Arabis procurrens* Waldst. et Kit.: this species is cultivated as an ornamental and has been recorded as an escape (e.g. Hasselt, bordure de terrain vague, 2009, J. Lambinon 09/20, L. Andriessen & C. Nagels, LG).

- 267 – *Arabis turrita* L.: this species is now accommodated in a segregate monotypic genus, *Pseudoturritis* Al-Shehbaz. Recent molecular research supports its removal from a broadly circumscribed genus *Arabis* L. (I.A. Al-Shehbaz, *Novon* 15: 519-524, 2005). For convenience its synonym in the latter genus was added in NF6 [*P. turrita* (L.) Al-Shehbaz].

- 267 – *Arabis hirsuta* (L.) Scop. subsp. *gerardii* (Besser) Hartm.: in NF5 attention was already drawn to this

subspecies that may have been overlooked so far within the territory of the *Nouvelle Flore*. G.H. Parent (*Adoxa* hors-série 2: 8, 2004) indeed cites two localities in Lorr. (France) [sub *A. nemorensis* (Hoffm.) Koch]. A full account for this subspecies, including a key to the three taxa currently known to occur, was therefore introduced in NF6. The taxonomy of this subspecies, and more precisely its affinity with *A. planisiliqua* (Pers.) Reichenb., remains unclear. *A. planisiliqua* is mostly confined to SW Europe but extends to the north up to the valley of river Seine in France.

- 265 – *Aubrieta columnae* Guss.: this additional species of *Aubrieta* Adans., also cultivated as an ornamental, is known since at least 1966 from an old wall in Brugge (F. Verloove & W. Van Landuyt, *Dumortiera* 88: 27, 2006). Distinguishing features for this species and *A. deltoidea* (L.) DC. are provided.

- 274-275 – *Thlaspi* L.: the generic limits of *Thlaspi* have long been controversial. F.K. Meyer (*Feddes Repert.* 84: 449-470, 1973) already proposed an alternative generic circumscription and recognized twelve distinct genera, mainly based on seed-coat sculpture and other anatomical characters. Some of these segregates are now confirmed by additional phylogenetic studies [e.g. M. Koch & I.A. Al-Shehbaz, *Syst. Bot.* 29(2): 375-384, 2004]. In fact, the native genera *Microthlaspi* F.K. Mey. and *Noccaea* Moench are less closely related to *Thlaspi* s.str. than are the morphologically very different genera *Alliaria* Heist. ex Fabr. and *Teesdalia* R. Brown. Perhaps the latter should also be included in *Thlaspi* s.str. or *Thlaspi* further divided as to exclude *T. alliaceum* L. Pending further research, alternative names in these segregate genera were added in NF6: *Thlaspi perfoliatum* L. [syn.: *Microthlaspi perfoliatum* (L.) F.K. Mey.], *T. montanum* L. [syn.: *Noccaea montana* (L.) F.K. Mey.] and *T. caerulescens* J. et C. Presl [syn.: *Noccaea caerulescens* (J. et C. Presl) F.K. Mey.].

- 275-276 – *Iberis amara* L.: a robust form [var. *coronaria* (D. Don) Voss] is sometimes cultivated as an ornamental and was found as an escape in 1973; it was wrongly ascribed to *I. gibraltarica* L. in NF5 (F. Verloove & J. Lambinon, *Syst. Geogr. Pl.* 78: 66, 2008).

- 281 – *Coronopus* Zinn: recent molecular phylogenetic studies unite *Coronopus* and *Lepidium* L. (I.A. Al-Shehbaz et al., *Novon* 12: 5-11, 2002). Corresponding names in the latter genus were added as synonyms in NF6 [resp. *L. coronopus* (L.) Al-Shehbaz and *L. didymum* L.].

- 285 – *Hirschfeldia incana* (L.) Lagrèze-Fossat: although morphologically very distinct, *Hirschfeldia* Moench is genetically closely related to *Erucastrum* (DC.) C. Presl and molecular studies (S.I. Warwick & L.D. Black, *Can. J. Bot.* 71: 906-918, 1993) support its inclusion in a broadly circumscribed genus *Erucastrum*. The generic circumscription of these and other closely related genera (e.g. *Diplotaxis* DC. and *Sisymbrium* L.) remains uncertain and pending additional research

traditional concepts have been adopted in NF6; however, the corresponding name in *Erucastrum* [*E. incanum* (L.) Koch] was added as a synonym.

- 286 – *Crambe hispanica* L.: this species and *C. abyssinica* Hochst. are probably conspecific [A. Prina, *Bot. J. Linn. Soc.* 133(4): 509-524, 2000], the former binomial having priority.

- 290 – *Caylusea abyssinica* (Fresen.) Fisch. et C.A. Mey.: rarely seen as an ephemeral alien, probably from discarded bird seed (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 306 – *Anagallis monelli* L.: a very rare and ephemeral escape from cultivation (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 306-307 – *Anagallis* L. and *Glaux* L.: molecular data suggest that *Anagallis* and *Glaux* are better accommodated in a broadly circumscribed genus *Lysimachia* L. (U. Manns & A.A. Anderberg, *Willdenowia* 39: 49-54, 2009; see also E. Banfi et al., *Atti Soc. Ital. Sci. Natur. e Museo Civ. Storia Nat. Milano* 146(2): 219-244, 2005). This new taxonomy was not yet followed in NF6 but the corresponding names for *Glaux maritima* L. and *Anagallis tenella* (L.) L., *A. arvensis* L. and *A. monelli* L. in *Lysimachia* were added as synonyms [resp. *L. maritima* (L.) Galasso, Banfi et Soldano, *L. tenella* L., *L. arvensis* (L.) U. Manns et Anderb. and *L. monelli* (L.) U. Manns et Anderb.].

- 307 – *Cyclamen europaeum* auct. non L.: this ambiguous name was finally rejected (Vienna Code: 473, 2006).

- 310 – *Ribes divaricatum* Douglas: recently recorded as an escape from cultivation (Baudour, Bois de Baudour, Quartier de la Charbonnière, bois, près de l'ancienne propriété Buxant, 24.05.2010, F. Verloove 8088, BR).

- 310 – *Ribes* × *nidigrolaria* R. et A. Bauer: this complex artificial hybrid (probably derived from *R. divaricatum* Douglas × *nigrum* L. × *uva-crispa* L.) is sometimes grown for its edible fruits and has been recorded as an escape from cultivation (F. Verloove, *Dumortiera* 99: 9, 2011).

- 312 – *Umbilicus rupestris* (Salisb.) Dandy: this species is known from an old wall in Huldenberg (Sint-Agatha-Rode) since 2000 (R. Jocqué & K. Es, *Dumortiera* 84: 24-25, 2005). Its distinguishing features are provided in NF6.

- 313 – *Sempervivum* × *barbulatum* Schott (*S. arachnoideum* L. × *montanum* L.): sometimes cultivated as an ornamental and observed as an escape on a quay wall in Ghent since 2009 (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 313-317 – *Sedum* L.: two cultivated ornamentals are increasingly found as escapes, *S. hispanicum* L. and *S. kamtschaticum* Fisch. et C.A. Mey. subsp. *ellacombianum* (Praeg.) R.T. Clausen (e.g. Saintenoy-Simon et al., *Adoxa* 43/44: 50, 2004; J. Lambinon & A. Remacle, *Dumortiera* 90: 12-15, 2006). These taxa were introduced in the key and full accounts were provided. *S. villosum* L. in turn, long extinct in Eifel (and Pic. or.) and unlikely to be re-

discovered, is now merely cited in NF6 (detailed account omitted).

- 315-316 – *Sedum telephium* L.: the separation of two (native) subspecies within the territory of the *Nouvelle Flore* [subsp. *telephium* and subsp. *fabaria* (Koch) Syme] appears to be critical. As a consequence, their distribution as given in NF6 (and NF5) is very preliminary.

- 317 – *Heuchera micrantha* Lindl.: sometimes cultivated as an ornamental and seen as an escape in urban habitats (e.g. Antwerpen, Sanderusstraat, keldergaten, talrijk verwilderd, 30.07.2005, F. Verloove 6043, LG).

- 320 – *Saxifraga cymbalaria* L.: sometimes cultivated as an ornamental and exceptionally seen as an escape (F. Verloove, *Catal. Neoph. Belg.*: 75, 2006).

- 324 – *Stephanandra incisa* (Thunb.) Zabel: recent molecular phylogenetic research supports the inclusion of *Stephanandra* Sieb. et Zucc. in *Neillia* D. Don [S.H. Oh, *Novon* 16(1): 91-95, 2006; Potter *et al.*, *Pl. Syst. Evol.* 266: 5-43, 2007]. This transfer is also confirmed by leaf morphology, inflorescence type and carpel number. This new taxonomy was not yet followed in NF6 but the corresponding name in *Neillia* was added as a synonym [*N. incisa* (Thunb.) S. Oh].

- 326 – *Spiraea canescens* D. Don and *S. nipponica* Maxim.: both cultivated as ornamentals and recently seen as escapes from cultivation (e.g. Wielsbeke, oude Leie-arm, 29.07.2009, F. Verloove 7689, LG; Oostduinkerke, Kluislaan, duingrasland (restperceel), 19.05.2010, F. Verloove 8032, BR).

- 326 – *Spiraea* × *rosalba* Dippel (*S. alba* Du Roi × *salicifolia* L.): attention is drawn to this ornamental that is frequently cultivated and that has been reported as an escape (F. Verloove, *Catal. Neoph. Belg.*: 79, 2006). It is reminiscent of *S. alba* and may have been overlooked. Distinguishing features for both are provided.

- 326 – *Spiraea* × *billardii* Herincq (*S. alba* × *douglasii* Hook.): this is by far the most frequent escape from this genus within the territory of the *Nouvelle Flore*; it is introduced in the key and a full account is provided. Its separation from *S. pseudosalicifolia* Silverside (*S. douglasii* × *salicifolia* L.) remains critical (compare with C. Stace, *New Flora Brit. Isles*: 325-328, 1997; A.J. Silverside in T.C.G. Rich & A.C. Jermy, *Plant Crib* 1998: 140-143; Businský R. & Businská L., *Acta Průhoniana* 72: 1-165, 2002).

- 327 – *Spiraea japonica* L. f.: this is a very popular ornamental shrub that is increasingly found as an escape from cultivation. At least in parts of FL., Mosan and Lorr. it seems to naturalize locally, mostly in urban habitats but also in wood margins (e.g. abundantly naturalized in Bois de Laneuville near Montmédy; see G.H. Parent, *Ferrantia* 45: 55, 2006). It is introduced in the key and a full account is provided. Its variability is also briefly discussed; white-flowered plants are ascribable to f. *albiflora* (Miquel) Kitamaro for which the author citation needed to be corrected (D. Geerinck, *Taxonomia* 20: 16, 2007).

- 331-344 – *Rubus* section *Corylifolii* Lindl.: *R. arvinus* Lef. et P.J. Muell. and *R. semibracteosus* Sudre needed to be included in the synonymy of *R. calcareus* P.J. Muell. while *R. echinosepalus* H.E. Weber, *R. lejeunei* Weihe ex Lej. and *R. anglocandicans* A. Newton needed to be removed from the synonymy of *R. brittanicus* W.M. Rogers, *R. ulmifolius* Schott and *R. grabowskii* Weihe respectively. The following microspecies were added in NF6: *R. fulcratus* Lej. et P.J. Muell. under *R. raduloides* (W.M. Rogers) Sudre, *R. bonus-henricus* Matzke-Hajek and *R. hasbaniensis* Vannerom *nom. et stat. nov.* (syn.: *R. acutifolius* Lef. et P.J. Muell. var. *foliolatus* Sudre) under *R. drymophilus* P.J. Muell. et Lef., *R. incarnatus* P.J. Muell. (syn.: *R. osseus* Matzke-Hajek) under *R. libertianus* Weihe ex Lej. and *R. subvestitus* Matzke-Hajek under *R. vestitus* Weihe (comm. H. Vannerom 09.2008). Contrary to what was stated by A. van de Beek (*Gorteria* 9: 281-283, 1979), *R. lejeunei* Weihe is a legitimate name and exactly corresponds with *R. promachonicus* v.d. Beek, the latter thus being a superfluous name. *R. iuvensis* v.d. Beek is preferably accepted as a variety of *R. aculeolatus* P.J. Muell. [var. *iuvensis* (v.d. Beek) Vannerom *comb. nov.*] (comm. H. Vannerom 09.2008). *R. melamporphyrus* v.d. Beek can be added as a synonym of *R. nigricatus* P.J. Muell. et Lef. (comm. H. Vannerom 08.2008). The correct name for the species named *R. acridentulus* P.J. Muell. ex Boulay in NF5 is *R. speculatus* Matzke-Hajek (G. Matzke-Hajek, *Osnabrücker Naturwiss. Mitt.* 23: 215, 1997).

- 331 – *Rubus vanwinkelii* v.d. Beek et Vannerom: a newly described species from section *Corylifolii* Lindl. was added (see A. van de Beek & H. Vannerom, *Dumortiera* 89: 4-7, 2006). It is mostly known from Camp. (Belgium as well as Netherlands) but has also been recorded in Brab. or. and Mosan (Remouchamps).

- 345 – *Geum* (adventive species): *G. quellyon* Sweet and *G. ternatum* (Stephan) Smedmark [syn.: *Waldsteinia ternata* (Stephan) Fritsch] are cultivated as ornamentals and are exceptionally seen as escapes (F. Verloove, *Catal. Neoph. Belg.*: 52, 2006). Claims of *G. laciniatum* Murray are referable to the Grand Duchy of Luxembourg (F. Verloove & J. Lambinon, *Syst. Geogr. Pl.* 78: 76, 2008).

- 348 – *Potentilla rivalis* Nutt. ex Torr. et A. Gray: this North American species was already cited as an alien in NF5; however, since it seems to have been present for several decades in its unique locality in Aalter (FL.) (I. Hoste, *Dumortiera* 88: 6-12, 2006) some supplementary information about its recognition (primarily compared to *P. norvegica* L.), ecology, etc. were added in NF6.

- 348 – *Potentilla rupestris* L.: this species belongs to subtribe Fragariinae [like, among others, *Alchemilla* L. (incl. *Aphanes* L.) and *Fragaria* L.] and the latter appears to be well-delimited from Potentilleae according to molecular phylogenetic studies (Potter *et al.*, *Pl. Syst. Evol.* 266: 5-43, 2007; see also A. Kurtto & T. Eriksson, *Ann. Bot. Fennici* 40: 135-141, 2003; *Atlas Fl. Eur.* 13: 158-160, 2004). *P. rupestris* is better accommodated in a sepa-

rate genus, *Drymocallis* Fourr. ex Rydb. Its corresponding name in this genus [*D. rupestris* (L.) Soják] was added as a synonym in NF6.

- 348 – *Potentilla sterilis* (L.) Garcke: the author citation of *P. fragariastrum* Ehrh. ex Pers. (syn.) needed to be corrected (cf. *Atlas Fl. Eur.* 13: 267, 2004).

- 349 – *Potentilla inclinata* Vill.: this species is much confused with and not easily distinguished from *P. intermedia* L. (and, to some extent, *P. argentea* L.). The identification key was improved and some further notes added. The exact distribution of this species within the territory of the *Nouvelle Flore* remains uncertain, but at least in some areas it is naturalized for many decades.

- 350 – *Potentilla norvegica* L.: S. Cafferty & C.E. Jarvis (*Taxon* 51: 542, 2002) lectotypified *P. monspeliensis* L. in the sense of a European plant. The correct name for the least rare taxon within the territory of the *Nouvelle Flore*, originally native in North America, therefore is *P. norvegica* subsp. *hirsuta* (Michaux) Hyl. (see also *Atlas Fl. Eur.* 13: 206-207, 2004).

- 350 – *Potentilla erecta* (L.) Räuschel.: *P. silvestris* Neck. is a *nom. illeg.* and was removed from the synonymy. The authorship for *P. tormentilla* Neck., another synonym, needed to be corrected (*Fl. Iberica* 6: 128, 1998; *Atlas Fl. Eur.* 13: 252, 2004).

- 350 – *Potentilla tabernaemontani* Aschers.: the nomenclatural type of *P. neumanniana* Reichenb. (binomial adopted in NF5) is a hybrid with stellate hairs on the lower side of the leaves, a feature never occurring in this species [Z. Kaplan, *Folia Geobotanica* 33(3): 372, 1998; J. Soják, *Candollea* 60(1): 69-70, 2005; see also long discussion in *Atlas Fl. Eur.* 13: 242-245, 2004]. *P. verna* L., another doubtful synonym, was lectotypified in the sense of *P. grandiflora* L. (S. Cafferty & C.E. Jarvis, *Taxon* 51: 542, 2002). The correct name for its hybrid with *P. incana* P. Gaertn., B. Mey. et Scherb. is *P. ×subarenaria* Borbás ex Zimmer (*Atlas Fl. Eur.* 13: 247, 2004).

- 351 – *Potentilla leucopolitana* P.J. Muell.: the combination at subspecies level [*P. collina* Wibel subsp. *leucopolitana* (P.J. Muell.) Aschers. et Graebn.] was validly published much earlier by Ascherson & Graebner [*Syn. Mitteleur. Fl.* 6(1), 1904-1905] than it was by Dostál (*Květena ČSR*: 638, 1950) (*Atlas Fl. Eur.* 13: 200, 2004).

- 351 – *Potentilla fruticosa* L.: this ornamental shrub is a popular garden plant and is also increasingly observed as an escape from cultivation (Fl., Brab., Mosan; locally naturalizing on old walls, by railway tracks, etc.) (*AFB*: 706). It was therefore introduced in the key and a full account is provided. Like *P. rupestris*, this species belongs to subtribe Fragariinae and is well-delimited from Potentilleae according to molecular phylogenetic studies (Potter *et al.*, *Pl. Syst. Evol.* 266: 5-43, 2007; see also A. Kurtto & T. Eriksson, *Ann. Bot. Fennici* 40: 135-141, 2003; *Atlas Fl. Eur.* 13: 158-160, 2004). *P. fruticosa* (as well as other related species that are cultivated as ornamentals like *P. davurica* Nestler) is better accommodated in a separate

genus, *Dasiphora* Rafin. Corresponding names for these species in this genus [*D. fruticosa* (L.) Rydb. and *D. davurica* (Nestler) Komarov et Klob.-Alis.] were added as synonyms in NF6.

- 351 – *Duchesnea indica* (G. Jackson) Focke: the basionym for this combination being *Fragaria indica* G. Jackson, the author citation needed to be corrected. *Duchesnea* Smith belongs to the subtribe Potentilleae (not Fragariinae!) and molecular studies place it in *Potentilla* s.l. L. (Potter *et al.*, *Pl. Syst. Evol.* 266: 5-43, 2007). This taxonomy was not yet followed in NF6.

- 352 – *Fragaria ×ananassa* (Weston) Rozier: author citation corrected, F. Rozier (*Cours compl. Agric.* 5: 52, 1784, pro species) having made this combination much earlier than J. Decaisne & C.V. Naudin (*Amat. Jard.* 4: 331, 1872).

- 354-357 – *Alchemilla* L.: there were several nomenclatural adjustments to be made (following *Atlas Fl. Eur.* 14, 2007). The application of the binomial *A. pratensis* (F.W. Schmidt) Opiz as a synonym of *A. xanthochlora* Rothm. remains unclear. The species referred to as *A. vulgaris* L. in NF5 should be named *A. acutiloba* Opiz. (syn.: *A. vulgaris* auct. non L.). *A. pastoralis* Buser may be added as a synonym of *A. monticola* Opiz. The basionym of *A. hybrida* being *A. alpina* L. var. *hybrida* L. its author citation needed to be corrected [*A. hybrida* (L.) L.]. Finally, the recognition of two subspecies under *A. filicaulis* Buser seems critical, both being linked by intermediates.

- 361 – *Rosa henker-schulzei* Wissemann [syn.: *R. columnifera* (Schwertschläger) Henker et G. Schulze non Fries, *R. rubiginosa* L. subsp. *columnifera* Schwertschläger; see V. Wissemann, *Haussknechtia* 11: 83-86, 2006]: this critical species is intermediate between *R. rubiginosa* and *micrantha* Borrer ex Smith and may have been overlooked. It is known from several localities in Mar. (Belgium) and should be looked for elsewhere (*AFB*: 759; see also: H. Henker & G. Schulze, *Acta Rhodol.* 2: 13-17, 1999; H. Henker in G. Hegi, *Illustr. Fl. Mitteleuropa* 2C, 2003).

- 361 – *Rosa virginiana* J. Herrmann: cultivated as an ornamental shrub and sometimes observed as an escape since 2002 (F. Verloove, *Catal. Neoph. Belg.*: 72, 2006).

- 363 – *Rosa subcollina* (Christ) Vukot.: L.F. Vukotinović (in *Rad Jugoslav. Akad. Znan.* 83: 23, 1889) validly published this combination two years earlier than R. Keller (1891) did. The author citation needed to be corrected accordingly.

- 363 – *Rosa eglanteria* L.: this ambiguous name was finally rejected (Vienna Code: 478, 2006).

- 370 – *Eriobotrya japonica* (Thunb.) Lindl.: this Asian species is grown commercially for its edible fruit (loquat) and also cultivated as an ornamental plant. It often germinates from food refuse (pits) in urban habitats (basement walls, rough ground, pavement) and seems to persist well.

- 371-372 – *Cotoneaster* Med.: several additional species have recently been reported as escapes from cultivation

and were added: species with patent petals: *C. coriaceus* Franch. (incl. *C. lacteus* W. Smith), *C. integrifolius* (Roxb.) Klotz and *C. ×suecicus* Klotz (probably *C. conspicuus* Marquand × *dammeri* C.K. Schneider); species with erect petals: *C. divaricatus* Rehd. et E.H. Wilson, *C. hjelmqvistii* Flinck et Hylmö, *C. rehderi* Pojark. (syn.: *C. bullatus* Bois var. *macrophyllus* Rehd. et E.H. Wilson), *C. villosulus* (Rehd. et E.H. Wilson) Flinck et Hylmö and *C. zabelii* C.K. Schneider. (e.g. F. Verloove, *Catal. Neoph. Belg.*: 41-42, 2006; F. Verloove, *Monde Pl.* 494: 11-14, 2008).

- 373 – *Pyrus nivalis* Jacq.: accepted in NF6 in a wider sense as to include *P. salviifolia* DC. (J.J. Aldasoro *et al.*, *Bot. J. Linn. Soc.* 121: 143-158, 1996).

- 374 – *Crataegus* L. (hybrids): all hybrids known to occur within the territory of the *Nouvelle Flore* are very variable (at least in part as a result of backcrossing); those involving *C. rhididophylla* Gandoger sometimes occur in areas where this species does not occur (or no longer occurs) [L. Depypere *et al.*, *Belg. J. Bot.* 139(2): 139-152, 2007].

- 378-380 – *Sorbus* × *tomentella* Gandoger [*S. aria* (L.) Crantz × *torminalis* (L.) Crantz]: Gandoger's name for this hybrid (*Fl. Lyonnaise*: 90, 1875) predates *S. ×vagensis* Wilmott (*Proc. Linn. Soc. London* 146: 78, 1934). This is an occasional and unstable hybrid; it is sometimes seen among the parents but more often as isolated individuals.

- 380 – *Sorbus latifolia* (Lam.) Pers.: the exact identity of some populations within the territory of the *Nouvelle Flore* should be critically assessed, especially with respect to well-known populations immediately south of the area of the *Nouvelle Flore* (those from the Forêt de Fontainebleau for instance). Previous claims of *S. semiincisa* Borbás in NE Lorr. and Champ. [NF5, following J. Duvi-gneaud, *Nat. Mosana* 42(1): 24-32, 1989; see also G.H. Parent, *Adoxa* hors-série 2: 22, 2004] are erroneous and referable to hybrids of *S. aria* (L.) Crantz and *torminalis* (L.) Crantz, i.e. *S. remensis* Cornier (comm. B. Cornier).

- 380 – *Sorbus remensis* Cornier: this newly described species is a micro-endemic confined to a small area near Reims in Champ. (S of Montagne de Reims, Merfy and vicinity of Chalons-en-Champagne). Like *S. latifolia* (Lam.) Pers. it is believed to be a stable hybrid of *S. aria* (L.) Crantz and *torminalis* (L.) Crantz. As a result of partial apomixis these species, and the occasional hybrids between the putative parents, are often hard to distinguish [B. Cornier, *Bull. Mens. Soc. Linn. Lyon* 78(1/2): 27-46, 2009]. This new species is introduced in the key and a full account (incl. an illustration of a leaf) is presented.

- 381 – *Senna* Mill.: formerly included in a very broadly circumscribed genus *Cassia* L. but the generic status is no longer questioned [e.g. B.R. Randell, *Austral. Pl.* 20(162): 238-249, 2000].

- 386 – *Fabaceae* (adventive species): a list is provided with species from genera, others than those treated in de-

tail, that have been recorded as aliens; the following were added: *Aeschynomene americana* L. (F. Verloove, *Dumortiera* 88: 1-2, 2006), *Desmanthus illinoensis* (Michaux) McMillan ex Robinson et Fernald, *Dorycnium hirsutum* (L.) Seringe and *Vigna radiata* (L.) Wilczek (F. Verloove, *Catal. Neoph. Belg.*, 2006). *Hedysarum coronarium* L. is now usually accommodated in a segregate genus, *Sulla* Med. (B.H. Choi & H. Ohashi, *Taxon* 52: 567-576, 2003); a corresponding synonym in this genus was added in NF6 [*S. coronaria* (L.) Med.].

- 386 – *Fabaceae* (escaped ornamentals): two additional species have been recorded as escapes from cultivation: *Cytisophyllum sessilifolium* (L.) O.F. Lang (syn.: *Cytisus sessilifolius* L.) and *Halimodendron halodendron* (Pallas) Vos. The former is of particular interest: it is believed to be naturalized in Lorr. (G.H. Parent, *Adoxa* hors-série 2: 11, 2004) and native populations exist relatively close to the territory covered by the *Nouvelle Flore* (i.e. in the Aube department in Champ.; see P. Dupont, *Atlas partiel Fl. France*, 1990).

- 386 – *Styphnolobium japonicum* (L.) Schott: this ornamental tree, widely known as *Sophora japonica* L., is now accommodated in a segregate genus *Styphnolobium* Schott (S.M. Sousa & V.E. Rudd, *Ann. Missouri Bot. Gard.* 80: 270-283, 1993).

- 392-393 – *Colutea* × *media* Willd.: this hybrid (*C. arborescens* L. × *orientalis* Mill.) is frequently cultivated as an ornamental and increasingly seen as an escape. It seems locally naturalized, especially in Mar. and Lorr. It is introduced in the key (based on K. Browicz, *Monogr. Bot.* XIV: 136 p., 1963) and a full account is provided. Like elsewhere in Western Europe (e.g. R. Van der Meijden, *Heukels' Fl. Nederl.*, ed. 23: 359, 2005) it is much more frequent in cultivation than *C. orientalis*.

- 393 – *Astragalus hamosus* L.: recorded as an ephemeral alien in Ghent in 2001 (F. Verloove & G. Heyneman, *Dumortiera* 100: 19-24, 2012).

- 396 – *Vicia* L. (adventive species): the list with species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added in NF6: *V. assyriaca* Boiss., *V. hyrcanica* Fisch. et C.A. Mey., *V. melanops* Smith var. *loiseaui* d'Alleiz. ex Fridlender [syn.: *V. loiseaui* (d'Alleiz. ex Fridlender) Fridlender], *V. narbonensis* L. subsp. *serratifolia* (Jacq.) Cesati (syn.: *V. serratifolia* Jacq.) and *V. noeana* Reut. ex Boiss. [A. La-walrée, *Fl. Gén. Belg.* IV(II): 175-176, 1963; F. Verloove, *Catal. Neoph. Belg.*: 85, 2006; F. Verloove, *Dumortiera* 88: 4, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>].

- 397 – *Vicia tenuifolia* Roth subsp. *dalmatica* (A. Kerner) Greuter (syn.: *V. dalmatica* A. Kerner): this SE European subspecies has long been overlooked within the territory of the *Nouvelle Flore*. It is naturalized in two Belgian localities: Montagne Saint-Pierre (Brab. or.), where it is known since at least 1937; more recently it was also discovered in Engis (Mosan) (F. Verloove, *Dumortiera*

102: 40-44, 2013). Both subspecies are keyed-out in NF6 and full accounts are provided.

- 405 – *Trigonella* L.: the list with species reliably recorded within the territory of the *Nouvelle Flore* was updated: *T. arabica* Delile and *T. corniculata* (L.) L. have been added as ephemeral aliens (F. Verloove, *Catal. Neoph. Belg.*: 83, 2006).

- 412 – *Trifolium* L. (adventive species): two ephemeral aliens were added in NF6: *T. squarrosum* L. and *T. stellatum* L. (F. Verloove, *Catal. Neoph. Belg.*: 82, 2006).

- 416 – *Lotus corniculatus* L. subsp. *corniculatus*: a robust cultivated form with +/- hollow stems seems to be referable to var. *sativus* Hyl. It is increasingly sown for revegetation purposes (coal mining spoil heaps, canal banks, roadsides, etc.) and is very persistent. Naturalized populations are known at least from Camp. or. and Brab. occ. Hybridization with native populations of *L. corniculatus* is not unlikely.

- 416 – *Lotus glaber* Mill.: this ambiguous name was finally rejected (Vienna Code: 476, 2006).

- 422 – *Myriophyllum heterophyllum* Michaux: this aquatic ornamental was already recorded as an escape within the territory of the *Nouvelle Flore* in the past [G. Bouxin & J. Lambinon, *Nat. Mosana* 49(3): 94-97, “1996” 1997; R. van der Meijden *et al.*, *Gorteria* 25(6): 131, 1999] but populations turned out to be ephemeral or localized (the species was merely cited in NF5). However, since at least 1999 it is present and obviously well-naturalized in canals and other water bodies in Camp. (D. De Beer & R. De Vlaeminck, *Dumortiera* 94: 8-13, 2008). In similar habitats, it is widely dispersed in Fluv., especially in the valley of river Maas downstream of Maastricht (comm. J. Bruinsma 10.2008). A further expansion within the territory of the *Nouvelle Flore* seems possible. The species is introduced in the key in NF6 and a full account is provided.

- 427 – *Gaura* L.: *Gaura parviflora* Dougl. ex Lehmann (syn.: *Oenothera curtiflora* W.L. Wagner et Hoch) was formerly recorded as an ephemeral alien (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). Recent molecular and morphological data suggest the need to broaden the delimitation of *Oenothera* L. to include, among others, *Gaura* (W.L. Wagner *et al.*, *Syst. Bot. Monogr.* 83: 1-240, 2007). A synonym for the frequently cultivated *G. lindheimeri* Engelm. et A. Gray was added in NF6 [*O. lindheimeri* (Engelm. et A. Gray) W.L. Wagner et Hoch].

- 428-430 – *Oenothera* L.: the list with species reliably identified from the territory of the *Nouvelle Flore* was updated. The following taxa were added: *O. cambrica* Rostański, *O. depressa* Greene, *O. elata* Humb., Bonpl. et Kunth, *O. fruticosa* L. subsp. *glauca* (Michaux) Straley (syn.: *O. tetragona* Pursh) (not only cultivated as an ornamental but also seen as an escape), *O. issleri* Renner ex Rostański, *O. oehlkersii* Kappus ex Rostański, *O. paradoxia* Hudziok, *O. perangusta* R.R. Gates, *O. pycnocarpa*

Atkinson et Bartlett, *O. royfraseri* R.R. Gates, *O. rubricaulis* Kleb., *O. rubricauloides* Rostański and *O. wratislaviensis* Rostański ex Rostański (F. Verloove, *Catal. Neoph. Belg.*: 64, 2006). At least some of these species tend to naturalize, at least locally, for instance *O. issleri* (e.g. R. Jean & J. Delay, *Bull. Soc. Bot. Nord Fr.* 61: 37-42, 2008) and *O. rubricaulis*.

- 429 – *Oenothera fallax* Renner: this hybridogenous species (*O. biennis* L. × *glazioviana* Micheli) is one of the most frequent taxa of the genus within the territory of the *Nouvelle Flore* and therefore introduced in the key in NF6. It is not rare at all in Mar. (ruderalized coastal dunes) and fast spreading elsewhere (railway tracks, coal mining spoil heaps, rough ground, etc.).

- 432 – *Epilobium brachycarpum* C. Presl: a single plant of this North American species was discovered by a railway track in Loos (Lille, France; Brab. occ.) in 2002 (comm. D. Mercier). In 2008 it was seen in several additional localities in the very same area, always in abandoned railway yards or by railway tracks. It was also recorded near Maubeuge in Aulnoye-Aymeries (France; Mosan occ.) (F. Verloove & J. Lambinon, *Dumortiera* 96: 17-19, 2009). It is obviously spreading rapidly and a future wider naturalization in the area of the *Nouvelle Flore* is very likely. A note with distinguishing features and other relevant information was therefore introduced in NF6.

- 438 – *Elaeagnus* × *submacrophylla* Servettaz (*E. macrophylla* Thunb. × *pungens* Thunb.; syn.: *E. ×ebbingei* J. Doorenbos): C. Servettaz’ name [*Beihefte Bot. Zentralbl.* 25(1): 84-85, 1909] for this hybrid anticipates J. Doorenbos’ binomial (*Jaarb. Ned. Dendrol. Ver.* 17: 109, 1952) and has priority.

- 440-441 – *Cornus sanguinea* L.: native populations of this species belong to subsp. *sanguinea*. It is also a much planted ornamental shrub (mostly in public greenery) but these plantings usually are referable to a SE European taxon, subsp. *australis* (C.A. Mey.) Jáv. ex Soó (syn.: *C. australis* C.A. Mey.). This taxon, as well as more or less intermediate forms, are increasingly found as escapes and were probably overlooked for quite a long time (F. Verloove, *Dumortiera* 99: 7, 2011). It has become well-established and was therefore introduced in NF6.

- 444 – *Celastrus orbiculatus* Thunb.: ornamental liana found as an escape from cultivation in Antwerp in 2005 (J. Lambinon 05/B/557, F. Verloove *et al.*, LG). Apparently very persistent and therefore cited with some comments in NF6.

- 445 – *Euonymus hederaceus* Champ. ex Benth.: according to J.S. Ma (*Thaiszia* 11: 1-264, 2001), this is the correct name for the species usually referred to as *E. fortunei* (Turcz.) Hand.-Mazz.

- 446 – *Ilex* × *altaclerensis* (Loudon) Dallim. (*I. aquifolium* L. × *perado* Aiton): this artificial hybrid is frequently cultivated and has been recorded as an escape on several occasions (e.g. Zonnebeke, gemengd bos, 01.03.2009, F. Verloove 7524, LG). It is briefly characterized in NF6.

- 448 – *Euphorbiaceae* (adventive species): two additional (ephemeral) species were recently recorded, *Acalypha indica* L. and *Phyllanthus tenellus* Roxb. (F. Verloove, *Catal. Neoph. Belg.*: 25, 68, 2009).
- 452 – *Euphorbia* L. subgenus *Euphorbia* (alien species): two additional species were recorded, both as escapes from cultivation: *E. myrsinites* L. and *E. oblongata* Griseb. (Roeselare, Sterrebois, wood margin, 1 ex., 19.06.2009, F. Verloove 7649, LG). Belgian populations of *E. characias* belong to subsp. *wulfenii* (Hoppe ex Koch) A.R. Smith. This taxon is locally naturalized in Mar. (coastal dunes, e.g. Oostduinkerke, duinen, F. Verloove 7694, 8023, “en expansion”, LG) and is briefly characterized in NF6.
- 452 – *Euphorbia* L. subgenus *Chamaesyce* (adventive species): several additional species were recently recorded: *E. glomerifera* Millsp. [syn.: *Chamaesyce glomerifera* (Millsp.) L.C. Wheeler], *E. glyptosperma* Engelm. [syn.: *Chamaesyce glyptosperma* (Engelm.) Small] and *E. vermiculata* Rafin. [syn.: *Chamaesyce vermiculata* (Rafin.) House] (F. Verloove, *Catal. Neoph. Belg.*: 38-39, 2006; F. Verloove, *Dumortiera* 88: 3, 2006; for *E. vermiculata*: Heinsch, 23.09.2008, J. Lambinon 08/342 & F. Verloove *et al.*, LG).
- 454 – *Euphorbia dulcis* L. subsp. *purpurata* (Thuill.) Rothm.: at the subspecies rank, the epithet *purpurata* has priority over *incompta* [*E. verrucosa* L. subsp. *purpurata* (Thuill.) Cesati, 1844 vs. *E. dulcis* subsp. *incompta* (Cesati) Nyman, 1890]. The author citation needed to be corrected accordingly (K.P. Buttler & R. Hand, *Kochia* 2: 47, 2007).
- 454 – *Euphorbia prostrata* Ait.: this North American species is increasingly recorded within the territory of the *Nouvelle Flore* (mainly in railway yards and cemeteries) and was therefore introduced in the key and a full account provided (e.g. A. Bizot, *Bull. Soc. Hist. Nat. Ard.* 98: 19-33, “2008” 2009; F. Bedouet, *Bull. Soc. Bot. Nord Fr.* 60: 32, 2007; comm. A. Remacle 2008; etc.).
- 455 – *Ceanothus* × *delileanus* Spach (*C. americanus* L. × *coeruleus* Lag.): frequently cultivated as an ornamental shrub and recently seen as an escape (F. Verloove, *Catal. Neoph. Belg.*: 37, 2006). The epithet is usually spelled “*delilianus*” but this hybrid was apparently named in honour of A.R. Delile and thus should be named “*delileanus*” (art. 61, 32.7, 60C of the Code).
- 457 – *Parthenocissus vitacea* (Knerr) Hitchc.: the nomenclature of *P. inserta* (A. Kerner) Fritsch is very complex. Several authors, including recent ones (e.g. C.A. Stace, *New Flora Brit. Isl.*, 3th ed., 2010; L. Lu *et al.*, *Bot. J. Linn. Soc.* 168: 43-63, 2012), apply the binomial *Parthenocissus vitacea* for this species, but J.S. Pringle [*Michigan Botanist* 49(3): 73-78, 2010] demonstrated that *P. inserta* is the only correct name for it. It was useful, however, to add *P. vitacea* as a synonym in NF6.
- 460 – *Acer rufinerve* Siebold et Zucc.: this ornamental tree was recently found to reproduce freely in woodland in Halle (Vroenbossen) and Bon-Secours (Bois de Bon-Secours), both in Brab. Future invasive behaviour is likely (L. Saad *et al.*, *Parc et Réserves* 64(4): 22, 2009).
- 461 – *Cardiospermum grandiflorum* Swartz: formerly recorded as an ephemeral alien (F. Verloove, *Catal. Neoph. Belg.*: 36, 2006).
- 467 – *Oxalis* L. (adventive or ornamental species): some authors (see for instance J. Holub in B. Slavík B., *Květena České Republiky* 5: 179-191, 1997) tend to segregate *Oxalis* L. in several smaller units. Three ornamental species found as escapes in the territory of the *Nouvelle Flore* are then accommodated in the genus *Sassia* Molina. For convenience their corresponding names in this genus were added in NF6: *S. debilis* (Humb., Bonpl. et Kunth) Holub (syn.: *O. debilis* Humb., Bonpl. et Kunth), *S. latifolia* (Kunth) Holub (syn.: *O. latifolia* Kunth) and *S. tetraphylla* (Cav.) Holub (syn.: *O. tetraphylla* Cav.). *Oxalis corymbosa* DC. is best considered conspecific with *O. debilis* (F. Verloove, *Catal. Neoph. Belg.*: 65, 2006).
- 467 – *Oxalis stricta* L.: this binomial has not (yet) been rejected and most contemporary European (and American!) floras seem to adopt this name rather than *O. fontana* Bunge [see G. Eiten, *Taxon* 4: 99-105, 1955; M.F. Wat-son, *Bot. J. Linn. Soc.* 101(4): 347-362, 1981; R.C.M.J. van Moorsel *et al.*, *Gorteria* 26(2/3): 31-35, 2000]; this name was applied in NF6 as well. Its corresponding synonym in the segregate genus *Xanthoxalis* Small was also added [*X. stricta* (L.) Small].
- 468 – *Pelargonium capitatum* (L.) Ait.: cultivated ornamental rarely seen as an escape (F. Verloove, *Catal. Neoph. Belg.*: 66, 2006).
- 471 – *Geranium* L. (ornamental species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added, both recently observed as escapes from cultivation: *G. × cantabrigiense* Yeo [*G. dalmaticum* (Beck.) Rech. f. × *macrorrhizum* L.] and *G. dalmaticum* (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 476 – *Erodium manescavi* Coss.: cultivated ornamental rarely seen as an escape (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 480 – *Impatiens balfourii* Hook. f.: ornamental species, originating from the Himalayas, increasingly reported as an escape from cultivation in several areas of the *Nouvelle Flore* and thus introduced in the key of NF6 (F. Verloove, *Catal. Neoph. Belg.*: 55, 2006; R. van der Meijden & W.J. Holverda, *Gorteria* 32: 16, 2006; *AFF*: 159).
- 487 – *Araliaceae* (ornamental species): two escapes from cultivation were added and briefly characterized: *Aralia racemosa* L. and *Fatsia japonica* (Murray) Decaisne et Planch. (F. Verloove, *Catal. Neoph. Belg.*: 30 and 50, 2006).
- 499 – *Ridolfia segetum* (Guss.) Moris: the basionym for this binomial being *Meum segetum* Guss. (*Fl. Sicul. Prodr.* 1: 346, 1827), the author citation needed to be cor-

rected (J.-P. Reduron, *Ombell. France* 4: 2173, 2008). The citation "(L.) Moris" is also erroneous, *Anethum segetum* L. being typified in the sense of *Anethum graveolens* L.

- 500 – *Eryngium giganteum* Bieb.: cultivated ornamental rarely seen as an escape (F. Verloove, *Catal. Neoph. Belg.*: 49, 2006).
- 502 – *Anthriscus sylvestris* (L.) Hoffmann: R. Fabri [*Fl. Générale Belg.* V(2): 148-149, 1993] drew the attention to Belgian populations of this species that tend towards *A. nitida* (Wahlenb.) Hazsl., mostly on behalf of their wider primary leaf divisions. However, such plants probably belong to *Anthriscus sylvestris* var. *latisecta* Druce, rather than to *A. nitida* (J.-P. Reduron, *Ombell. France* 1: 375-417, 2007). The taxonomic value of this variety should be assessed.
- 504 – *Scandix balansae* Reut. ex Boiss.: recorded as an ephemeral alien (F. Verloove, *Catal. Neoph. Belg.*: 75, 2006).
- 505 – *Torilis arvensis* (Huds.) Link subsp. *purpurata* (Ten.) Hayek: the taxonomy of the *T. arvensis* complex is controversial. Recent authors tend to elevate this taxon to specific rank (e.g. J.-P. Reduron, *Ombell. France* 5: 2483, 2007). The corresponding name was added as a synonym in NF6 (*T. africana* Spreng.).
- 505 – *Orlaya platycarpus* Koch: this is the name to be used for the species previously called *O. daucooides* (L.) Greuter, since R.B. Fernandes (*Bol. Soc. Brot.* 41: 395-407, 1967) typified the latter in the sense of *O. grandiflora* (L.) Hoffmann (e.g. J. Gamisan & A. Manfredi, *Candollea* 58: 279-280, 2003; J.-P. Reduron, *Ombell. France* 2: 750-767, 2007; id. 4: 1918-1923, 2008).
- 506 – *Bupleurum fruticosum* L.: recorded in 1975 as an escape from cultivation in Spa (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 507 – *Apium graveolens* L. (varieties): according to J.-P. Reduron (*Ombell. France* 1: 432, 2007) the combinations at varietal rank [var. *dulce* (Mill.) Poiret and var. *rapaceum* (Mill.) Poiret] were first established by Poiret, not by De Candolle as per NF5.
- 508 – *Apium nodiflorum* (L.) Lag. var. *ochreatum* (DC.) O. Kuntze: the author citation of this variety needed to be corrected since Babington (*Man. Brit. Bot.*, ed. 8: 157, 1881) established this combination under *Helosciadium nodiflorum* (L.) Koch, not under *Apium nodiflorum*. *Helosciadium* Koch increasingly being accepted as a segregate genus it seemed useful to also provide, as a synonym, the combination for this variety under that genus. The earliest validly published combination seems to be that of De Candolle (in Lam. & DC., *Prodr.* 4: 104, 1830) [*H. nodiflorum* var. *ochreatum* (DC.) DC.].
- 508 – *Petroselinum crispum* (Mill.) Fuss: Fuss' combination (*Fl. Transsilv.*: 254, 1866) has priority over that of (Nyman ex) Hill (*Hand-List Herb. Pl. Roy. Bot. Gard., Kew* ed. 3: 122, 1925) (J.-P. Reduron, *Ombell. France* 4: 1991-1996, 2008).

- 508 – *Sison segetum* L.: in accordance with molecular studies [and also corroborated by morphological and anatomical data; see for instance R. Fabri, *Fl. Gén. Belg.* V(2): 278, 1993] *Petroselinum segetum* (L.) Koch was transferred to the genus *Sison* L. (J.-P. Reduron, *Ombell. France* 5: 2368-2382, 2008).

- 511 – *Pimpinella major* (L.) Huds.: the name for a form with pinnatisectly divided leaves was corrected. At varietal rank Sprengel's name (with basionym *P. magna* L. var. *dissecta* Spreng., 1818) predates Beck's name (basionym *P. magna* var. *bipinnata* G. Beck, 1892) (J.-P. Reduron, *Ombell. France* 4: 2073-2076, 2008).

- 511 – *Pimpinella saxifraga* L.: as for *P. major*, the name for a form with pinnatisectly divided leaves was corrected: var. *dissectifolia* Wallr. [syn.: var. *seselifolia* Rouy et E.G. Camus; var. *hircina* (Leers) Schinz f. *dissectiformis* Weide] (J.-P. Reduron, *Ombell. France* 4: 2107-2108, 2008).

- 512 – *Pimpinella peregrina* L.: this species was already included in NF5 as ephemeral alien, based on a record in Ieper in 2000 (F. Verloove, *Dumortiera* 78: 18-19, 2001). Since 2003, however, it has also been recorded on the grassy, thermophilous talus slopes of the Albertkanaal in the surroundings of Lanaken (Brab. or.) where it seems well-established (J. Lambinon *et al.*, *Dumortiera* 85-87: 23, 2005). In the very same area it was also observed in Brunssum (Netherlands) [G. Dirkse *et al.*, *Gorteria* 33(1): 21-27, 2007]. It was therefore introduced in the key in NF6 and a full account was provided.

- 515 – *Seseli libanotis* (L.) Koch: in NF5 *Libanotis pyrenaica* (L.) Bourgeau ex Nyman subsp. *eulibanotis* O. Schwartz was given as a synonym. However, this taxon is probably better accepted at varietal rank and then should be called var. *libanotis* (L.) Reduron (J.-P. Reduron, *Ombell. France* 3: 1683-1694, 2007).

- 519 – *Angelica sylvestris* L. (infraspecific taxa): in NF5 var. *elatioir* Wahlenb. [syn.: *A. sylvestris* subsp. *montana* (Brot.) Arcang.] was distinguished, a variety with narrower leaf segments, rarely occurring in Haute Ard. However, according to J.-P. Reduron (*Ombell. France* 1: 340, 2007), the nomenclatural types of these taxa belong to subsp. *sylvestris*. A new subspecies was therefore described (subsp. *bernardae* Reduron). Its distinguishing features are provided in NF6 but separation from subsp. *sylvestris* appears to be critical (intermediate forms are known to occur). Assessing the exact identity of populations from Haute Ard. also will require further study.

- 519 – *Angelica archangelica* L. (infraspecific taxa): the exact identity of some populations from the surroundings of Calais in France (Port-Vert and harbor area) remains uncertain. These plants have been ascribed to subsp. *litoralis* (Fries) Thell. but this still requires confirmation (J.-P. Reduron, *Ombell. France* 1: 308-311, 2007; *AFF*: 105).

- 522 – *Peucedanum carvifolia* Vill.: several recent studies, mainly by Pimenov (e.g. M.G. Pimenov *et al.*, *Willdenowia* 37: 465-502, 2007), place *Holandrea* Reduron,

Charpin et Pimenov in *Dichoropetalum* Fenzl. This new taxonomy was not yet followed in NF6 but the corresponding name in this genus was added as a synonym [*D. carvifolia* (Vill.) Pimenov et Kljuykov]. According to some authors (A. Soldano *et al.* in F. Conti *et al.*, *An annotated checklist of the Italian vascular flora*: 20-21, 2005) *Peucedanum carvifolia* is an illegitimate name, to be replaced by *P. carvifolium-chabraei* (Crantz) Soldano. However, the latter appears to be invalid as well since it was based on von Crantz' trinomial (and thus invalid) *Selinum carvifolium-chabraei*.

- 523 – *Pastinaca sativa* L. subsp. *sativa*: var. *arvensis* Pers. (1805) has priority over var. *sylvestris* (Mill.) DC. (1830) (J.-P. Reduron, *Ombell. France* 4: 1962-1964, 2008).

- 524 – *Heracleum sphondylium* L. (varieties): the author citation of two varieties needed to be corrected: var. *stenophyllum* Gaudin (Gaudin's basionym was already at varietal rank; see *Fl. Helv.* 2: 318, 1828) and the correct name for var. *angustifolium* (Crantz) C.C. Gmel. appears to be var. *dissectum* Le Gall (J.-P. Reduron, *Ombell. France* 3: 1466-1470, 2007).

- 525 – *Daucus carota* L. (infraspecific taxa): the author citation of some of the infraspecific taxa needed to be corrected. Subsp. *sativus* (Hoffmann) Schübl. et Martens (1834) predates Arcangeli's combination (1882) at this rank and subsp. *gummifer* (Syme) Hook. f. is based on *D. carota* var. *gummifer* Syme. The latter is not always well separated from subsp. *sativus*, probably as a result of hybridization. Intermediate plants can be ascribed to *D. carota* L. nsubsp. *intermedius* (Corb.) Reduron et Lambinon [J.-P. Reduron, *Ombell. France* 2: 968-1084, 2007; see also: A.J. Pujadas Salva, *Anales Jard. Bot. Madrid* 59(2): 368-375, 2002].

- 525-526 – *Hydrocotyle* L.: this genus is traditionally placed within Apiaceae. However, it is rather aberrant and therefore accommodated in a distinct subfamily (Hydrocotyloideae) or even segregated from Apiaceae (Hydrocotylaceae). Recent phylogenetic molecular research (G.T. Chandler & G.M. Plunkett, *Bot. J. Linn. Soc.* 144: 123-147, 2004) has supported exclusion of *Hydrocotyle* from Apiaceae and places it as a sister clade of Araliaceae. According to C.A. Stace (*New Flora Brit. Isles*, 3th ed., 2010) it appears anomalous in both Araliaceae and Apiaceae and it is possibly better treated as a family of its own. Pending further study it was maintained in Apiaceae in NF6 but a short remark was added.

- 526 – *Hydrocotyle novae-zelandiae* DC.: found as a lawn weed in Antwerp Zoo (F. Billiet, *Dumortiera* 82: 26-27, 2004).

- 531 – *Gentianella amarella* (L.) Börner: within the territory of the *Nouvelle Flore* the separation of this species and *G. uliginosa* (Willd.) Börner is not straightforward and mostly relies on calyx characters that are rather subtle. Ecologically, both are well separated, *G. amarella* being confined to chalk grasslands (Boul.) and *G. uligi-*

nosa occurring in wet depressions in coastal dunes (Mar.). British populations of the latter (see for instance C.A. Stace, *New Flora Brit. Isl.*, ed. 2: 521-523, 1997; also: J. Greimler *et al.*, *Plant Syst. Evol.* 248: 143-169, 2004) clearly differ from *G. amarella*. It may well be that our populations of *G. uliginosa* in fact belong to stable hybrids between both species. According to C.A. Stace i.c. such hybrids are fertile and show “all grades of intermediacy (...) sometimes pure *G. uliginosa* becoming rare or absent”. Given our current knowledge, *G. amarella* was accepted as a variable species in NF6 and *G. uliginosa* no longer distinguished. Future research – including molecular studies – should clarify the issue.

- 534 – *Asclepias incarnata* L.: sometimes cultivated as an ornamental and observed on several occasions as an escape since 2009 (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 537 – *Fraxinus ×stenobotrys* Gandoger: in NF5 intermediate plants of *F. excelsior* L. and *F. angustifolia* Vahl subsp. *oxycarpa* (Bieb. ex Willd.) Franco et Rocha were already referred to. Such plants are sometimes seen in Lorr. and Tert. Par. where both species occur sympatrically and can be assigned to *F. ×stenobotrys*. Also elsewhere within the territory of the *Nouvelle Flore* (Fl., Brab. occ. and Mosan) *F. angustifolia* is often not very typical and pure populations are probably rare.

- 537 – *Fraxinus pennsylvanica* Marshall: ornamental tree from eastern North America, increasingly seen as an escape from cultivation, especially on river and canal banks in Fl. and Brab. (F. Verloove, *Dumortiera* 99: 2-6, 2011). It was added to the key and a full account was provided. *F. pennsylvanica* is a fairly variable species with two, more or less, distinct varieties within the territory of the *Nouvelle Flore*: var. *pennsylvanica* and var. *subintegerrima* (Vahl) Murray [syn.: subsp. *novae-angliae* (Wesmael) Buttler], the latter being the usual escape in Europe (K.P. Buttler, *Bot. Naturschutz Hessen* 18: 15-22, 2005).

- 542 – *Solanaceae* (alien species): three additional species, from genera others than those treated in detail, were recently recorded as (ephemeral) escapes from cultivation: *Capsicum annuum* L., *Jaltomata procumbens* (Cav.) J.L. Gentry and *Petunia integrifolia* (Hook.) Schinz et Thell. (F. Verloove, *Catal. Neoph. Belg.*, 2006).

- 543 – *Solanum* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *S. aethiopicum* L. var. *aculeatum* Dun. and *S. ptychanthum* Dun. (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 546-547 – *Physalis* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *P. angulata* L. var. *pendula* (Rydb.) Waterfall (syn.: *P. pendula* Rydb.), *P. grisea* (Waterfall) M. Martínez, *P. ixocarpa* Brot. ex Hornem. and *P. longifolia* Nutt. subsp. *subglabrata* (Mack. et Bush) Cronq. (F. Verloove,

Dumortiera 80: 49-51, 2003; Verloove, *Catal. Neoph. Belg.*: 68, 2006).

- 547 – *Nicotiana* L. (ornamental species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *N. alata* Link et Otto and *N. forgetiana* Hemsl. (F. Verloove, *Catal. Neoph. Belg.*: 63, 2006).

- 547 – *Nicotiana* × *sanderæ* Sander ex Will. Wats.: Sander's name was a *nomen nudum*, subsequently validated by Watson (*Fl. & Sylva* 2: 216, 1904). The author citation was corrected accordingly (T.H. Goodspeed, *The genus Nicotiana*: 492, 1954; *Dictionary of Gardening* 3: 319, 1992).

- 548 – *Ipomoea* L. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *I. ×leucantha* Jacq. (syn.: *I. lacunosa* f. *purpurea* Fernald) and *I. tricolor* Cav. (F. Verloove, *Catal. Neoph. Belg.*: 55-56, 2006; id., *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 548 – *Calystegia* R. Brown: this genus is morphologically well separated from *Convolvulus* L. and forms a monophyletic group. However, molecular data show that it is in fact nested in the latter (S. Stefanovic *et al.*, *Syst. Bot.* 28: 791-806, 2003). It should therefore be included in *Convolvulus*, or *Convolvulus* should further be divided in several additional genera. As in similar cases, this new taxonomy was not followed in NF6 but two useful synonyms were added: *Convolvulus dubius* J. Gilbert (syn.: *Calystegia pulchra* Brumm. et Heywood) and *C. silvaticus* Kit. [syn.: *C. silvatica* (Kit.) Griseb.].

- 549 – *Calystegia silvatica* (Kit.) Griseb.: recently recorded on several occasions within the territory of the *Nouvelle Flore* (especially in the western parts where it seems well-naturalized), possibly as an escape from cultivation. The species was probably overlooked as a result of confusion with native *C. sepium* (L.) R. Brown (F. Verloove, *Dumortiera* 100 : 25-29, 2012). It was introduced in the key of NF6 and a full account was provided.

- 550 – *Cuscuta gronovii* Willd. ex Schult.: in NF5 (uncritically following T.G. Yunker, *North Am. Fl.* 4: 17, 1965; see also: N. Feinbrun in *Fl. Eur.* 3: 76, 1972) it was stated that all European populations are referable to var. *calyptata* Engelm. This is rather surprising given the narrowly restricted native distribution range of this taxon [M. Costea *et al.*, *Sida* 22(1): 197-207, 2006]. Costea *et al.* i.c. ascribe European populations to var. *gronovii* (although no European collections are referred to in their publication). Its infraspecific variability surely requires further study in Europe.

- 553 – *Polemoniaceae* (ornamental species): *Gilia achilleifolia* Benth., *G. tricolor* Benth. and *Phlox subulata* L. have been recorded as escapes from cultivation (F. Verloove, *Catal. Neoph. Belg.*: 52, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 557 – *Boraginaceae* (adventive species): two new ephemeral aliens were added, *Arnebia decumbens* (Vent.) Coss. et Kralik and *Nonea lutea* (Desr.) DC. The latter is known as a weed of arable land in Stokkem since at least 2004 and perhaps more or less established (F. Verloove, *Catal. Neoph. Belg.*: 63, 2006).

- 558 – *Heliotropium suaveolens* Bieb.: recorded as an ephemeral alien in Antwerp in 2005 (F. Verloove, *Catal. Neoph. Belg.*: 53, 2006).

- 564 – *Symphytum caucasicum* M. Bieb.: this cultivated ornamental has been repeatedly seen as an escape since 2009 (Brab., Camp.). It is briefly characterized in NF6.

- 565 – *Symphytum* × *caeruleum* Petitmengin ex Thell.: Petitmengin's binomial was invalid but subsequently validated by Thellung (*Vierteljahrschr. Naturf. Ges. Zürich* 52: 459, 1907); the author citation was corrected accordingly in NF6 (cf. P. Sell & G. Murrell, *Fl. Gr. Brit. Irel.* 3: 520, 2009).

- 565 – *Symphytum grandiflorum* DC. and *S. ×hidcotense* P.D. Sell (probably of *S. asperum* Lepechin × *grandiflorum* × *officinale* L. parentage): these two cultivated ornamentals were introduced in the key in NF6 and full accounts were provided (the former was already briefly cited in NF5). Both are increasingly seen as escapes and are locally well-established, mostly in Fl. and Brab. (based on various recent collections in BR and LG, mostly by the authors).

- 566 – *Myosotis alpestris* F.W. Schmidt: cultivated ornamental, rarely seen as an escape (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 567 – *Myosotis discolor* Pers.: a taxonomically complex and poorly understood group. In the territory of the *Nouvelle Flore* two subspecies can be distinguished, subsp. *discolor* (mainly from dry sandy soils) and subsp. *dubia* (Arrondeau) Blaise (mostly from more compact, often clayish soils) but nothing is known about their frequency and chorology. Distinguishing features for both subspecies are provided in NF6. Additional cytotaxonomical studies would be useful (the former most likely is a polyploid, while the latter appears to be a diploid).

- 570 – *Verbena* L. (ornamental species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *V. aristigera* S. Moore [syn.: *Glandularia aristigera* (S. Moore) Tronc.] and *V. rigida* Spreng. (F. Verloove, *Catal. Neoph. Belg.*: 84, 2006).

- 570 – *Verbena* × *hybrida* Grönland et Rümpler [syn.: *Glandularia* × *hybrida* (Grönland et Rümpler) Nesom et Pruski]: the author citation of this cultivated ornamental (rarely seen as an escape) needed to be corrected in accordance with G. Nesom & J.F. Pruski (*Brittonia* 44: 494-496, 1992).

- 574 – *Lamiaceae* (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species was

added: *Amethystea caerulea* L. The adventive *Perilla frutescens* (L.) Britton, erroneously considered a cultivated ornamental in NF5, was also added (F. Verloove, *Catal. Neoph. Belg.*, 2006).

- 575 – *Lamiaceae* (ornamental species): a list is provided with species from genera, others than those treated in detail, that have been recorded as escapes; in addition to those already cited in NF5, the following were added: *Agastache rugosa* (Fisch. et C.A. Mey.) O. Kuntze, *Lavandula dentata* L., *Perovskia abrotanoides* Kar. and *Phlomis russeliana* (Sims) Benth. (F. Verloove, *Catal. Neoph. Belg.*, 2006, and furthermore based on various recent collections in BR and LG).

- 581 – *Mentha* × *gracilis* Sole nsubsp. *veronensis* (Lebeau) Lambinon (syn.: *M.* × *gentilis* auct. non L. nsubsp. *veronensis* Lebeau) (*M. arvensis* L. × *spicata* L. subsp. *spicata*): this hybrid was found in 2007 on a coal mining spoil heap in Landgraaf (Brab. or., Netherlands) (terril Wilhelmina, 18.07.2007, P. Hauteclair s.n., LG), probably introduced on purpose (revegetation). It is opposed to nsubsp. *gracilis* in NF6 and distinguishing features are discussed. It may well have been overlooked so far. This nothotaxon corresponds with the plant described by J. Lebeau (*Bull. Jard. Bot. Nat. Belg.* 44: 253, 1974) from Italy as *M.* × *gentilis* L. (non Sole) nsubsp. *veronensis* Lebeau. A new combination, at nothosubspecies rank, was made in NF6.

- 588 – *Calamintha nepeta* (L.) Savi: two subspecies are distinguishable within the territory of the *Nouvelle Flore*, subsp. *nepeta* [syn.: *C. nepetoides* Jord., *Satureja calamintha* (L.) Scheele subsp. *nepetoides* (Jord.) Br.-Bl.] and subsp. *spruneri* (Boiss.) Nyman; only the latter was mentioned in NF5. Both are now keyed out and treated in detail. Subsp. *nepeta* was long overlooked (known, in fact, since 1939) and is increasingly seen on old walls in urban habitats, on coal mining spoil heaps, etc., mainly in Fl. and Camp. (e.g. Brugge, Veurne, Zolder, etc.; F. Verloove, *Catal. Neoph. Belg.*: 32, 2006, and furthermore based on various recent collections in BR and LG).

- 589 – *Nepeta racemosa* Lam.: this is the correct name for the species previously named *N. mussinii* Spreng. ex Henckel, Lamarck's binomial (*Encycl.* 1: 711, 1785) pre-dating that of Henckel (*Adumbr. Pl. Hort. Hal.* 15, 1806) (e.g. I.C. Hedge & J.M. Lamond, *Fl. Turkey* 7: 276, 1982).

- 598 – *Stachys byzantina* K. Koch: this ornamental species is regularly found as an escape from cultivation (since 1882 already; cf. F. Verloove, *Catal. Neoph. Belg.*: 80). It is usually found near gardens and on rough ground (and often only temporarily persisting) but it was also found in a Mesobrometum in a rather remote locality (Sosoye, 08.2008, J. Lambinon 08/293, LG). In NF6 the species was introduced in the key and a full account was provided.

- 598 – *Leonurus cardiaca* L. subsp. *villosus* (Dum.-d'Urv.) Hyl.: this eastern counterpart of subsp. *cardiaca* has repeatedly been recorded within the territory of the *Nouvelle Flore* since the first half of the 19th century (F.

Verloove, *Catal. Neoph. Belg.*: 57). It has densely hairy stems with long and patent hairs and its leaves are often more deeply incised. A note was added in NF6.

- 599 – *Prunella grandiflora* (L.) Scholler: a population discovered in 1991 near Sangatte (Boul.) belongs to subsp. *pyrenaica* (Gren. et Godr.) A. et O. Bolòs on account of its hastate leaf base and evidently represents an introduction (J. Lambinon, *Dumortiera* 85-87: 69, 2005).

- 601 – *Ajuga* × *hampeana* A. Braun et Vatke: F. Llamas & C. Aedo [*Taxon* 57(2): 651-652, 2008] proposed to conserve this name (1872) against *A.* × *pseudopyramidalis* Schur (1852) and *A.* × *rotundifolia* Willk. et Cutanda (1859), the latter two binomials in fact being referable to *A. pyramidalis* L.

- 608 – *Callitriche truncata* Guss. subsp. *occidentalis* (Rouy) Schotsm.: the author of this combination, used in NF5, needed to be corrected, Braun-Blanquet's combination being referable to the rank of "race", not of subspecies (R.V. Lansdown, *Watsonia* 26: 107, 2006).

- 609 – *Callitriche hamulata* Kütz. ex Koch: several recent authors have united this species and *C. brutia* Petagna, considering them as mere varieties of the latter (e.g. R.V. Lansdown, *Watsonia* 26: 105-120, 2006; id., *Water-starworts (Callitriche) of Europe*, BSBI Handbook n° 11, 2008; P. Sell & G. Murrell, *Fl. Great Brit. Irel.* 3: 419-424, 2009). In NF6 both species were maintained but a synonym at varietal rank was added [*C. brutia* var. *hamulata* (Kütz. ex Koch) Lansdown].

- 611 – *Plantago cynops* L. and *P. psyllium* L.: these ambiguous names, if typified in accordance with Linnaeus' original circumscription (1753), refer to *P. afra* L. and *P. arenaria* Waldst. et Kit. respectively. W.L. Applequist [*Taxon* 55(1): 235-236, 2006] proposed to formally reject these binomials.

- 617-618 – *Scrophulariaceae* (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *Bellardia trixago* (L.) All. (syn.: *Bartsia trixago* L.) and *Hebenstretia integrifolia* L. (the latter sometimes accommodated in a separate family, Selaginaceae) (F. Verloove, *Catal. Neoph. Belg.*, 2006).

- 618 – *Scrophulariaceae* (ornamental species): a list is provided with species from genera, others than those treated in detail, that have been recorded as escapes; in addition to those cited in NF5, the following were added: *Anarrhinum bellidifolium* (L.) Willd., *Asarina procumbens* Mill., *Collinsia heterophylla* Buist ex Graham, *Erinus alpinus* L. (e.g. Thuin, centre ville, vieux murs, 24.05.2008, F. Verloove 7158, LG;) and *Nemesia caerulea* Hiern. (F. Verloove, *Catal. Neoph. Belg.*, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 619 – *Verbascum* × *divaricatum* Kittel (syn.: *V. pseudophoeniceum* Reichard; *V. blattaria* L. × *phoeniceum* L.): recorded in Leuven in 1954, among the parent species (F. Verloove, *Catal. Neoph. Belg.*: 84, 2006).

- 619 – *Verbascum speciosum* Schrad.: cultivated ornamental increasingly recorded as an escape and locally more or less established (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 620 – *Verbascum* ×*brockmuelleri* Ruhmer (*V. nigrum* L. × *phlomoides* L.): recorded in Thulin in 2010, among the parent species (Thulin, Haine canalisée, 22.09.2010, F. Verloove 8259, LG).
- 626 – *Veronica glauca* Smith: recorded as an ephemeral grain alien in 1954 (F. Verloove, *Catal. Neoph. Belg.*: 85, 2006).
- 630-631 – *Linaria* Mill. (adventive species): the list with alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *Linaria bipartita* (Vent.) Desf. and *L. chalapensis* (L.) Mill. (F. Verloove, *Dumortiera* 88: 3, 2006; F. Verloove, *Catal. Neoph. Belg.*: 58-59, 2006).
- 632 – *Chaenorrhinum origanifolium* (L.) Kostel.: ornamental species, known as an (ephemeral) escape from cultivation since 2001 in urban habitats, for instance in Antwerp and Brussels (Bruxelles, rue Tenbosch, 05.09.2001, P. Croisier s.n., LG; F. Verloove, *Catal. Neoph. Belg.*: 38, 2006).
- 632 – *Antirrhinum graniticum* Rothm.: cultivated ornamental recorded in 1975 as an escape from cultivation (F. Verloove, *Catal. Neoph. Belg.*: 30, 2006).
- 633 – *Scrophularia scopolii* Pers.: recorded on a quay wall of river Dendre near Ath in 1976, without obvious vector of introduction (F. Verloove, *Catal. Neoph. Belg.*: 75, 2006).
- 633 – *Scrophularia canina* L.: this Mediterranean species is known within the territory of the *Nouvelle Flore* (only in France) since at least 1949 when it was discovered on a coal mining spoil heap in Rieulay (Brab. occ.) and subsequently regularly confirmed in this area (A. Berton, *Bull. Soc. Bot. Fr.* 111: 172, 1967; J. Lambinon, *Dumortiera* 85-87: 26, 2005). In the 1970s it was also recorded in Lorr. mér. (see previous editions of NF) and a small population was discovered in 2003 in ruderalized coastal dunes near Gravelines (Mar. français). Also seen, in 1995, in a railway yard in Hazebrouck (Brab. occ.; *AFF*: 349). It is obviously spreading, keyed-out in NF6 and a full account is provided. Its infraspecific variability within the territory of the *Nouvelle Flore* should be assessed although most populations seem to belong to subsp. *canina*.
- 634-636 – *Lindernia palustris* F.X. Hartm.: this is the correct name for the species previously named *L. procumbens* (Krockner) Borbás., Hartmann's binomial (in *Primae Lin. Inst. Bot.*: 77, 1767) by far being the oldest validly published (A. Soldano, *Riv. Piem. St. Nat.* 67: 70-71, 1993).
- 638 – *Melampyrum pratense* L.: assessing the infraspecific variability of this species within the territory of the *Nouvelle Flore* requires further study. Robust plants from calciferous soils with wider upper leaves may be referable to subsp. *commutatum* (Tausch ex A. Kern) C.E. Britton (C.A. Stace, *New Flora Brit. Isl.*, 3th ed.: 642, 2010; *Plant Crib* 1998: 269). Such plants have been recorded in Boul. and Lorr. (both in France) but seem to be linked with subsp. *pratense* by intermediate forms. For convenience both subspecies are keyed out in NF6.
- 641-642 – *Odontites jaubertianus* (Boreau) D. Dietrich ex Walp.: this species is a stable hybrid of *O. luteus* (L.) Clairv. and *O. vernus* (Bellardi) Dum. subsp. *serotinus* Corb. It is unclear whether or not plants recently found on coal mining spoil heaps in Camp. or. (Genk, Zolder) represent tetraploid hybrids, accidentally arisen *in situ* among the parents (*O. ×sennenii* Rouy) or genuine *O. jaubertianus*.
- 650-651 – *Orobanchae laevis* L. and *O. major* L.: these ambiguous names were finally rejected (Vienna Code: 477, 2006).
- 652 – *Orobanchae alsatica* Kirschl.: the usual host for this species is *Peucedanum cervaria* (L.) Lapeyr. However, according to G.H. Parent (*Adoxa* hors-série 2: 18, 2004) in Lorr. it is more regularly found on *Seseli libanotis* (L.) Koch and *S. montanum* L.; hence, populations from this area should be assigned to subsp. *libanotidis* (Rupr.) Tzvelev (syn.: *O. bartlingii* Griseb.). This taxon seems to be poorly understood and there appears to be little agreement among experts. According to C.A.J. Kreutz (*Orobanchae*: 52-53 and 68-69, 1995) it has a more eastern distribution while H. Uhlich *et al.* (*Die Sommerwurzarten Europas*: 235, 1995) even report it from France. Moreover, host plants of both subsp. *alsatica* and *libanotidis* seem to overlap (H. Uhlich *et al.* l.c.) and include, for both taxa, species of *Peucedanum* L. and *Seseli* L. For convenience distinguishing features for both subspecies are provided in NF6 but the exact identity of populations from Lorr. should be re-assessed.
- 653 – *Catalpa ×erubescens* Carr. (*C. bignonioides* Walter × *ovata* G. Don): this widely cultivated ornamental tree has been recorded as an escape (e.g. Beringen, 01.07.2007, J. Lambinon 07/24, LG). It is briefly characterized in NF6.
- 653 – *Pedaliaceae* and *Sesamum orientale* L. (syn.: *S. indicum* L.): an additional family, genus and species were introduced in NF6. *S. orientale* is widely cultivated as an oilseed crop and also included in commercial bird seed mixtures. It has been found as an ephemeral alien in Belgium since 2004 (F. Verloove, *Catal. Neoph. Belg.*: 76, 2006).
- 659 – *Trachelium caeruleum* L.: cultivated ornamental, rarely seen as an escape on old walls in urban habitats since 2005, for instance in Antwerp and Ghent (F. Verloove, *Catal. Neoph. Belg.*: 81, 2006).
- 663 – *Campanula fenestrellata* Feer: this cultivated ornamental, related to *C. portenschlagiana* Schult. and *C. poscharskyana* Degen (both already reported as escapes in NF5), is known from an old quay wall in Humbeek since 2001 (A. Ronse, *Dumortiera* 90: 10-12, 2006). It

is briefly characterized and opposed against these related species in NF6.

- 665 – *Pratia pedunculata* (R. Brown) Benth. (syn.: *Lobelia pedunculata* R. Brown): discovered on two occasions in lawns in Camp. (Malle and Zoersel), probably as an escape from cultivation (F. Verloove, *Dumortiera* 89: 23-24, 2006). Apparently very persistent and likely to naturalize locally (see also: E.J. Clement, *B.S.B.I. News* 95: 46-47, 2004).

- 666 – *Lobelia* L. (ornamental species): the list of ornamental species that have been reliably recorded as escapes from cultivation within the territory of the *Nouvelle Flore* was updated. The following species were added: *L. sessilifolia* Lambert and *L. siphilitica* L. (F. Verloove, *Catal. Neoph. Belg.*: 59, 2006). None of these seems to be genuinely naturalized at present.

- 671 – *Galium tenuissimum* Bieb.: formerly recorded as an ephemeral alien, mostly from wool (F. Verloove, *Catal. Neoph. Belg.*: 51, 2006).

- 672 – *Galium* × *pomeranicum* Retz. (*G. mollugo* L. subsp. *erectum* Syme × *verum* L.): this is a fairly variable hybrid. A rather distinct, very compact nothovariety from sand dunes is worth distinguishing: nvar. *guillemontii* (Corb.) B. Toussaint et Lambinon *comb. et stat. nov.* (basionym: *G. ×guillemontii* Corb.) (*G. mollugo* subsp. *erectum* var. *dunense* Corb. × *verum* var. *maritimum* DC.).

- 676 – *Sambucus canadensis* L.: this ornamental tree from North America (closely related to our native *S. nigra* L.) is increasingly observed as an escape from cultivation, especially in Camp. [e.g. Genk (Bokrijk), rand van droogvallend ven, 02.10.2010, F. Verloove 8269, BR]. It is briefly characterized in NF6.

- 678 – *Lonicera acuminata* Wall. (syn.: *L. henryi* Hemsl.): ornamental liana found as an escape from cultivation, e.g. in Ghent (Gent, in bomen langs de rivier, 09.08.2009, F. Verloove 7720, LG). In horticulture this species is usually known as *L. henryi*. According to Q. Yang *et al.* (*Fl. China* 19: 620-641, 2011) *L. acuminata* and *L. henryi* are conspecific, the former binomial having priority.

- 680 – *Viburnum* L. (ornamental species): the list with ornamental species escaped from cultivation that have been reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *V. rhytidophyllum* Hemsl. (F. Verloove, *Catal. Neoph. Belg.*: 85, 2006) and *V. tinus* L. (e.g. Gent, Sint-Amandsberg, verwilderd, 25.02.2007, F. Verloove 6635, LG).

- 702 – *Otanthus maritimus* (L.) Hoffmanns. et Link: on the basis of multidisciplinary studies (including molecular data) *Otanthus* Hoffmanns. et Link was merged with *Achillea* L. by some authors (F. Ehrendorfer & Y.-P. Guo, *Willdenowia* 35: 49-54, 2005). The corresponding name in the latter genus was added in NF6 [*A. maritima* (L.) Ehrend. et Y.-P. Guo].

- 702 – *Asteraceae* (ornamental species): a list is provided with species from genera, others than those treated in

detail, that have been recorded as escapes; the following were added: *Anaphalis triplinervis* (Sims.) C.B. Clarke, *Helenium ×clementii* Verloove et Lambinon, *Heliopsis helianthoides* (L.) Sweet, *Leucanthemella serotina* (L.) Tzvelev, *Ligularia dentata* (A. Gray) H. Hara, *Melampodium montanum* Benth., *Osteospermum jucundum* (Phillips) Norlindh and *Sinacalia tangutica* (Maxim.) R. Nordenstam (F. Verloove, *Catal. Neoph. Belg.*, 2006; F. Verloove & J. Lambinon, *Syst. Geogr. Pl.* 76: 217-220, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). *Verbesina alternifolia* (L.) Britton, in NF5 classified among the alien species, more likely is an escaped ornamental.

- 702 – *Asteraceae* (adventive species): the list of alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *Adenostyles alliariae* (Gouan) A. Kerner, *Amphichyris dracunculoides* (DC.) Nutt. [syn.: *Gutierrezia dracunculoides* (DC.) S.T. Blake], *Catananche caerulea* L., *Emilia fosbergii* Nicolson and *Tripleurospermum decipiens* (Fisch. et C.A. Mey.) Bornm. (F. Verloove, *Catal. Neoph. Belg.*, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). *Centaurea repens* L. is now accommodated in the segregate genus *Acroptilon* Cass. [as *A. repens* (L.) DC.] and molecular studies by N. Garcia-Jacas *et al.* (*Pl. Syst. Evol.* 223: 185-199, 2000) demonstrated that *Cnicus* L. is in fact nested within *Centaurea* L. A synonym in the latter genus for *Cnicus benedictus* L. [*Centaurea benedictus* (L.) L.] was added in NF6.

- 702 – *Eupatorium* L. (ornamental species): the list with ornamental species escaped from cultivation that have been reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *E. maculatum* L. [syn.: *Eutrochium maculatum* (L.) E.E. Lamont] (naturalized in a marshy meadow in Sint-Martens-Latem near Gent; see W. Slabbaert & F. Verloove, *Dumortiera* 88: 12-15, 2006), *E. perfoliatum* L. and *E. purpureum* L. [syn.: *Eutrochium purpureum* (L.) E.E. Lamont] (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). *E. rugosum* Hoult., already cited as an escape from cultivation in NF5, is now accommodated in the segregate genus *Ageratina* Spach [e.g. N. Hind, *Plantsman* N.S. 5(3): 185-189, 2006]. Its corresponding name in this genus [*A. altissima* (L.) King et Robson] was added as a synonym in NF6.

- 703 – *Solidago* L. (ephemeral alien species): *S. graminifolia* (L.) Salisb. was traditionally placed in *Solidago* but molecular as well as morphological data support its segregation (A. Haines, *Fl. North Am.* 20: 97-100, 2006). Its alternative name [*Euthamia graminifolia* (L.) Nutt.] was added as a synonym in NF6. Belgian records of *S. rugosa* Mill. (given as doubtful in NF5) have been confirmed by G.H. Morton (F. Verloove, *Catal. Neoph. Belg.*: 79, 2006).

- 703 – *Solidago gigantea* Ait.: in NF5 the tetraploid *S. serotina* Ait. was given as a synonym for this species but a lower taxonomic rank seems more appropriate [subsp.

serotina (O. Kuntze) McNeill]. All Eurasian populations indeed seem to be tetraploid (D.R. Schlaepfer *et al.*, *Journ. Biogeography* 35: 2119-2127, 2008), genuine (and diploid) subsp. *gigantea* probably being absent.

- 703 – *Solidago altissima* L.: this binomial was included in the synonymy of *S. canadensis* L. in NF5. However, it is a distinct species (A. Haines, *Fl. North Am.* 20: 97-100, 2006) that probably has not been recorded in Europe so far.

- 704-707 – *Aster* L.: recent morphological and cytological research has considerably modified the generic boundaries of this genus (G.L. Nesom, *Phytologia* 77: 141-297, 1994) and this new taxonomy has become widely accepted now. However, as in similar cases, it was not yet followed in NF6 but corresponding names in the segregate genera have been added as synonyms: *Eurybia divaricata* (L.) Nesom (syn.: *Aster divaricatus* L.), *Galatella linosyris* (L.) Reichenb. f. [syn.: *A. linosyris* (L.) Bernh.], *Symphotrichum dumosum* (L.) Nesom (syn.: *A. dumosus* L.), *S. ericoides* (L.) Nesom (syn.: *A. ericoides* L.), *S. laeve* (L.) Nesom (syn.: *A. laevis* L.), *S. lanceolatum* (Willd.) Nesom (syn.: *A. lanceolatus* Willd.), *S. novae-angliae* (L.) Nesom (syn.: *A. novae-angliae* L.), *S. novi-belgii* (L.) Nesom (syn.: *A. novi-belgii* L.), *S. salignum* (Willd.) Nesom (syn.: *A. salignus* Willd.), *S. versicolor* (Willd.) Nesom (syn.: *A. versicolor* Willd.) and *Tripolium pannonicum* (Jacq.) Dobrocz. subsp. *tripolium* (L.) Greuter (syn.: *A. tripolium* L.).

- 705 – *Aster* L. (ephemeral adventive species): the list with adventive and/or ornamental species escaped from cultivation that have been reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *A. brachyactis* S.T. Blake [syn.: *Symphotrichum ciliatum* (Ledeb.) Nesom] and *A. lateriflorus* (L.) Britton [syn.: *S. lateriflorum* (L.) A. et D. Lóve] (F. Verloove, *Catal. Neoph. Belg.*: 31-32, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 705 – *Aster tripolium* L.: the correct name for a variety with all florets tubular seems to be var. *flosculosus* (S.F. Gray) P.D. Sell (P. Sell & G. Murrell, *Fl. Great Brit. Irel.* 4: 555, 2006), based on *Eurybia maritima* S.F. Gray var. *flosculosa* S.F. Gray [although a lower taxonomic rank may be more appropriate, i.e. f. *discoideus* (Reichenb.) Vuyck; see R. van der Meijden, *Heukels' Fl. Nederl.*, ed. 23: 593, 2005].

- 707 – *×Conyzigeron huelsenii* (Vatke) Rauschert [*Erigeron acris* L. *× Conyza canadensis* (L.) Cronq.]: very rare intergeneric hybrid, recently seen with the parents [Heinsch (Stockem), near railway yard, timber storage, 23.09.2008, F. Verloove 7427, BR].

- 707 – *Erigeron acris* L.: the gender of the species epithet, 'acer' (masculine), needed to be corrected to 'acris' (feminine), since in botanical Latin only the feminine epithet is applied (W.T. Stearn, *Botanical Latin*: 95, 1983).

- 707-708 – *Erigeron annuus* (L.) Desf.: this is a very variable species. Two additional species have been claimed from Belgium: *E. septentrionalis* Fernald et Wiegand

[syn.: *E. annuus* subsp. *septentrionalis* (Fernald et Wiegand) Wagenitz, *E. strigosus* Muhlenb. ex Willd. var. *septentrionalis* (Fernald et Wiegand) Fernald, *E. ramosus* (Walter) Britton, Sterns et Pogg. var. *septentrionalis* Fernald et Wiegand, *Stenactis strigosa* (Muhlenb. ex Willd.) DC. var. *septentrionale* (Fernald et Wiegand) J. Duvinéaud et Lambinon, *Phalacroloma annuum* (L.) Dum. subsp. *septentrionale* (Fernald et Wiegand) Adema] and *E. strigosus* subsp. *strigosus* [syn.: *E. ramosus*, *E. annuus* subsp. *strigosus* (Muhlenb. ex Willd.) Wagenitz, *Stenactis strigosa* (Muhlenb. ex Willd.) DC. var. *strigosa*, *Phalacroloma annuum* subsp. *strigosum* (Muhlenb. ex Willd.) Adema]. Apparent intermediates between *Erigeron annuus* and *E. septentrionalis* are frequently encountered and they cannot be distinguished unambiguously in Belgium (F. Verloove, *Ingeburgerde Pl. Vl.*, 2002). Indeed, D. Frey *et al.* [*Bot. Helv.* 113(1): 1-14, 2003] proved that they are in fact conspecific. *Erigeron strigosus*, on the contrary, has, still according to D. Frey *et al.* l.c. never been confirmed from Europe, all records being referable to *E. annuus*. In NF6 these three taxa are still upheld but their taxonomic value is questioned.

- 708-709 – *Conyza ×mixta* Fouc. et Neyraud [syn.: *Erigeron ×flahaultianus* Thell.; *C. bonariensis* (L.) Cronq. *× canadensis* (L.) Cronq.]: recorded with the parents on rough ground in Antwerp in 2002 (F. Verloove, *Catal. Neoph. Belg.*: 41, 2006).

- 709 – *Conyza bilbaoana* J. Rémy: this South American species was already briefly characterized in NF5. By now, although still rare, it has spread in large parts of the territory of the *Nouvelle Flore* (presence confirmed in Mar., Fl., Camp., Brab. occ., Lorr.). It was therefore keyed out in NF6 and a full account was provided. This species is very closely related to and, at least according to some authors, probably conspecific with *C. floribunda* Kunth. If both were to be united, the latter binomial has priority.

- 713 – *Gnaphalium pensylvanicum* Willd. [syn.: *Gamochaeta pensylvanica* (Willd.) Cabrera]: recorded as an ephemeral alien since the 19th century (F. Verloove, *Catal. Neoph. Belg.*: 52, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 713 – *Helichrysum bracteatum* (Vent.) Andrews: according to A.A. Anderberg (*Opera Botanica* 104: 1-195, 1991) this species is better accommodated in a segregate genus, *Xerochrysum* Tzvelev. Its corresponding name in that genus [*X. bracteatum* (Vent.) Tzvelev] was added as a synonym in NF6.

- 713 – *Helichrysum italicum* (Roth) G. Don and *H. petiolare* Hilliard et B.L. Burt: cultivated ornamentals, recently recorded as escapes (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 714 – *Inula crithmoides* L. [syn.: *Limbarda crithmoides* (L.) Dum.]: a single specimen of this mainly Mediterranean species (also present in coastal areas in SW Europe, to the north up to the British Isles) was discovered in 2006 in Goedereede (De Kwade Hoek) (Mar. sept.) [B. Kers *et*

al., *Gorteria* 33(3): 77-82, 2008]. It is briefly characterized in NF6.

- 714 – *Inula racemosa* Hook. f.: apparently confused for some time with the similar *I. helenium* L. Discovered in 2001 near Kortrijk and obviously naturalized there (F. Verloove, *Dumortiera* 94: 4-5, 2008). In the intervening years reported from several different additional localities and now probably less rare than *I. helenium*. Merely cited in NF6, but a full account in a future edition seems necessary.

- 715 – *Pulicaria paludosa* Link.: recently recorded as an ephemeral grain alien in the Antwerp port area (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 716 – *Ambrosia psilostachya* DC.: in accordance with, for instance, J.L. Strother (*Fl. North Am.* 21: 10-18, 2006), this species and *A. coronopifolia* Torr. et A. Gray are considered conspecific, the former name having priority. The latter is sometimes accepted at a lower taxonomic rank [var. *coronopifolia* (Torr. et A. Gray) Farwell] and separated from var. *psilostachya* on the basis of a different type of involucre indumentum. Distinguishing features are provided in NF6 but intermediate forms seem to occur.

- 719 – *Iva xanthiifolia* Nutt.: this North American weed was included for a long time in *Iva* L. but molecular phylogenetic research supports its transfer to the monotypic genus *Cyclachaena* Fresen. (e.g. B.M. Miao *et al.*, *Pl. Syst. Evol.* 195: 1-12, 1995). Its corresponding name in the latter genus was added as a synonym in NF6 [*C. xanthiifolia* (Nutt.) Fresen.].

- 719 – *Coreopsis tinctoria* Nutt.: in NF5 this species was, erroneously, assigned to Linnaeus. It was evidently described by Nuttall [*J. Acad. Nat. Sci. Philadelphia* 2(1): 114-115, 1821].

- 720 – *Helianthus* L. (ornamental species): the list of alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *H. debilis* Nutt. and *H. salicifolius* A. Dietrich (F. Verloove, *Catal. Neoph. Belg.*: 53, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 723 – *Tagetes tenuifolia* Cav.: ornamental species, rarely recorded as an escape from cultivation (F. Verloove, *Catal. Neoph. Belg.*: 81, 2006).

- 723-724 – *Anthemis* L.: the generic limits of *Anthemis* have long been controversial and poorly understood. Several former subgenera (e.g. *Chamaemelum* Mill. and *Cota* J. Gay) are now given generic rank which is in accordance with recent molecular phylogenetic studies (e.g. C. Oberprieler, *Taxon* 50(3): 745-762, 2001; C. Oberprieler *et al.*, *Willdenowia* 37: 89-114, 2007; R.M. Lo Presti *et al.*, *Taxon* 59(5): 1441-1456, 2010). Corresponding alternative names in segregate genera were added as synonyms in NF6 for the following species: *Cota altissima* (L.) A. Gray (syn.: *Anthemis altissima* L.) and *C. austriaca* (Jacq.) Schultz-Bip. (syn.: *A. austriaca* Jacq.).

- 724 – *Achillea* L. (ornamental species): the list of alien species reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *A. cartilaginea* Ledeb. ex Reichenb. and *A. filipendulina* Lam. (F. Verloove, *Catal. Neoph. Belg.*: 25, 2006; F. Verloove, *Dumortiera* 94: 1-8, 2008).

- 725 – *Achillea millefolium* L.: this very variable species is represented within the territory of the *Nouvelle Flore* by native and introduced plants. The former evidently belong with *A. millefolium* s.str., but populations from highly artificial habitats (e.g. coal mining spoil heaps) are clearly different and distinguished, for instance, by very narrow leaves (even the lowermost usually not exceeding 10 mm in width). Such plants have tentatively been ascribed to *A. collina* (J. Becker ex Wirtg.) Heimerl. [syn.: *A. millefolium* subsp. *collina* (J. Becker ex Wirtg.) Oborný] but this identity was not confirmed by F. Ehrendorfer (Vienna). Cytotaxonomical studies of these introduced plants will be required to assess their genuine identity.

- 726 – *Matricaria recutita* L.: indigenous (or archaeophytic) populations belong to var. *recutita* (achene without corona). Var. *coronata* (Boiss.) Fertig was formerly recorded as a wool alien in the valley of river Vesdre (F. Verloove, *Catal. Neoph. Belg.*: 61, 2006).

- 726 – *Matricaria maritima* L. subsp. *inodora* (L.) Soó: in accordance with W.L. Applequist (*Taxon* 51: 757-761, 2002), subspecies rank is maintained but author citation at this rank has been corrected. The following synonyms have also been added: *Tripleurospermum inodorum* (L.) Schultz-Bip. and *T. maritimum* (L.) Koch subsp. *inodorum* (L.) Hyl. ex Applequist. The distinction between subsp. *maritima* and *inodora* is not always straightforward, especially in areas where both grow in close proximity (Mar.). Hybridization is very likely then and plants with intermediate features are sometimes encountered.

- 726 – *Glebionis segetum* (L.) Fourr.: robust forms of this species (up to 120 cm tall) with more deeply divided leaves are sometimes grown for ornament; such forms closely resemble *G. coronaria* (L.) Tzvelev [J. Lambinon *et al.*, *L'Erable* 30(2): 10-11, 2006].

- 728 – *Tanacetum coccineum* (Willd.) Grierson (syn.: *Chrysanthemum coccineum* Willd.): cultivated ornamental, rarely observed as an escape (F. Verloove, *Catal. Neoph. Belg.*: 81, 2006).

- 728 – *Cotula coronopifolia* L.: this South African species is known within the territory of the *Nouvelle Flore* since quite a long time (formerly mostly as a wool alien; e.g. F. Verloove, *Catal. Neoph. Belg.*: 42, 2006) but long remained strictly ephemeral. In recent years it is increasingly recorded and seems well established locally, especially in Mar. (Uitkerke, Antwerp port area), but also in Camp. and Brab. occ. (F. Verloove *et al.*, *Dumortiera* 83: 1-4, 2004). The genus is included in the key to the genera of Asteraceae and a species account is provided in NF6.

- 728 – *Cotula turbinata* L.: this former wool alien was long accommodated in a segregate genus [as *Cenia turbi-*

nata (L.) Pers.] but this taxonomy has become out-of-date (e.g. E.J. Clement & M.C. Foster, *Alien Pl. Brit. Isl.*: 343, 1994).

- 729 – *Artemisia sieversiana* Ehrh.: ephemeral grain alien, recently recorded in the Ghent port area (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 732 – *Petasites japonicus* (Sieb. et Zucc.) Maxim.: plants in cultivation as well as in the wild always seem to belong to subsp. *giganteus* Kitam. (J.-M. Lecron, *Dumortiera* 98: 13-22, 2010).

- 733-739 – *Senecio* L. is a polyphyletic genus. Recent molecular studies support the segregation of a genus *Jacobaea* Mill. [P.B. Pelser *et al.*, *Am. J. Bot.* 89(6): 929-939, 2002]. Generic status of the latter is also supported by hybridization behaviour: there are several hybrids within *Jacobaea* while there are none between *Jacobaea* and *Senecio* s.str. However, morphologically both genera are poorly distinguished. Therefore, this taxonomy was not yet followed in NF6 but, for convenience, alternative names in *Jacobaea* were added as synonyms: *Jacobaea aquatica* (Hill) P. Gaertn., B. Mey. et Scherb. (syn.: *Senecio aquaticus* Hill), *J. erucifolia* (L.) P. Gaertn., B. Mey. et Scherb. (syn.: *S. erucifolius* L.), *J. vulgaris* P. Gaertn. (syn.: *S. jacobaea* L.), *J. maritima* (L.) Pelser et Meijden (syn.: *S. cineraria* DC.) and *J. paludosa* (L.) P. Gaertn., B. Mey. et Scherb. (syn.: *S. paludosus* L.).

- 736 – *Senecio paludosus* L.: recent studies (e.g. I. Hodálová *et al.*, *Bot. Helv.* 112: 137-151, 2002; K. Marshall *et al.*, *Annales Bot. Fenn.* 40: 373-379, 2003) divide this species in three subspecies. Only subsp. *angustifolius* Holub (syn.: var. *subinteger* Rouy) seems to be present within the territory of the *Nouvelle Flore*, subsp. *paludosus* being confined to N, C and E Europe. However, some populations appear to be more or less intermediate and the taxonomic value of these subspecies may be questionable.

- 738 – *Senecio cineraria* DC.: the taxonomy and nomenclature of the group to which this species belongs is very complex. P. Sell & G. Murrell (*Fl. Gr. Brit. Irel.* 4: 490-491, 2006) refer to British plants as *S. ambiguus* (Biv.) DC., a binomial that, indeed, has priority over *S. cineraria*; *S. bicolor* (Willd.) Tod., another name frequently applied, is an illegitimate name. However, other authors accept both as distinct species [e.g. P.B. Pelser *et al.*, *Am. J. Bot.* 89(6): 929-939, 2002]; if both were accepted, it is not clear to which species the cultivated and escaped plants from western Europe should be assigned. Moreover, Italian botanists (e.g. F. Conti *et al.*, *Checklist Italian Vasc. Fl.*: 31, 2005) subsume *S. cineraria* under yet another species, *S. gibbosus* (Guss.) DC. [as subsp. *cineraria* (DC.) Peruzzi, N.G. Passal. et Soldano]. Pending further taxonomical studies, preferably in the species' centre of diversity in the central Mediterranean region, the name *S. cineraria* was upheld in NF6 but some additional, useful synonyms were added.

- 738 – *Senecio jacobaea* L.: relatively small plants (max. 50 cm tall) with all florets tubular and all achenes pubes-

cent may be distinguished as subsp. *dunensis* (Dum.) Kaderleit et P.D. Sell (P. Sell & G. Murrell, *Fl. Gr. Brit. Irel.* 4: 494-495, 2006). This taxon is confined to sea dunes and reaches its southern distributional limit in Belgium. It is not to be confused with discoid forms of subsp. *jacobaea* (var. *discoideus* Wimm. et Grab.) which are rarely encountered in inland localities.

- 738-739 – *Senecio aquaticus* Hill (subspecies): according to P. Sell & G. Murrell (*Fl. Gr. Brit. Irel.* 4: 495, 2006), subsp. *barbareifolius* (Wimm. et Grab.) A. Pedersen and subsp. *erraticus* (Bertol.) Tourlet. are distinct entities. However, with the distinguishing features provided, Belgian collections are hardly ascribable to one of both. Moreover, most authors seem to synonymize the two subspecies (e.g. D. Jeanmonod, *Compl. Prodr. Fl. Corse*, Asteraceae II: 41, 2004). The author citation of subsp. *barbareifolius* needed to be corrected, Pedersen's combination (*Bot. Tidskr.* 57: 173, 1961) having priority over Walter's [*Bot. J. Linn. Soc.* 71(4): 273, 1975].

- 740 – *Doronicum columnae* Ten.: plants occurring within the territory of the *Nouvelle Flore* (as escapes from cultivation) slightly differ from authentic populations from SE Europe: inflorescences often have 2-3 capitula (vs. a single) and the indumentum comprises short glandular as well as longer, eglandular hairs (vs. exclusively glandular hairs). Such plants probably do not belong to genuine *D. columnae* and may represent hybrids of uncertain parentage that require further study.

- 740 – *Doronicum ×excelsum* (N.E. Brown) Stace: plants within the territory of the *Nouvelle Flore* formerly ascribed to *D. orientalis* Hoffmann [J. Duvalneaud, *Nat. Mosana* 45(3): 81-92, 1992] in fact belong to this complex horticultural hybrid, probably involving *D. columnae* Ten., *pardalianches* L. and *plantagineum* L. (C. Stace, *New Flora Brit. Isl.*, ed. 2: 745-746, 1997; J.R. Edmondson in *Eur. Gard. Fl.* 6: 637-638, 2000; P. Sell & G. Murrell, *Fl. Gr. Brit. Irel.* 4: 507-509, 2006; see also F. Verloove & J. Lambinon, *Syst. Geogr. Pl.* 78: 72-73, 2008).

- 741 – *Echinops bannaticus* Rochel ex Schrad.: this ornamental species is increasingly seen as an escape (mainly in Mar., Brab., Mosan). It is keyed out in NF6 and a full account is provided.

- 744 – *Carduus nutans* L. (subspecies): three subspecies were distinguished in NF5 [native subsp. *nutans* and non-native subsp. *leiophyllus* (Petrovič) Arènes and subsp. *alpicola* (Gillot) Chassagne et Arènes]. However, not a single herbarium collection of the latter from the territory of the *Nouvelle Flore* seems to exist and subsp. *leiophyllus* was only reliably recorded before 1950 (F. Verloove, *Catal. Neoph. Belg.*: 37, 2006), although some recent records in Mar. may refer to this taxon (surroundings of Dunkerque in France; comm. B. Toussaint 12.2009). The identification key for the subspecies was removed in NF6 but at least subsp. *leiophyllus* (with larger flower heads and wider phyllaries) should be looked for.

- 748 – *Onopordum macracanthum* Schousb.: cultivated ornamental, observed in 1973 as an ephemeral escape (F. Verloove, *Catal. Neoph. Belg.*: 65, 2006).
- 748 – *Centaurea* L.: the generic limits of *Centaurea* have long been controversial. As traditionally circumscribed it is polyphyletic. Some segregate genera have now become more or less widely accepted [e.g. *Acroptilon* Cass., *Amberboa* (Pers.) Less., *Mantisalca* Cass., *Volutaria* Cass.], but molecular phylogenetic studies will surely re-define the limits of *Centaurea*. N. Garcia-Jacas *et al.* (*Pl. Syst. Evol.* 223: 185-199, 2000) already showed that *Cnicus* L. is in fact nested within *Centaurea*. *Cyanus* Mill., on the contrary, is better segregated from the latter (e.g. I. Boršić *et al.*, *Intern. Journ. Pl. Sc.* 172: 238-249, 2011). This new taxonomy was not yet followed in NF6 but corresponding names were added as synonyms: *Cyanus montanus* (L.) Hill (syn.: *Centaurea montana* L.) and *C. segetum* Hill (syn.: *C. cyanus* L.).
- 749 – *Centaurea pectinata* L.: ephemeral alien, recorded in 2004 (F. Verloove, *Catal. Neoph. Belg.*: 37, 2006).
- 749 – *Centaurea* × *psammogena* Gayer (*C. diffusa* Lam. × *stoebe* L.): a small population was discovered by a disused railway track in Hyon-Ciply near Mons in 2006. This fertile hybrid, known to spread independently of the parental species, vanished soon after its discovery (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 762-763 – *Taraxacum* L. section *Erythrosperma* (Lindb. f.) Dahlst.: *T. perincisum* (J. Murr) J. Murr is the correct name for the species named *T. oxoniense* Dahlst. (syn.: *T. helveticum* Dahlst.) in NF5. Two additional microspecies, both fairly common, at least locally, were introduced in the key: *T. clemens* Matysiak and *T. fulviforme* Dahlst. (comm. J.-P. Matysiak 04.2010).
- 770 – *Taraxacum* L. section *Hamata* H. Øllgaard: the list of microspecies belonging to this section was completed in NF6: *T. atactum* Sahlin et v. Soest, *T. hamiferum* Dahlst., *T. kernianum* Hagend., v. Soest et Zevenb., *T. lamprophyllum* Christians. and *T. subericinum* Hagend., v. Soest et Zevenb. were added (based on H. Øllgaard, *Plant Syst. Evol.* 141: 199-217, 1983; *AFF*: 157).
- 770 – *Taraxacum* L. section *Ruderalia* Kirschner, J. Øllgaard et Štěpánek: in the group with species with reddish petioles and with anthers lacking pollen, the very common *T. debrayi* Hagend., v. Soest et Zevenb. was added [S. Hagendijk *et al.*, *Acta Bot. Neerl.* 21(4): 436-438, 1972].
- 771 – *Sonchus tenerrimus* L.: ephemeral alien, occasionally recorded since 2004 (F. Verloove, *Catal. Neoph. Belg.*: 79, 2006).
- 773 – *Cicerbita macrophylla* (Willd.) Wallr.: the genera *Cicerbita* Wallr. and *Lactuca* L. are sometimes united (e.g. W. Greuter, *Willdenowia* 33: 229-238, 2003); corresponding synonyms in the latter genus were added [*L. macrophylla* (Willd.) A. Gray subsp. *macrophylla* and subsp. *uralensis* (Rouy) N. Kilian et Greuter].
- 775 – *Crepis foetida* L. subsp. *rhoeadifolia* (Bieb.) Čelak.: this SE European counterpart of native subsp. *foetida* was recently discovered on coal mining spoil heaps in Camp. or. (F. Verloove, *Dumortiera* 94: 3-4, 2008). It is seemingly well-established, spreading locally and therefore briefly characterized in NF6.
- 779-781 – *Hieracium* L. subgenus *Pilosella*: it is still not clear whether or not *Pilosella* Hill is sufficiently distinct from *Hieracium* to be accepted as a segregate genus. Most species are readily separated by the presence of above ground stolons (always absent in *Hieracium* s.str.), ribs of achenes projected towards the apex and pappus hairs arranged in a single series (in two series in *Hieracium* s.str.). Moreover, ligules are often red-striped below (or rarely entirely reddish). An increasing number of recent authors tend to accept *Pilosella* at generic level (e.g. C. Stace, *New Flora Brit. Isl.*, ed. 3: 720-722, 2010; P. Sell & G. Murrell, *Fl. Gr. Brit. Irel.* 4: 209, 2006; D.J. Mabberley, *Mabberley's plant-book*, ed. 3, 2008). In NF6 a conservative taxonomy was maintained but corresponding names in *Pilosella* were provided for all taxa involved: *P. aurantiaca* (L.) F.W. Schultz et Schultz-Bip. (syn.: *H. aurantiacum* L.), *P. bauhini* (Schult. ex Besser) Arv.-Touv. (syn.: *H. bauhini* Schult. ex Besser), *P. caespitosa* (Dum.) P.D. Sell et C. West (syn.: *H. caespitosum* Dum.), *P. flagellaris* (Willd. ex Schlecht.) P.D. Sell et C. West (syn.: *H. flagellare* Willd. ex Schlecht.), *P. lactucella* (Wallr.) P.D. Sell et C. West (syn.: *H. lactucella* Wallr.), *P. officinarum* F.W. Schultz et Schultz-Bip. (syn.: *H. pilosella* L.), *P. peleteriana* (Mérat) F.W. Schultz et Schultz-Bip. (syn.: *H. peleterianum* Mérat), *P. piloselloides* (Vill.) Soják (syn.: *H. piloselloides* Vill.) and *P. ziziana* (Tausch) F.W. Schultz et Schultz-Bip. (syn.: *H. zizianum* Tausch).
- 779 – *Hieracium* × *duplex* Peter: in NF5 this nothotaxon was considered a hybrid of *H. caespitosum* Dum. × *pilosella* L. parentage. However, according to G. Gottschlich (*Standardliste Farn-Blütenpfl. Deutschl.*: 261, 1998) it is a cross of *H. caespitosum* and *saussureoides* (Arv.-Touv.) Arv.-Touv. The correct name for this hybrid appears to be *H. ×macrostolonum* G. Schneider (1923). Hybrids of the same formula that are nearer to *H. caespitosum* are referable to *H. ×prussicum* Naeg. et Peter (1885), the latter having priority if both were united. Collections of both these nothotaxa have been confirmed from Belgium by G. Gottschlich, respectively from Ampsin and Martelange. A third taxon with intermediate features between *H. caespitosum* and *pilosella* is believed to be a fertile, hybridogenous species, *H. flagellare* (see below).
- 780 – *Hieracium flagellare* Willd. ex Schlecht.: this species was already cited in NF5 as occurring in French Lorr. (Argonne). In recent years, however, it has also been recorded on several occasions in Belgium, in abandoned quarries in Herbeumont (Ard. mér.) and Onhaye (Mosan) [A. Remacle, *Nat. Mosana* 57(4): 81-110, 2005]. It seems perfectly naturalized and may well have been overlooked elsewhere within the territory of the *Nouvelle Flore*. It is

therefore introduced in the key in NF6 and a full account is provided.

- 780-781 – *Hieracium bauhini* Schult. ex Besser: the Vienna Code (2006: Recommendation 60 C3, Ex. 1) explicitly imposes that the genitive of Bauhin is ‘*bauhini*’ (instead of ‘*bauhinii*’).

- 781 – *Hieracium wiesbaurianum* Uechtr.: perhaps not specifically distinct from *H. glaucinum* Jord. (J.-M. Tison, *Soc. Ech. Pl. Vasc. Eur. Bass. Médit., Bull.* 29: 42-43, 2004).

- 786 – *Sagittaria latifolia* Willd.: this aquatic ornamental was already cited in NF5 as being found as an escape in the valley of river Moselle in Lorr. mér. (France). In the intervening years it has increasingly been reported, also on various occasions in Belgium (mainly in Fl.), and it is locally naturalized. It was therefore introduced in the key in NF6 and a full account was provided. Plants from the territory of the *Nouvelle Flore*, in cultivation as well as in the wild, all seem to belong to var. *obtusata* (Muhlenb.) Wiegand, characterized by broadly triangular leaves with rounded apex. In its native American range leaves are much more variable and varieties are usually not accepted (e.g. R.R. Haynes & C.B. Hellquist, *Fl. North Am.* 22: 23, 2000).

- 788 – *Baldellia ranunculoides* (L.) Parl.: as already assumed in NF5 genuine subsp. *repens* (Lam.) Á. et D. Löve (described from N Africa) differs from the plant occurring in W Europe (S. Talavera *et al.*, *Acta Bot. Malacitana* 33: 309-350, 2008). The latter should be referred to as subsp. *cavanillesii* Molina Abril, Galán de Mera, Pizarro et Sardinero [syn.: *B. repens* (Lam.) v. Ooststroom ex Lawalrée subsp. *cavanillesii* (Molina Abril, Galán de Mera, Pizarro et Sardinero) Talavera]. The distinction between this taxon and subsp. *ranunculoides*, however, remains critical.

- 804 – *Potamogeton* × *schreberi* G. Fisch. (*P. natans* L. × *nodosus* Poirét), an additional hybrid pondweed, was discovered in the valley of river Maas N of ’s Hertogenbosch (Netherlands) [J. Bruinsma & K. van de Weyer, *Gorteria* 34(4): 97-105, 2010]. Another recent record of this hybrid, in French Lorraine (Z. Kaplan & P. Wolff, *Preslia* 76: 144-161, 2004), is probably located just outside the territory covered by the *Nouvelle Flore*.

- 811 – *Commelinaceae* (adventive and ornamental species): the list of adventive and ornamental species escaped from cultivation that have been reliably recorded within the territory of the *Nouvelle Flore* was updated. The following taxa were added: *Commelina obliqua* Vahl and *Tradescantia fluminensis* Velloso (F. Verloove, *Catal. Neoph. Belg.*, 2006).

- 813 – *Luzula luzuloides* (Lam.) Dandy et Wilmott: the ‘usual’ taxon in the territory of the *Nouvelle Flore* is subsp. *luzuloides*. However, a more montane taxon, subsp. *rubella* (Hoppe ex Mert. et Koch) Holub [syn.: subsp. *cuprina* (Rochel ex Asch. et Graebn.) Chrték et Krísa], was claimed by G.H. Parent (*Adoxa* 48/49: 39, 2005) from Ard. mér. (N of Houdemont, riverlet des Baraques), along

with subsp. *luzuloides*. This record surely requires confirmation, Belgium lying well outside its area of distribution. According to J. Kirschner [*Spec. Plant., Flora of the World* 6(1): 30, 2002] intermediate forms do occur and this may apply to the Belgian population as well. For convenience distinguishing features for both were provided in NF6 (based on J. Kirschner, *op. cit.*).

- 820 – *Juncus* L. (hybrids): the correct name for *J. acutiflorus* Ehrh. ex Hoffmann × *articulatus* L. is *J. ×montseratensis* Marcet (1947), not *J. ×surrejanus* Druce ex Stace et Lambinon (1983) [J. Kirschner, *Spec. Plant., Flora of the World* 7(2): 264, 2002].

- 821-822 – *Juncus tenuis* Willd. (subspecies): the North American *J. anthelatus* (Wiegand) R.E. Brooks (syn.: *J. tenuis* var. *anthelatus* Wiegand) is known from Belgium since at least 1977 but was overlooked for some time. At present it is known from several localities in Camp. (surroundings of Leopoldsburg) and it is probably overlooked elsewhere. Although given specific status by most recent authors [e.g. R.E. Brooks & S.E. Clemants, *Fl. North Am.* 22: 211-255, 2000; J. Kirschner, *Spec. Plant., Flora of the World* 7(2): 35, 2002] plants with features more or less intermediate between this species and *J. tenuis* have been encountered. A lower taxonomic rank, preferably in accordance with that of another taxon previously recorded from the territory of the *Nouvelle Flore* [subsp. *dudleyi* (Wiegand) P. Fourn.], seems appropriate. A new combination at subspecies rank was therefore proposed in NF6 [subsp. *anthelatus* (Wiegand) Verloove et Lambinon]. These three subspecies are keyed-out and full accounts for each are provided.

- 823 – *Juncus ranarius* Song. et Perr.: according to J. Kirschner (*Spec. Plant., Flora of the World* 8: 15, 2002), the type of *J. ambiguus* Guss. corresponds to *J. hybridus* Brot. The correct name for our plant is *J. ranarius* [syn.: *J. bufonius* L. subsp. *ranarius* (Song. et Perr.) Hiitonen; *J. ambiguus* auct. non Guss.].

- 824 – *Juncus balticus* Willd. [syn. *J. arcticus* Willd. subsp. *balticus* (Willd.) Hyl.]: this boreal species was discovered in 2000 in a wet depression in coastal dunes in De Panne (Mar.) (*AFB*: 499; M. Leten & W. Fasseaux, *Dumortiera* 94: 14-27, 2008). This is a very disjunct population (the nearest populations are located in the northernmost parts of the Netherlands) and its origin is obscure; it may have germinated from a long buried seed bank although an introduction by migrating birds is also feasible. This species is introduced in the key in NF6 and a full account is provided.

- 831-832 – *Eleocharis austriaca* Hayek [syn.: *E. palustris* (L.) Roem. et Schult. subsp. *austriaca* (Hayek) Podp.; *E. mamillata* Lindb. f. subsp. *austriaca* (Hayek) Strandh.] and *E. obtusa* (Willd.) Schult.: these two species were recorded in 2006 in a military camp in Elsenborn (Ard. or.) (J. Lambinon & R. Mause, *Dumortiera* 98: 1-5, 2010) and both look well-established. The latter is since 2010 also known from a former military training area in Brasschaat

(Klein Schietveld; Camp.), while the former had already been recorded within the territory of the *Nouvelle Flore* in Germany [E. Foerster, *Gött. Flor. Rundbr.* 8(4): 96-101, 1972]. These species are much reminiscent of native *E. palustris* and alien *E. ovata* (Roth) Roem. et Schult. and are possibly overlooked. They were therefore introduced in the key and full accounts were provided in NF6. *E. obtusa*, native in North America, was doubtlessly introduced via military vehicles. The status of *E. austriaca*, however, is less obvious: the recently discovered localities are relatively close to its native distribution range although an accidental introduction with military vehicles seems more likely.

- 835 – *Bolboschoenus maritimus* (L.) Palla: in NF5 attention was already paid to the complex taxonomy of this species group, referring to *B. yagara* (Ohwi) A.E. Kozhevnik. (J. Lambinon, *Dumortiera* 85-87: 37, 2005). In the intervening years knowledge on this group considerably improved, especially in Central Europe [e.g. K. Marhold *et al.*, *Phyton* 44(1): 1-21, 2004; R. Hand & K.P. Buttler, *Bot. Natursch. Hessen* 17: 149-150, 2004; Z. Hroudová *et al.*, *Ann. Bot. Fennici* 44: 81-102, 2007]. A previous claim of *B. yagara* from the territory of the *Nouvelle Flore* eventually turned out to be referable to a newly described species, *B. laticarpus* Marhold, Hroudová, Zákavský *et* Ducháček [perhaps better accepted, as in NF6, at subspecies rank: *B. maritimus* subsp. *cymosus* (Reichenb.) Soják]. Both taxa are keyed out in NF6 but their distribution and frequency still need to be assessed. Subsp. *laticarpus*, however, obviously is a more inland species (sometimes even found as a weed in agricultural fields) and not at all restricted to brackish or saline water.

- 836 – *Scirpus atrovirens* Willd.: this species belongs to a group of closely related species that furthermore includes *S. flaccidifolius* (Fernald) Schuyler, *S. georgianus* R.M. Harper, *S. hattorianus* Makino and *S. pallidus* (Britton) Fernald. All of these hybridize in areas where they occur sympatrically (A.T. Whittemore & A.E. Schuyler, *Fl. North Am.* 23: 8-21, 2002). Up to present the identity of the plants occurring within the territory of the *Nouvelle Flore* had not been critically assessed. Two taxa seem to be present (F. Verloove, *Willdenowia* 44: 51-55, 2014) and these are probably best accepted at subspecies rank [F. Verloove & J. Lambinon, *New Journ. Bot.* 1(1): 38-42, 2011]: subsp. *georgianus* (R.M. Harper) Verloove *et* Lambinon and subsp. *hattorianus* (Makino) Verloove *et* Lambinon. For the latter a new combination at this rank was made in NF6. Genuine *S. atrovirens* (subsp. *atrovirens*) has not been recorded so far.

- 837-838 – *Schoenoplectus tabernaemontani* (C.C. Gmel.) Palla: an additional synonym was added in NF6, *S. lacustris* (L.) Palla subsp. *glaucus* (Hartm. f.) Becherer. (M. Luceño & P. Jiménez Mejías, *Fl. iberica* 23: 46, 2007).

- 838-839 – *Cyperus esculentus* L.: all populations within the territory of the *Nouvelle Flore* seem to be referable

to the North American var. *leptostachyus* Boeckeler (P. Schippers *et al.*, *Syst. Bot.* 20: 461-481, 1995; F. Verloove, *Catal. Neoph. Belg.*: 43, 2006).

- 839 – *Cyperus longus* L.: all populations currently found in the territory of the *Nouvelle Flore* are referable to subsp. *longus*. The more slender subsp. *badius* (Desf.) Murb. (syn.: *C. badius* Desf.) was naturalized in the 19th century in the thermal baths of Spa (F. Verloove, *Catal. Neoph. Belg.*: 43, 2006).

- 839 – *Cyperus eragrostis* Lam.: this American species is known as an alien in Belgium since 1896 (F. Verloove, *Catal. Neoph. Belg.*: 43, 2006). It was initially primarily introduced as a wool alien and remained strictly ephemeral. However, in recent years it has been increasingly recorded within the territory of the *Nouvelle Flore* (mostly in Mar., Fl., Camp., Brab., Mosan); it is locally naturalized and its future spread is likely (F. Verloove, *Dumortiera* 89: 7-11, 2006). It was therefore introduced in the key in NF6 and a full account was provided. This species is often planted as an ornamental (pond margins) and recently discovered populations are probably mostly garden escapes. However, an expansion, e.g. by migrating birds, from its SW European secondary area is not impossible).

- 859 – *Carex* L. (alien species): the list of adventive and/or ornamental species escaped from cultivation that have been reliably recorded within the territory of the *Nouvelle Flore* has been updated. The following taxa were added: *C. grayi* Carey, *C. muskingumensis* Schweinitz and *C. secalina* Willd. ex Wahlenb. (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 859 – *Carex* L. (hybrids): the nomenclature of the nothotaxa encountered within the territory of the *Nouvelle Flore* was updated, mostly based on K. Kiffe [*Flor. Rundbr.* 38(1-2): 52, 2004], R. Govaerts & D.A. Simpson (*World Checklist of Cyperaceae*, 2007) and A.C. Jermy *et al.* (*Sedges of the British Isles*, ed. 3, 2007). The following modifications were required in subgenus *Vignea*: *C. ×pseudoaxillaris* K. Richt. [*C. cuprina* (Sándor ex Heuffel) Nendtvich ex A. Kerner × *remota* Jusl. ex L.] has priority over *C. ×kneuckeriana* Zahn; *C. ×ploettneriana* R. Beyer (*C. elongata* L. × *remota*) (G.H. Parent, *Ferrantia* 45: 19, 2006) and *C. ×ilseana* Ruhmer (*C. ovalis* Good. × *remota*) (Stembert, La Louveterie, bois marécageux, mai 1914, P. Halin, LG) were added. In subgenus *Carex* the following modifications were required: *C. ×fulva* Good. probably corresponds with *C. demissa* Hornem. × *hostiana* DC., not with *C. hostiana* × *lepidocarpa* Tausch as claimed in NF5, while *C. ×beckmanniana* Figert was confirmed as the hybrid *C. riparia* Curt. × *rostrata* Stokes.

- 862 – *Carex praecox* Schreb. subsp. *intermedia* (Čelak.) Schultze-Motel: *C. curvata* Knaf, given as a synonym in NF5, is an illegitimate name. The following author citations were accordingly corrected: *C. praecox* var. *curvata* Aschers. and *C. brizoides* L. var. *curvata* (Aschers.) G. Beck (R. Govaerts & D.A. Simpson, *World Checklist of Cyperaceae*, 2007).

- 862 – *Carex vulpinoidea* Michaux: this North American species is naturalized since the end of the 20th century in several parts of Lorr. (incl. Argonne) in France (e.g. A. Bizot & G.H. Parent, *Bull. Soc. Hist. Nat. Ard.* 94: 24-34, 2005). It was introduced in the key in NF6 and a full account was provided.
- 862-863 – *Carex muricata* L.: in NF5, the more or less widely distributed taxon in the territory of the *Nouvelle Flore* was called subsp. *lamprocarpa* Čelak. However, this taxon was recently lectotypified as *C. muricata* subsp. *muricata* [R. Řepka & J. Danihelka, *Preslia* 77(1): 129-136, 2005], the correct name for our taxon being *C. muricata* subsp. *pairae* (F.W. Schultz) Čelak. (syn.: *C. pairae* F.W. Schultz).
- 862-863 – *Carex muricata* L. subsp. *muricata* (syn.: *C. muricata* subsp. *lamprocarpa* Čelak.; *C. pairae* F.W. Schultz subsp. *borealis* Hyl.): this subspecies is originally native to large parts of northern and eastern Europe and may well have been overlooked as a native taxon, especially in the easternmost parts of the territory of the *Nouvelle Flore*. It is present, for instance, in Mosan or. in Germany (H. Haeupler *et al.*, *Atlas Nordrhein-Westfalen*: 210, 2003). A naturalized population, initially introduced with timber, is known since at least 2004 from a railway yard in Kortemark in Fl. (F. Verloove, *Catal. Neoph. Belg.*: 37, 2006). It was introduced in the key in NF6 and a full account was provided.
- 863 – *Carex divulsa* Stokes: some nomenclatural adjustments are required, following T. Gregor (*Bot. Natursch. Hessen* 20: 5-24, 2007). *C. guestphalica* (Boenningh. ex Reichenb.) Boenningh. ex O.F. Lang is a synonym of *C. divulsa* subsp. *divulsa*, not of subsp. *leersii* (F.W. Schultz) W. Koch., while the interpretation of *C. polyphylla* Kar. et Kir. remains uncertain. To be certain of the continued use of *C. leersii* F.W. Schultz (1871) it is necessary to propose that it be conserved against *C. leersii* Willd. (1887) and *C. chabertii* F.W. Schultz. The latter, moreover, is an ambiguous name that needs to be rejected [A. Molina *et al.*, *Taxon* 57(2): 648-649, 2008]. In a recent study on this species complex (A. Molina *et al.*, *Bot. Journ. Linn. Soc.* 156: 385-409, 2008) three distinct species are distinguished within the territory of the *Nouvelle Flore*: *C. divulsa* s.str., *C. leersii* and the newly described *C. nordica* Molina, Acedo et Llamas. Their separation is difficult and assessing their frequency and distribution will require additional research.
- 867 – *Carex lepidocarpa* Tausch: a useful synonym was added, *C. viridula* Michaux subsp. *lepidocarpa* (Tausch) Nyman (R. Govaerts & D.A. Simpson, *World Checklist of Cyperaceae*, 2007).
- 867 – *Carex demissa* Hornem.: author citation for this species in NF5 followed Schmid's monographic work [*Watsonia* 14(4): 316, 1983], i.e. "Vahl ex Hartm." (1820). However, this name was already created earlier by Hornemann in *Fl. Danica* (1808) (e.g. M. Luceño, *Fl. iberica* 23: 200, 2007; etc.).
- 868 – *Carex hirta* L.: author citation for f. *hirtiformis* (Pers.) Kunth needed to be corrected (R. Govaerts & D.A. Simpson, *World Checklist of Cyperaceae*, 2007).
- 870 – *Carex buxbaumii* Wahlenb.: discovered in abundance in alkaline marshes in Léning (Lorr. or.), initially erroneously ascribed to *C. hartmanii* Cajander (P. Richard, *Monde Pl.* 96, n°471: 16-17, 2001). It was introduced in the key in NF6 and a full account was provided.
- 886-887 – *Poaceae* (ornamental species): a list is provided with species from genera, others than those treated in detail, that have been recorded as escapes. The following were added: *Arundo donax* L., *Helictotrichum sempervirens* (Vill.) Pilger, *Pennisetum flaccidum* Griseb. and *Stipa tenuissima* Trin. [syn.: *Nassella tenuissima* (Trin.) Barkworth] and *Zizania latifolia* (Griseb.) Stapf, as well as the following bamboos: *Pleioblastus pumilus* (Miford) Nakai and *Sasa ramosa* (Makino) Makino et Shibata [syn.: *Sasaella ramosa* (Makino) Makino]. For *Arundinaria spathacea* (Franch.) McClintock the following synonym was added: *Thamnocalamus spathaceus* (Franch.) Soderstrom (C.S. Chao, *A guide to the Bamboos in Britain*, 1989; F. Verloove, *Catal. Neoph. Belg.*, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). The author citation for *Pseudosasa japonica* (Siebold et Zucc. ex Steud.) Makino ex Nakai was corrected, in accordance with, e.g. *Fl. China*, *Fl. North Am.*, etc.
- 887 – *Poaceae* (ephemeral adventive species): *Achnatherum calamagrostis* (L.) Beauv. is often accommodated in the genus *Calamagrostis* Adans. (e.g. T.B. Ryves *et al.*, *Alien grasses of the British Isles*: 41, 1996). Its corresponding name in that genus (*C. argentea* DC.) was added as a synonym. Similarly, recent molecular data suggest splitting the large polyphyletic genus *Stipa* L. into numerous smaller genera (S.W.L. Jacobs *et al.*, *Aliso* 23: 349-361 2006). The following synonyms were added: *Austrostipa verticillata* (Nees ex Spreng.) S.W.L. Jacobs et Everett (syn.: *S. verticillata* Nees ex Spreng.) and *Nassella tenuissima* (Trin.) Barkworth (syn.: *Stipa tenuissima* Trin.). The correct name for the species named *Axonopus affinis* Chase in NF5 is *A. fissifolius* (Raddi) Kuhl. (heterotypic synonym). A list is provided with species from genera, others than those treated in detail, that have been recorded as ephemeral aliens; the following were added: *Cenchrus incertus* M.A. Curtis, *Crithopsis delileana* (Schult.) Roshev. [W. Fasseaux, *Bull. Soc. Roy. Natur. Charleroi* 47(3): 12-13, 1994], *Eustachys retusa* (Lag.) Kunth, *Muhlenbergia mexicana* (L.) Trin. (F. Verloove & I. Hoste, *Dumortiera* 98: 10-12, 2010), *Paspalum paniculatum* L., *Sporobolus africanus* (Poirot) Robyns et Tournay, *S. elongatus* R. Brown, *Trisetaria michelii* (Savi) D. Heller [syn.: *Avellinia michelii* (Savi) Parl.], *Urochloa mutica* (Forssk.) T.G. Nguyen and *Zingera pisidica* (Boiss.) Tutin (F. Verloove, *Catal. Neoph. Belg.*, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). The genera *Diplachne* Beauv. and *Leptochloa* Beauv. are now amalgamated, the latter having priority (e.g. N. Snow, *Novon* 8: 77-80, 1998). Sequence of names and

synonyms was modified accordingly in NF6. The species referred to as *Monerma cylindrica* (Willd.) Coss. et Durieu in NF5 is better called *Hainardia cylindrica* (Willd.) Greuter (e.g. T.B. Ryves *et al.*, *Alien grasses of the British Isles*: 27, 1996).

- 889 – *Panicum* L. (alien species): the list of adventive and/or ornamental species escaped from cultivation that have been reliably recorded within the territory of the *Nouvelle Flore* has been updated. The following species was added: *P. antidotale* Retz. (F. Verloove, *Catal. Neoph. Belg.*: 65, 2006). *P. clandestinum* L. belongs to subgenus *Dichanthelium* Hitchc. et Chase, characterized by basal leaves forming a winter rosette and cleistogamous spikelets in secondary inflorescences. F.W. Gould (*Phytologia* 39: 268-271, 1974) was the first to raise *Dichanthelium* (Hitchc. et Chase) Gould to generic level and recent molecular studies support its exclusion from *Panicum* (S.S. Aliscioni *et al.*, *Amer. J. Bot.* 90: 796-821, 2003). Its corresponding name in the latter genus [*D. clandestinum* (L.) Gould] was added as a synonym in NF6. *P. hillmanii* Chase is closely related to *P. capillare* L. Recent American authors (e.g. R.W. Freckmann & M.G. Lelong, *Fl. North Am.* 25: 450-488, 2003) tend to combine it under that species as subsp. *hillmanii* (Chase) Freckmann et Lelong; this combination was added as a synonym in NF6.

- 890-891 – *Echinochloa* Beauv. (alien species): the list of adventive species that have been reliably recorded within the territory of the *Nouvelle Flore* has been updated. The following species were added: *E. hispidula* (Retz.) Nees ex Royle and *E. inundata* Michael et Vickery (F. Verloove, *Catal. Neoph. Belg.*: 46, 2006; F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>). In NF5 all populations of *E. muricata* (Beauv.) Fernald from the territory of the *Nouvelle Flore* were ascribed to subsp. *microstachya* (Wiegand) Jauzein. This is, indeed, by far the most common taxon and probably the only one that is naturalized. However, subsp. *muricata* has also been recorded [I. Hoste, *Belg. Journ. Bot.* 137(2): 163-174, 2004] and characters of both are opposed in NF6. The separation of these taxa is not always straightforward and they are preferably accepted at varietal rank (thus as var. *microstachya* Wiegand and var. *muricata*).

- 892 – *Setaria sphacelata* (C.F. Schumach.) Stapf et C.E. Hubbard ex M.B. Moss: found as an ephemeral grain alien in the Antwerp port area (F. Verloove, *Dumortiera* 88: 4, 2006).

- 892 – *Setaria parviflora* (Poirot) Kerguelen: this name was accepted by K.N. Gandhi & M.E. Barkworth [*Rhodo* 105 (n° 923): 197-204, 2003]. These authors also explained that its synonym, *S. geniculata* Beauv., was based on *Panicum geniculatum* Willd. (1809), not on *P. geniculatum* Lam. (1798). As a consequence, *P. geniculatum* Willd. is an illegitimate name and *S. geniculata* Beauv. a *nomen novum*.

- 894-895 – *Digitaria ciliaris* (Retz.) Koeler: subsp. *nubica* (Stapf) S.T. Blake, a rather distinct taxon, has long

been overlooked (F. Verloove, *Catal. Neoph. Belg.*: 44, 2006).

- 895 – *Digitaria aequiglumis* (Hack. et Arechav.) Parodi: after its discovery in 1997, this South American species was briefly characterized in NF5. In the intervening years it has been recorded in several additional localities in the province of East-Flanders (in the wide vicinity of Ghent) and it is locally firmly established (I. Hoste, *Dumortiera* 84: 21-23, 2005; *AFB*: 340). It was therefore introduced in the key in NF6 and a full account was provided.

- 896 – *Miscanthus* Anderss.: two species of this genus are very popular garden ornamentals (and were already cited as such in NF5): *M. sacchariflorus* (Maxim.) Benth. (syn.: *M. saccharifer* Benth.) and *M. sinensis* Anderss. Especially the former is increasingly recorded as a throw-out and persists very well, often building dense monospecific stands. Full accounts of this genus and the two species were therefore introduced in NF6. A third taxon, the triploid *M. ×giganteus* Greef et Deuter ex Hodkinson et Renvoize (*M. sacchariflorus* × *sinensis*) is locally grown (e.g. in the French Ardennes department; comm. A. Bizot, 2009) in research trials as a source of biomass for the production of energy. This use may become more widespread and records in the wild are expected. Its distinguishing features are therefore briefly discussed in NF6.

- 897 – *Cynodon incompletus* Nees: formerly recorded as an ephemeral wool alien in the valley of river Vesdre (F. Verloove, *Catal. Neoph. Belg.*: 43, 2006).

- 897 – *Eleusine coracana* (L.) Gaertn.: the taxonomy of the taxa closely related to *E. indica* (L.) Gaertn. has changed considerably recently as a result of chloroplast DNA analysis (e.g. K.W. Hilu & J.L. Johnson, *Ann. Missouri Bot. Gard.* 84: 841-847, 1997). Subspecies *africana* (Kennedy-O'Byrne) S.M. Phillips of the latter is now transferred to *E. coracana* [as subsp. *africana* (Kennedy-O'Byrne) Hilu et de Wet]. This combination was added as a synonym in NF6.

- 900 – *Eragrostis virescens* J. Presl: a peculiar form was described as new to science (subsp. *verloovei* Portal), based on collections from Ghent (R. Portal, *Bull. Soc. Bot. Centre-Ouest N.S.* 33: 3-8, 2002). The same taxon was also recorded in 2009 in Gierle (Camp.). It is characterized by its more diffuse panicle (pedicels longer than spikelets), darker spikelets and hairy inflorescence axis.

- 900 – *Tragus racemosus* (L.) All.: this species is spreading from S Europe and has been known for a long time north to the Paris Basin. In recent years, it has been repeatedly recorded in NW France (e.g. Hénin-Beaumont, gare de formation, voies ferrées désaffectées, extrêmement abondant, 09.08.2008, F. Verloove 7294, BR, LG; B. Toussaint & B. Grzemeski, *Le Jouet du Vent* 10: 3, 2002) and a further naturalization is expected. This supplementary genus and species were therefore introduced in the key in NF6 and full accounts were provided.

- 902 – *Phalaris paradoxa* L.: two more or less distinct varieties have been recorded, var. *paradoxa* and var.

praemorsa (Lam.) Coss. et Durieu (F. Verloove, *Catal. Neoph. Belg.*: 67, 2006).

- 907 – *Avenula bromoides* (Gouan) H. Scholz [syn.: *Helictotrichon bromoides* (Gouan) C.E. Hubbard]: formerly recorded as an ephemeral alien (F. Verloove, *Catal. Neoph. Belg.*: 33, 2006).

- 907 – *Avenula pubescens* (Huds.) Dum.: as a result of molecular studies species of *Avenastrum* Opiz subgenus *Pubavenastrum* Vierh. [syn.: *Helictotrichon* Besser subgenus *Pubavenastrum* (Vierh.) Holub] have been transferred to a separate genus, *Homalotrichon* Banfi, Galasso et Bracchi [A. Allessandrini & C. Blasi (et coll.), *An annotated checklist of the Italian Flora*: 28-30, 2005]. Its corresponding name in this genus [*H. pubescens* (Huds.) Banfi, Galasso et Bracchi] was added as a synonym in NF6.

- 909 – *Deschampsia flexuosa* (L.) Trin.: the author citation of one of its synonyms, *Avenella flexuosa* (L.) Drejer, needed to be corrected (e.g. R.J. Soreng, *Catal. New World Grasses*, IV. subfamily Pooideae, 2003).

- 912 – *Elymus elongatus* (Host) Runemark subsp. *ponticus* (Podp.) Melderis [syn.: *Elytrigia elongata* (Host) Nevski subsp. *pontica* (Podp.) Gamisans; *Elymus obtusiflorus* (DC.) Conert; *Thinopyrum ponticum* (Podp.) M. Barkworth et D.R. Dewey]: this taxon from SE Europe and W Asia was found in Belgium as an ephemeral alien in the 19th century (F. Verloove, *Catal. Neoph. Belg.*: 47, 2006). In recent times it is increasingly sown for road side stabilization and erosion control, also in W Europe. In 2006 a large population was found on the banks of river Scheldt in Bruille and Hergnies (Brab. occ. in France) [L. Delvosalle *et al.*, *Nat. Mosana* 59(2): 43-45, 2007]. It looks firmly established and may have been overlooked elsewhere. Its distinguishing features were provided in NF6.

- 922 – *×Agropogon lutosus* (Poiret) P. Fournier (*Agrostis stolonifera* L. *× Polypogon monspeliensis* (L.) Desf.): this is the correct name for the intergeneric hybrid previously named *×Agropogon littoralis* (Smith) C.E. Hubbard. The former is based on *Agrostis lutosus* Poiret (*Encycl.*, Suppl. 1: 249, 1810) and predates the other basionym *Polypogon littoralis* Smith (*Comp. Fl. Brit.*: 13, 1816) (e.g. R.J. Soreng, *Catal. New World Grasses*, IV. subfamily Pooideae, 2003).

- 922 – *Polypogon viridis* (Gouan) Breistr.: this Mediterranean weed species is known since the 19th century from Belgium (F. Verloove, *Catal. Neoph. Belg.*: 70, 2006), but remained strictly ephemeral for a long time. In recent years it is increasingly found within the territory of the *Nouvelle Flore*, at first in N France (Mare à Goriaux; see: J. Duvigneaud & J. Saintenoy-Simon, *Adoxa* 24-25: 47-48, 1999) and soon afterwards in urban habitats in several parts of Flanders in Belgium (e.g. in Aalst, Bruges, Ghent, etc.; see F. Verloove, *Dumortiera* 90: 24-26, 2006). By now it is locally well naturalized and increasing, especially in Mar., Fl. and Brab. It was therefore introduced

in the key in NF6 and a full account was provided, also emphasizing its separation from *Agrostis stolonifera* L.

- 928 – *Agrostis ×sanionis* (Aschers. et Graebn.) Chase et Niles (*A. capillaris* L. *× vinealis* Schreb.): the author citation needed to be corrected, Ascherson & Graebner's name being invalid. Chase & Niles (*Index Grass Species* 1: 89, 1962) possibly were the first to validate this name (R. Portal, *Agrostis de France*, 2009).

- 928 – *Agrostis* L. (alien species): the list with adventive species that have been reliably recorded within the territory of the *Nouvelle Flore* was updated. The following species were added: *A. eriantha* Hack. and *A. exarata* Trin. (F. Verloove, *Catal. Neoph. Belg.*: 26, 2006).

- 928 – *Agrostis avenacea* J.F. Gmel.: this Australian species is now accommodated in a segregate genus *Lachnagrostis* Trin. Generic status of the latter has become widely accepted (e.g. M.J. Harvey, *Fl. North Am.* 24: 694-696, 2007; S.W.L. Jacobs & A.J. Brown, *Fl. Australia* 44A, Poaceae 2: 174-190, 2009) but both genera are only told apart on rather subtle characters of lemma epidermis. For convenience its corresponding name in *Lachnagrostis* was added as a synonym in NF6 [*L. filiformis* (Forst.) Trin.].

- 928 – *Agrostis scabra* Willd.: this species from N America and NE Asia is known since 1930 as an ephemeral alien in Belgium (F. Verloove, *Catal. Neoph. Belg.*: 26, 2006). However, in recent years it has been increasingly recorded. In the port of Antwerpen it is fully naturalized, at least since the 1990s but possibly even much longer; see L. Delvosalle, *Bull. Soc. Roy. Bot. Belg.* 85: 297-303, 1953). It is also present on sandy arable land in the nature reserve Hageven between Hamont-Achel and Neerpelt, at least since 1967 (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>) and was recently recorded in several different additional localities, mainly in Camp. In N France (Brab. occ.) also observed on several occasions, for instance in Marchiennes and Douai (comm. D. Mercier, F. Verloove). It was therefore introduced in the key in NF6 and a full account was provided.

- 928 – *Agrostis vinealis* Schreb. subsp. *ericetorum* (Préaubert et Bouvet) Valdés et H. Scholz: this subspecies was confirmed from the territory of the *Nouvelle Flore* (French Lorr., see R. Portal, *Agrostis de France*, 2009). Its distinguishing features are briefly discussed but its separation from subsp. *vinealis* remains very critical (compare with T. Cope & A. Gray, *Grasses of the British Isles*, B.S.B.I Handbook 13: 342-344, 2009).

- 929 – *Agrostis ×fouilladeana* Lambinon et Verloove (*A. capillaris* L. *× castellana* Boiss. et Reuter): known from the territory of the *Nouvelle Flore* since the 1990s and already mentioned and characterized in NF5. In the intervening years repeatedly confirmed (mostly in Mar., Fl., Pic. sept., Brab.) and probably still widely overlooked. This nothotaxon was therefore introduced in the key in NF6 and a full account was provided. Distinguishing features, useful for an accurate separation from its putative parents, as well as its variability, are discussed.

- 929 – *Agrostis stolonifera* L. var. *marina* (S.F. Gray) Kerguelen: a new name at varietal rank [var. *arenaria* (Gouan) Dobignard et Portal] was published by R. Portal (*Agrostis de France*, 2009). In NF6 it was merely added as a synonym, Kerguelen's combination having priority.
- 929 – *Agrostis stolonifera* L. var. *palustris* (Huds.) Farw.: this variety was maintained in NF6 but its taxonomic value is very doubtful (see also R. Portal, *Agrostis de France*, 2009).
- 931 – *Brachypodium ×cugnacii* A. Camus [*B. pinnatum* (L.) Beauv. × *sylvaticum* (Huds.) Beauv.]: this hybrid was found on two occasions in the Netherlands (Brab. or.) [G. Londo & H. de Jong, *Gorteria* 33(1): 1-10, 2007]. It is perhaps overlooked within the territory of the *Nouvelle Flore*.
- 935 – *Poa annua* L. var. *reptans* Haussk.: this variety, of doubtful taxonomic value, has been confirmed from the territory of the *Nouvelle Flore* (R. Portal, *Poa de France, Belgique et Suisse*, 2005).
- 935-936 – *Poa trivialis* L. (infraspecific taxa): its infraspecific variability within the territory of the *Nouvelle Flore* is still insufficiently understood. According to R. Portal (*Poa de France, Belgique et Suisse*, 2005), three subspecies have been reliably recorded [subsp. *semineutra* (Willd.) Portal, subsp. *trivialis* and subsp. *sylvicola* (Guss.) Lindb. f.] but their separation seems critical. The latter is perhaps best characterized but plants from the territory of the *Nouvelle Flore* rarely (if at all) fully correspond with this taxon and display more or less intermediate features.
- 936 – *Poa nemoralis* L. (infraspecific taxa): R. Portal (*Poa de France, Belgique et Suisse*, 2005) confirms the historical presence (19th century) of var. *glauca* Gaudin in Belgium (Ard. nord-or.: Jusleville, Spa). It should be looked for and is therefore briefly characterized in NF6. These records correspond with "*P. glauca* Vahl" from 19th century Belgian floras (F. Verloove & J. Lambinon, *Syst. Georg. Pl.* 78: 63-79, 2008).
- 936 – *Poa pratensis* L. (infraspecific taxa): the author citation of subsp. *subcaerulea* (Smith) Hiitonen (*Suom. Kasvio*: 205, 1933) needed to be corrected, Hiitonen's combination being validly published much earlier than that of Tutin (in A.R. Clapham *et al.*, *Fl. Brit. Isles*, ed. 1: 1441, 1950).
- 938-945 – *Bromus* L.: the generic limits of the genus *Bromus* have been controversial for quite a long time. Many authors have accepted the sections of *Bromus* at generic level (see for instance N.N. Tsvelev, *Grasses of the Soviet Union*, 1984; T.B. Ryves *et al.*, *Alien grasses of the British Isles*, 1996; L.M. Spalton, *B.S.B.I. News* 95: 22-26, 2004; R. van der Meijden, *Heukels' Flora van Nederland*, 23^{ste} druk, 2005; C.A. Stace, *New Flora Brit. Isles*, 3rd ed.: 1039, 2010; etc.). However, in NF6 a conservative taxonomy was maintained, following R.J. Soreng *et al.*, *Catal. New World Grasses*, IV. subfamily Pooideae, 2003; L.E. Pavlick & L.K. Anderton, *Fl. North Am.* 24: 193-237, 2007; D.J. Mabberley, *Mabberley's Plant-book*, ed. 3, 2008; etc.). This is also in accordance with recent molecular phylogenetic studies (J.M. Saarela *et al.*, *Aliso* 23: 379-396, 2007).
- 941 – *Bromus* L. (alien species): the list of adventive species that have been reliably recorded within the territory of the *Nouvelle Flore* has been updated. The following species was added: *B. alopecuroides* Poir. (F. Verloove, *Catal. Neoph. Belg.*: 34, 2006).
- 943-944 – *Bromus hordeaceus* L. subsp. *pseudothominei* (P.M. Smith) H. Scholz (syn.: *B. pseudothominei* P.M. Smith): this taxon is more or less intermediate between *B. hordeaceus* and *B. lepidus* Holmberg and was initially described as their hybrid. It is very poorly known but may well be native in W Europe (although it is most often seen in artificial habitats, viz coal mining spoil heaps, recently sown embankments, etc.). It has been recorded on several occasions within the territory of the *Nouvelle Flore* (mostly in Mar., Fl., Camp., Mosan) and is probably overlooked. It was therefore introduced in the key in NF6 and a full account was provided.
- 954 – *Vulpia myuros* (L.) C.C. Gmel.: lemma pubescence in this species is fairly variable; the most widespread form has (sub-) glabrous lemmas and belongs to var. *myuros*. Especially in the southern parts of the territory of the *Nouvelle Flore* forms with pubescent or ciliate lemmas are sometimes encountered. These were ascribed to var. *megalura* (Nutt.) Auquier [syn.: *V. megalura* (Nutt.) Rydb.] in NF5 (P. Auquier, *Bull. Jard. Bot. Nat. Belg.* 47: 117-137, 1977). However, intermediate forms are not rare and another taxonomic concept was introduced in NF6, mostly based on R.J. Soreng (*Catal. New World Grasses*, IV. subfamily Pooideae, 2003). Plants with non-glabrous lemmas belong to var. *hirsuta* Hack. Alternatively, such plants can be divided as *V. myuros* f. *hirsuta* (Hack.) C.F. Blom (lemmas uniformly pubescent) and f. *megalura* (Nutt.) Stace et R. Cotton (lemmas ciliate on margins only).
- 954 – *Festuca* L.: generic concepts in this genus and related genera have changed considerably. Molecular analysis supports, for instance, the transfer of some broad-leaved species of *Festuca* (e.g. *F. arundinacea* Schreb. and *F. pratensis* Huds.) to a broader circumscribed genus *Lolium* L. or to segregate genera (*Drymochloa* Holub and *Schedonorus* Beauv.) [e.g. J. Holub, *Folia Geobot. Taxon.* 19(1): 95-99, 1984; S.J. Darbyshire, *Novon* 3: 239-243, 1993; B. Foggi *et al.*, *Willdenowia* 35: 241-244, 2005]. This new taxonomy was not introduced in NF6 but the following new names were added as synonyms: *Drymochloa altissima* (Pollich) Holub (syn.: *F. altissima* Pollich), *Schedonorus arundinaceus* (Schreb.) Dum. (syn.: *F. arundinacea*), *S. giganteus* (L.) Holub (syn.: *F. gigantea* L.) and *S. pratensis* (Huds.) Beauv. (syn.: *F. pratensis*), as well as *S. ×schlickumii* (Grantzow) Holub (syn.: *F. ×schlickumii* Grantzow; *F. gigantea* × *pratensis*) [J. Holub, *Preslia* 70(2): 97-122, 1998].

- 964 – *Festulolium* Aschers. et Graebn.: as a result of changed generic concepts in *Festuca* s.l. (see above) the following names were added as synonyms for some intergeneric hybrids (*Festuca* L. × *Lolium* L.): ×*Schedolium loliaceum* (Huds.) Holub [syn.: ×*Festulolium loliaceum* (Huds.) P. Fourn.], ×*S. holmbergii* (Dörfel.) Holub [syn.: ×*F. holmbergii* (Dörfel.) P. Fourn.] and ×*S. brinkmannii* (A. Braun) Holub [syn.: ×*F. brinkmannii* (A. Braun) Aschers. et Graebn.] [J. Holub, *Preslia* 70(2): 97-122, 1998].
- 968-969 – *Typha minima* Funck: this aquatic ornamental was recently recorded in Brab. or. (Netherlands) (J. Lambinon, *Dumortiera* 85-87: 78, 2005). In recent years it has been furthermore reported from Lorr. or. in Luxembourg: at first in Remerschen and subsequently in Wintange (Y. Krippel & G. Colling, *Bull. Soc. Natur. Luxemb.* 105: 53, 2004; id. 107: 101, 2006). At least in the latter locality it seems well-established. Its distinguishing features are briefly discussed in NF6.
- 969 – *Typha laxmannii* Lepechin: another aquatic ornamental that is increasingly planted (pond margins, etc.). Discovered in 2010 in Lanaken (Camp.) (comm. R. Barendse) this species is known since at least 2007 from ditches and ponds in a recovered coal mining area between Oignies and Dourges (France, N of Douai, Brab. occ.) (comm. B. Toussaint). At least in the latter locality it seems well-established. It may well have been overlooked elsewhere and was therefore cited and briefly characterized in NF6.
- 970 – *Araceae* (ornamental species): the list with species from genera, others than those treated in detail, that have been recorded as escapes from cultivation was updated. The following species was added: *Typhonium venosum* (Ait.) Hett. et Boyce [syn.: *Sauromatum venosum* (Ait.) Kunth] (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).
- 970 – *Lysichiton* Schott: two species of this genus [the American *L. americanus* Hultén et H. St. John and the Asian *L. camtschatcensis* (L.) Schott] are increasingly cultivated as ornamentals for damp habitats (mainly pond margins). At least the former has been recorded on several occasions as an escape from (or perhaps rather a relic of) cultivation. A population from Rendeux shows intermediate features and possibly represents hybrids. A future naturalization is likely (in most of Europe this genus is even considered invasive!) and therefore both these species are briefly characterized in NF6.
- 980 – *Smilax aspera* L.: found, probably as an ephemeral escape from cultivation, in Roeselare (Roeselare, oud kerkhof, in voeg van een grafzerk, 15.06.2008, F. Verloove 7117, BR).
- 985-986 – *Ornithogalum* L.: recent molecular studies (e.g. M. Martínez-Azorín *et al.*, *Ann. Bot.* 107: 1-37, 2011) suggest splitting up *Ornithogalum* into several smaller monophyletic genera [see, however, J.C. Manning *et al.*, *Taxon* 58(1): 77-107, 2009]. This taxonomy has not been followed in NF6 but alternative names in these segregate

genera were added as synonyms: *Loncomelos narbonense* (L.) Rafin. (syn.: *O. narbonense* L.), *L. pyramidale* (L.) Rafin. (syn.: *O. pyramidale* L.) and *L. pyrenaicum* (L.) Rafin. (syn.: *O. pyrenaicum* L.).

- 985-986 – *Ornithogalum umbellatum* L.: the taxonomical and nomenclatural problems surrounding this species have already been referred to (e.g. J. Lambinon, *Dumortiera* 85-87: 43, 2005). The nomenclature and the taxonomy of *Ornithogalum divergens* Boreau [syn.: *O. paterfamilias* Godron; *O. umbellatum* subsp. *divergens* (Boreau) Bonnier et Layens] were recently dealt with by M.B. Crespo & A. Juan [*Candollea* 64(2): 163-169, 2009]. It was lectotypified and this name replaces subsp. *umbellatum* of NF5. The widespread taxon within the territory of the *Nouvelle Flore*, subsp. *campestre* Rouy of NF5, now should be named subsp. *umbellatum* (syn.: *O. angustifolium* Boreau). The taxonomy of this complex remains largely unresolved.

- 986-987 – *Scilla* L.: in accordance with monographic studies by F. Speta (e.g. *Österr. Bot. Z.* 119: 6-18, 1971; id., *Naturk. Jahrb. Stadt Linz* 21: 9-79, 1976; recently followed, for instance, by C.A. Stace, *New Flora Brit. Isl.*, ed. 3: 918, 2010) and for practical reasons *Chionodoxa* Boiss. and *Scilla* were united in NF6. Two species of *Chionodoxa* that are sometimes found as escapes from, or relics of, cultivation are now accommodated in *Scilla*: *S. luciliae* (Boiss.) Speta (syn.: *C. luciliae* Boiss.) and *S. sardensis* (Whittall ex Barr) Speta (syn.: *C. sardensis* Whittall ex Barr).

- 992 – *Allium ramosum* L.: cultivated for culinary purposes and recently recorded as an escape (F. Verloove, *Man. Alien Pl. Belg.*: <http://alienplantsbelgium.be>).

- 996 – *Galanthus ikariae* Baker: sometimes cultivated as an ornamental and rarely recorded as an escape (F. Verloove, *Catal. Neoph. Belg.*: 51, 2006).

- 998 – *Iris sibirica* L.: this ornamental species is increasingly recorded as an escape from cultivation, for instance in Fagne du Misten (marshy heathland), Pittem, Neerpelt, etc. (comm. P. Frankard, 08.2009). It was merely cited in NF6, genuinely naturalized populations not having been observed so far.

- 999 – *Yucca* L.: the stemless species of *Yucca* with leaf margins with conspicuous filiferous threads and flaccid, narrow leaves, sometimes seen as an escape or throw-out, was ascribed to *Y. filamentosa* L. in NF5. However, its densely pubescent inflorescence branches rather suggest *Y. flaccida* Haworth, a close relative of *Y. filamentosa* (and perhaps better considered as a variety of the latter).

- 1008-1010 – *Epipactis helleborine* (L.) Crantz subsp. *helleborine*: Y. Krippel & G. Colling (*Bull. Soc. Natur. Luxemb.* 109: 64-65, 2008) reported the presence of subsp. *orbicularis* (K. Richt.) E. Klein in Luxembourg (Gutland). This taxon is, however, probably better accepted as a variety of subsp. *helleborine* [var. *orbicularis* (K. Richt.) Verm.] and may occur in the entire range of this subspecies; it is known, for instance, in Dutch Limburg

and northern France (comm. D. Tyteca 11.2008). It is briefly characterized in NF6.

- 1010 – *Epipactis purpurata* Smith: H.A. Pedersen & J. Reinhardt [*Taxon* 54(3): 836-837, 2005] proposed to conserve the name *E. purpurata* (1828) against *E. viridiflora* Krock. (1814). The latter binomial is an ambiguous name and was added in NF6 as a *nom. rejic. propos.*

- 1011-1012 – *Neottia* Guettard: in accordance with recent molecular studies [M.W. Chase *et al.* In: K.W. Dixon *et al.* (eds.), *Orchid conservation*: 69-89, 2003; recently followed, e.g., by R. van der Meijden, *Heukels' Fl. Nederl.*, 23^e ed.: 106, 2005; D. Tyteca, *Atlas des Orchidées de Lesse et Lomme*, 2008 and C.A. Stace, *New Flora Brit. Isl.*, ed. 3: 864, 2010] the genera *Listera* R. Brown and *Neottia* were merged. In NF6 *Listera cordata* (L.) Brown and *L. ovata* (L.) Brown are called *N. cordata* (L.) L.C.M. Rich. and *N. ovata* (L.) Bluff et Fingerh. respectively.

- 1016 – *Ophrys holosericea* (Burm. f.) Greuter: as explained by W. Greuter [*Journ. Eur. Orchid.* 40(4): 657-662, 2008], this is the correct name for the species usually referred to as *O. fuciflora* (F.W. Schmidt) Moench. It was, reluctantly, adopted in NF6 although a conservation proposal for the latter widely applied binomial would seem to be appropriate.

- 1017 – *Neotinea ustulata* (L.) R.M. Bateman, Pridgeon et M.W. Chase and *N. tridentata* (Scop.) R.M. Bateman, Pridgeon et M.W. Chase: in accordance with D. Tyteca & E. Klein [*Journ. Eur. Orchid.* 40(3): 501-544, 2008] synonyms for these two species in the genus *Odontorchis* Tyteca et E. Klein are added in NF6: *O. ustulata* (L.) Tyteca et E. Klein and *O. tridentata* (L.) Tyteca et E. Klein.

- 1018 – *Orchis* L. (hybrids): the author citation for *Orchis* × *bispuria* (G. Keller) Kretzschmar, Eccarius et H. Dietrich. needed to be corrected, the basionym being × *Orchiaceras bispurium* G. Keller (H. Kretzschmar *et al.*, *The Orchid Genera Anacamptis, Orchis and Neotinea*: 469, 2007). The genuine occurrence of *O.* × *wilmsii* K. Richt. [*O. mascula* (L.) L. × *purpurea* Huds.], to be confirmed in Boul. and Lorr. mér. according to NF5, is highly improbable, these species being genetically isolated (H. Kretzschmar *et al.*, l.c.).

- 1020 – *Orchis mascula* (L.) L.: in accordance with D. Tyteca & E. Klein (*Journ. Eur. Orchid.* 40(3): 501-544, 2008) a synonym in the genus *Androrchis* Tyteca et E.

Klein was added in NF6: *A. mascula* (L.) Tyteca et E. Klein.

- 1025 – *Dactylorhiza incarnata* (L.) Soó (subspecies): subsp. *pulchella* (Druce) Soó is known since 1967 from coastal marshland in the valley of river Somme in France (Mar. mér.) [M. Bon, *Bull. Soc. Bot. N. Fr.*, 20(4): 329-346, 1967]. In 1994, it was furthermore observed in the same district in Merlimont (la Canarderie) [J.-R. Wattez, *Bull. Soc. Bot. N. Fr.*, 48(2): 53-60], and more recently also in a sand deposit alongside a canal near Watten (Brab. occ.) (*AFF*: 420) (see also distribution map in M. Bournérias & D. Prat, *Les orchidées de France, Belgique et Luxembourg*, 2005). This taxon is poorly known and possibly overlooked; it was therefore introduced in the key in NF6 and a full account was provided.

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