

The Actual Status of an Old Selection of the Dimorphic Ash Tree

(*Fraxinus dimorpha* COSS. & DURIEU var. *dumosa* CARRIÈRE)

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Summary – The actual status of an old selection of the dimorphic ash tree (*Fraxinus dimorpha* var. *dumosa*) – The name *Fraxinus xanthoxyloides* var. *dumosa*, to date in use for a rarely cultivated shrubby, small-leaved ash tree, is investigated and rejected. Evidence is given for the wild origin of the first introduction into cultivation of this variety under the correct name *F. dimorpha* var. *dumosa*.

After detailed study of literature, herbarium specimens, botanical collections and online databases we came to the following conclusions for this small-leaved ash in cultivation:

- Three taxa are accepted: *F. xanthoxyloides* from the Himalayan region, and *F. dimorpha* and *F. dimorpha* var. *dumosa* from NW Africa (Morocco & Algeria).
- The correct name for the shrubby, small-leaved ash is *F. dimorpha* var. *dumosa*.
- The frequently used name *F. xanthoxyloides* var. *dumosa* LINDELSH. is illegitimate.
- The vegetatively propagated shrubby, small-leaved ash could better be treated as a cultivar: *F. dimorpha* ‘Dumosa’.

Sommaire – Statut actuel d’une ancienne sélection du frêne dimorphe (*Fraxinus dimorpha* var. *dumosa*) – Le nom *Fraxinus xanthoxyloides* var. *dumosa*, utilisé jusqu’à présent pour un frêne arbustif à petites feuilles rarement cultivé, est examiné et rejeté. Des preuves sont fournies pour l’origine sauvage de la première introduction en culture de cette variété sous le nom correct de *F. dimorpha* var. *dumosa*.

Après une étude détaillée de la littérature, de spécimens d’herbier, de collections botaniques et de bases de données en ligne, nous arrivons aux conclusions suivantes pour le frêne à petites feuilles en culture:

- Trois taxons sont acceptés: *F. xanthoxyloides* de l’Himalaya, et *F. dimorpha* et *F. dimorpha* var. *dumosa* du nord-ouest de l’Afrique (Maroc et Algérie).
- Le nom correct du frêne arbustif à petites feuilles est *F. dimorpha* var. *dumosa*.
- Le nom couramment utilisé *F. xanthoxyloides* var. *dumosa* LINDELSH. est illégitime.
- L’utilisation du nom de cultivar *F. dimorpha* ‘Dumosa’ est recommandée pour le frêne arbustif à petites feuilles issu de multiplication végétative.

Samenvatting – De huidige status van een oude selectie van de dimorphe es (*Fraxinus dimorpha* var. *dumosa*) – De naam *Fraxinus xanthoxyloides* var. *dumosa*, tot op heden in gebruik voor een zeldzaam gekweekte kleinbladige struikvormige es, wordt onderzocht en verworpen. Er wordt bewijs geleverd voor de wilde oorsprong van de eerste introductie in cultuur van deze variëteit onder de correcte naam *F. dimorpha* var. *dumosa*.

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Na gedetailleerde studie van literatuur, herbariummateriaal, botanische verzamelingen en online databanken komen we voor de in cultuur zijnde kleinbladige es tot volgende conclusies:

- Er worden drie taxa aanvaard: *F. xanthoxyloides* uit de Himalaya, en *F. dimorpha* en *F. dimorpha* var. *dumosa* beiden uit NW-Afrika (Marokko & Algerije).
- De correcte naam voor de struikvormige, kleinbladige es is *F. dimorpha* var. *dumosa*.
- De vaak gebruikte naam *F. xanthoxyloides* var. *dumosa* LINDELSH. is illegitiem.
- Voor de vegetatief vermeerderde struikvormige, kleinbladige es is het gebruik van de cultivarnaam *F. dimorpha* 'Dumosa' aanbevolen.

INTRODUCTION

Plants in cultivation in Western Europe under the name *Fraxinus xanthoxyloides* var. *dumosa* seem to be quite different from each other: plant habit ranges from large trees to low shrubs and form or size of leaves may vary accordingly. In order to find out where this variability came from, we investigated the botanical literature for the origin of this variety and for its further "wandering" through botanical taxonomy.

FIRST DISCOVERY AND DESCRIPTION OF THE TAXON

In an article, published in the *Revue Horticole*, entitled "Fraxinus dimorpha dumosa" ÉLIE-ABEL CARRIÈRE (1865), horticulturist and botanist, made mention of an unusual form of *Fraxinus dimorpha* COSSON & DURIEU that arose at the "Muséum national d'histoire naturelle" in Paris: "La variété que nous décrivons a été obtenue au Muséum". He describes this variety as a very compact shrub with many ramifications closely set mostly without terminal bud and hence dichotomizing in all directions thus forming a "laxis inextricable". He says it must be propagated by grafting.

As CARRIÈRE states that the type *Fraxinus dimorpha* occurs in Lambessa (Algeria) we may suppose that the selection arose from seeds

collected in that region. But he gives no further details on its origin.

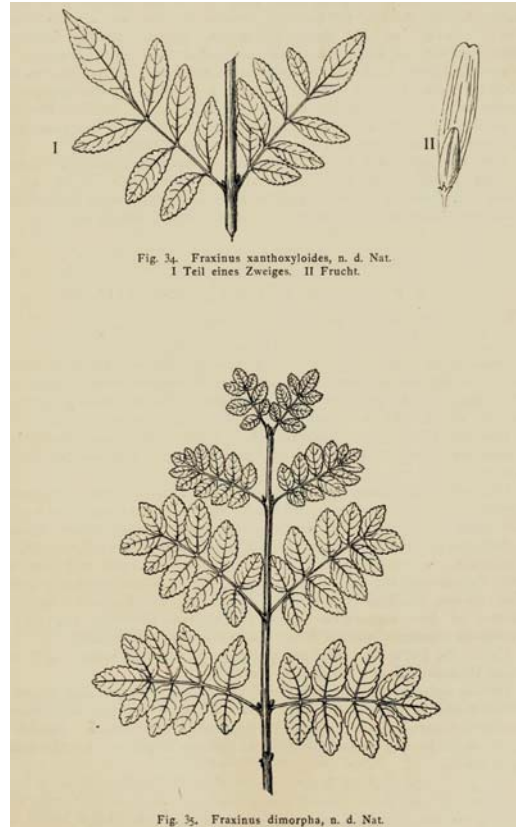
A decade earlier *Fraxinus dimorpha* had been described in 1855 by COSSON & DURIEU with reference to "BALANSA: Plantes d'Algérie Exsicc. n. 970". BENJAMIN BALANSA was a French botanist and collector who travelled in North Africa from 1847-1853 and continued his travels in Asia minor, New Caledonia, Paraguay and Vietnam. AUGUSTE CHEVALIER (1942, p. 243), in his biography on BALANSA, cites BOISSIER (*Flora orientalis*, I, 1867, p. XX): "Toutes les collections de M. BALANSA composées d'échantillons admirablement recueillis et préparés sont répandues dans beaucoup d'herbiers et ont contribué avec celles de HELDREICH, de KOTSCHY et de BOURGEOU à populariser les plantes d'Orient parmi les botanistes." CHEVALIER (1942, p. 242) says that BALANSA was collecting, partly accompanied by COSSON, in 1852-1853 in the region of Aurès, in the NE of Algeria. As CARRIÈRE (1865) told us that the dimorphic ash tree occurs in Lambessa which is situated in the same region and knowing that he also mentions that the plants in cultivation at the Muséum are about 10 years old, leads to our conclusion that these seeds may have been collected by BALANSA. As BALANSA worked for the "Commission scientifique d'exploration de l'Algérie" (directed by the colonel DURIEU DE MAISSONNEUVE), it seems

not unreasonable to assume that seeds were distributed and shared with the Muséum. Notice that forementioned botanists COSSON and colonel DURIEU are the authors of the name *Fraxinus dimorpha*.

TAXONOMICAL STATUS

Where THEODOR WENZIG (1883), in a monography on *Fraxinus*, considers the dimorphic ash as a variety of *Fraxinus xanthoxyloides* WALL. (= var. *dimorpha* (COSS. & DURIEU) WENZ.), LEOPOLD DIPPEL (1889) in his Handbuch der Laubholzkunde still maintains it as a species on its own: *Fraxinus dimorpha*. The latter also mentions the var. *dumosa*: “Eine zwergige Form mit durchweg nur 2-3 jochigen Blättern und kleinen, rundlichen Blättchen ist von CARRIÈRE (Revue hort. 1865 S.325) als var. *dumosa* unterschieden worden. Dieselbe findet sich in mehreren Baum-schulen-Verzeichnissen und stellt ein äusserst zierliches, kleines Gehölz dar.” Both species, *Fraxinus xanthoxyloides* and *F. dimorpha* are well illustrated by DIPPEL [Ill. 1] and look quite different from each other.

CAMILLO SCHNEIDER (1912) specifies that in sterile, shrubby forms the leaflets are small (hardly more than 10 × 5-6 mm) while adult plants have larger leaflets up to 4 × 1.2 cm [Ill. 2]. He points out that the typical *Fraxinus xanthoxyloides* (from Baluchistan and Afghanistan) seems to have smaller fruits than the forms from North Africa [Ill. 3]. He states further that the *F. dimorpha* var. *dumosa* described by CARRIÈRE is just a normal shrubby form with small leaflets which could be maintained as such in cultivation. SCHNEIDER points out in a footnote on p. 810 that he follows mostly the point of view of A. VON LINGELSHEIM (1907) in his “Vorarbeiten zu einer Monographie der Gattung *Fraxinus*.”

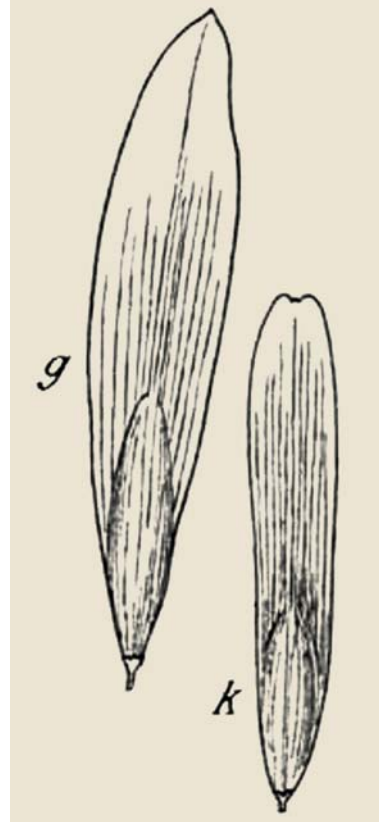


1 – Twig and leaves of *Fraxinus xanthoxyloides* (fig. 34) and *F. dimorpha* (fig. 35) as depicted in DIPPEL 1889, p. 71.

Later in 1920, ALEXANDER VON LINGELSHEIM, in his monography on the Oleaceae, rearranged the species *Fraxinus dimorpha* and its var. *dumosa*, both as varieties of *Fraxinus xanthoxyloides* (which is a species known from NW Himalaya and Afghanistan): *Fraxinus xanthoxyloides* var. *dimorpha* (COSS. & DURIEU) LINGELSH. and *F. xanthoxyloides* var. *dumosa* (CARRIÈRE) LINGELSH. Remarkably he classifies under the var. *dimorpha* the herbarium specimens collected by AITCHISON (N° 44) and by GRIFFITH (N° 3674) both in Afghanistan, including several other collections from India (BRANDIS), Tibet (THOMSON, HOOKER) or Kashmir (SCHLAGINTWEIT).



2 – Leaves of *Fraxinus xanthoxyloides* (h) and *F. dimorpha* (i) as depicted in SCHNEIDER 1912, p. 819 Fig. 516.



3 – Fruit of *Fraxinus xanthoxyloides* (k) and *F. dimorpha* (g) as depicted in SCHNEIDER 1912, p. 823 Fig. 518.

Two collections made in Algeria, one by BALANSA (N° 970) the other by REBOUD (N° 2545), are both attributed in part to var. *dimorpha* and to var. *dumosa*.

According to LINGELSHEIM the two varieties differ one from the other by the form of the leaflets: var. *dimorpha* has “Foliola ovalia vel oblonga satis magna” (leaflets ovate to oblong and much larger), var. *dumosa* has “Foliola rotundata, minuta” (leaflets roundish, small). In his view the var. *dimorpha* occurs in North Africa (Morocco and Algeria) and the Himalayan region as well while the var. *dumosa* is restricted to North Africa. He clearly points out in a note that the var. *dimorpha* sensu WENZIG does not coincide with his own description (“Nota 2. Varietas *dimorpha* WENZIG non

cum varietate *dimorpha* a me supra descripta congruit.”). This explains why the var. *dimorpha* LINDELSH. could occur in the Himalayan region while var. *dimorpha* WENZ. is restricted to North Africa. But the name given by VON LINDELSEIM is a later homonym and is therefore illegitimate.

More recently HANS SCHELLER (1977) argued that the recognition of the two varieties *dimorpha* and *dumosa* in cultivated plants has little taxonomical value. In his opinion there is little difference between the types of *Fraxinus xanthoxyloides* (from the Himalaya) and *F. dimorpha* (type BALANSA N° 970). The differences in size and pubescence of leaves and leaflets are part of the range of variation of the

species. Moreover, in the BALANSA exsiccata the leaflets on sterile branchlets are only 15 mm long, while those on fertile shoots go up to 70 mm as is known for many other members of this genus. SCHELLER argues also that sterile specimens growing in unfavourable situations can remain for a long time in such a stage before they switch over to a fertile state.

In a study on the phylogenetic relationships within *Fraxinus*, WALLANDER (2008, p. 39) maintains the lumping of *Fraxinus dimorpha* into *F. xanthoxyloides* without further discussion: “*Fraxinus xanthoxyloides* (Afghan or Algerian ash) distributed from Morocco and Algeria in North Africa through the Middle East to the Himalaya and China”.

There are only few studies available on the systematic position of *Fraxinus dimorpha* and its variety. When we look at some important taxonomic databases accessible online, there seems to be, contrarily to the foregoing paragraphs, a consensus for accepting *Fraxinus dimorpha* as a species on its own. The World Flora Online website accepts *Fraxinus dimorpha* with reference to The Plant List which states that “The record derives from WCSP (data supplied on 2012-03-23)”. The WCSP stands for World Checklist of Selected Plant Families and points to a compilation by GOVAERTS & GREEN (2022) on the Oleaceae family. The name *Fraxinus dimorpha* is also accepted by the BGCI Global Tree Search facility and by the IUCN (International Union for Conservation of Nature). Interesting to note that *Fraxinus dimorpha* has recently been assessed for the IUCN Red List of Threatened Species in 2017 (RANKOU ET AL. 2020) and is listed as Endangered. BARSTOW ET AL. (2018) also accept *Fraxinus dimorpha* in their Red List of *Fraxinus*.

The website Trees and Shrubs Online (TSO 2022), which is a digital continuation

and update of Bean’s Trees and Shrubs Hardy in the British Isles, still maintains the Algerian and Moroccan plants on the level of varieties of *F. xanthoxyloides* as var. *dimorpha* and the shrubby form as var. *dumosa*²⁾.

HERBARIUM SPECIMENS ONLINE

In the Kew Herbarium Catalogue, we found two herbarium specimens catalogued as *Fraxinus xanthoxyloides* var. *dimorpha* (sensu WENZIG!) both collected by J.E. STOCKS (N° 900) in Afghanistan and marked as “type specimen”. The first sheet says it has been collected in “Beloochistan” in 1851 by J.E. STOCKS (there is also a stamp Herbarium Benthamianum 1854). A second sheet shows a label with the number “900” and the name *Fraxinus* with the word “Nichara” at the bottom. Nichara is a place in the region of Balochistan in Pakistan (some 800 km SW of Islamabad). Later someone wrote on the label “*xanthoxyloides* or *moorcroftiana*” (on this sheet there is also a herbarium stamp, but name and date are Herbarium Hookerianum 1867).

No other types with the name “*dimorpha*” were found in the online Herbarium. It seems a bit odd to find type specimens of the var. *dimorpha* which were collected in Asia while this variety has not been described as occurring in that region. In the Kew database the Type Status is marked as “Unknown type material”.

More interesting was our virtual visit of the Herbarium Plantentuin Meise (Belgium). There were only three specimens available online under the name *Fraxinus xanthoxyloides* and none as *F. dimorpha*. Two of these were

²⁾ The TSO website has not yet been updated for the genus *Fraxinus*.

collected³⁾ in Algeria by ANDRÉ DUBUIS, Professor of botany at the École Nationale Supérieure Agronomique of Algiers (ENSA). The voucher DUBUIS N° 12424, collected in the wild in 1985 at Oued-Taga near Batna, is most interesting as it shows under the label name "*Fraxinus xanthoxyloides* WALL. (syn. *F. dimorpha* COSS. & DURIEU)" two forms of this taxon [Ill. 4]. At the bottom of the label is a note that reads: "Chaque part comporte deux rameaux représentant les formes foliaires extrêmes mais il existe entre elles des intermédiaires. Par ailleurs aucun arbre de la station n'était fructifère." So, on the sheet we see the two extremes of the species (above with large leaflets, beneath with small roundish leaflets); and DUBUIS says there exist also intermediary forms. The form represented on the lower part of the sheet belongs clearly to the var. *dumosa* originally described by CARRIÈRE. We notice that this voucher specimen of DUBUIS 12424 has also been used by WALLANDER (2008, table 4, p. 47) and is registered in the GenBank-database under accession number EU314899.

PLANTS IN CULTIVATION

Looking at some plants in cultivation might help to evaluate the status of our small-leaved shrubby taxon. Going through several websites and online databases we found very few

botanic gardens or nurseries listing the names *Fraxinus xanthoxyloides* or *F. dimorpha* and their possible varieties.

Botanic Gardens Conservation International (BGCI) has an online database listing more than 1.5 million plants in cultivation worldwide at 1,194 institutions. *Fraxinus dimorpha* is, according to this database, present in only 5 ex situ sites worldwide!

Table 1 shows the occurrence of *Fraxinus xanthoxyloides* and its allies in Belgium. This taxon is very rare in our botanical collections and gardens. Some specimens reported by DE MAEGD & VAN DEN BOSSCHE (2006) are probably not alive or could have been misidentified (pers. comm. JEF VAN MEULDER).

Belgian botanical gardens and arboreta

The plant search facility PLANTCOL (www.plantcol.be), encompassing 9 botanical gardens and arboreta from Belgium, does not mention *Fraxinus dimorpha*. Two gardens, Arboretum Wespelaar and Arboretum Robert Lenoir, have wild accessions of *F. xanthoxyloides*. Meise Botanic Garden is the only one featuring both *F. xanthoxyloides* and its var. *dumosa*. As former curator of the outdoor collections I have always had some doubts about the identity of this var. *dumosa*. It is a multi-stemmed shrubby plant but quite large in overall habit. Both plants were acquired from Hillier Nurseries in the spring of 1981 together with another plant named *F. xanthoxyloides* var. *dimorpha*. The latter was noted as dead in 1985. But the plant still in collection under the name var. *dumosa* corresponds quite well with the *F. dimorpha* depicted by DIPPEL. Pictures of the plant labelled as *F. x.* var. *dumosa* are available on the website of Meise Botanic Garden⁴⁾. Scans of this same plant are available on the website of Arboretum Wespelaar⁵⁾. In my opinion it should be named *F. dimorpha*. Possibly the original

³⁾ These collections were made in the framework of the "Société pour l'échange des plantes vasculaires de l'Europe et du bassin méditerranéen. Edit. J. LAMBINON (LG) – Fascicule 21 (1986)" as mentioned on top of the voucher labels.

⁴⁾ <https://www.botanicalcollections.be/accession/19810488>

⁵⁾ <https://www.arboretumwespelaar.be/Default.aspx?L=N&WPID=312>



4 – Voucher specimen DUBUIS #12424 labelled *Fraxinus xanthoxyloides* WALL. (syn. *F. dimorpha* COSS. & DURIEU) which shows the two extremes of *Fraxinus dimorpha* occurring in Algeria: above with large leaflets, beneath with small roundish leaflets. [<https://www.botanicalcollections.be/specimen/BR0000027285886V>; Botanic Garden Meise, Botanical Collections – Herbarium]

plants of both varieties have been mixed up at the time of delivery or planting out in the collection?

Another Belgian plant search facility is the BELTREES-database which comprises only single-stemmed trees occurring in plant collections, public parks and private gardens as well. Again, the *Fraxinus xanthoxyloides* of Meise Botanic Garden is present (as Belgian champion tree with a girth of 86 cm in 2012). Two other plants are listed, growing both at Namur, one at the Arboretum de la Citadelle (10 cm in 2009) and the other one at Square Baron Fallon (25 cm in 2017). The latter one has been briefly mentioned by our society member JEAN-PIERRE MAES (2019) under the name *Fraxinus xanthoxyloides* ‘Dumosa’.

A plant at Arboretum Bokrijk received in 2014 as *F. xanthoxyloides* var. *dumosa* has been identified as typical *F. xanthoxyloides* (pers. comm. JEF VAN MEULDER).

In a paper on the genus *Fraxinus* in Belgium by PHILIPPE DE SPOELBERCH (2013, p. 68) he briefly mentions a specimen of *Fraxinus xanthoxyloides* “de forme très arbustive” at Arboretum Waasland. The leaves are depicted in his fig. 20 and resemble those of *F. dimorpha* depicted by DIPPEL. Apparently, it figured at that time in the BELTREES-database but has since disappeared from it.

⁶⁾ <https://arboretum.oost-vlaanderen.be/index.cfm?action=search.details&kind=plant&id=7994>

⁷⁾ <http://www.jardin-florilege.eu/fr/eshop/fraxinus-xanthoxyloides-dumosa>

⁸⁾ <https://pflanzenraritaeten.com/fraxinus-xanthoxyloides-var.-dumosa>

⁹⁾ <https://www.ebben.nl/nl/treeebb/frxdumos-fraxinus-xanthoxyloides-var-dumosa/>

¹⁰⁾ <http://www.hkolster.nl/home-nl/+foto-bestanden/+fraxinusxdumosa.htm>

¹¹⁾ <https://www.heckenpflanzen.ch/laubgehoeelze/exoten/fraxinus-xanthoxyloides-var-dumosa.php>

We found a most interesting specimen at the website of Arboretum Het Leen, Eeklo [Ill. 5]. A plant labelled as *F. xanthoxyloides* var. *dumosa* is depicted (photo by JAN DE LANGHE) and shows interlacing branches with very small roundish leaflets: this is the “real thing”!⁶⁾

Another specimen has been reported from the Parc du Cinquantenaire in Brussels. It is briefly described by GÉRARD CARBONELLE (2018) in a paper published on the visit of that parc by our society: “on trouve rapidement l’espèce *Fraxinus xanthoxyloides*, ici représentée dans sa var. *dumosa*”. I know this small tree: it has been grafted at 1.8 m and is growing awkwardly; it has large leaves and looks just like an ordinary *Fraxinus xanthoxyloides*.

Some other gardens and nurseries in neighbouring countries

Searching the internet, we found few sites mentioning the var. *dumosa*, under *Fraxinus xanthoxyloides* or *F. dimorpha*.

In Belgium the nursery Les Jardins du Florilège says they can deliver this variety on demand and they show a picture of the right plant⁷⁾.

Herrenkamper Gärten – Pflanzenraritäten in Germany is one of those who depicts the right thing too: small straggling shrub with interlacing branches set with very small leaves⁸⁾ [Ill. 6].

Ebben Nurseries in The Netherlands has also the *F. x.* var. *dumosa* in its assortment but depicts three types of leaves on the website, so not sure if they can deliver the true small-leaved shrubby form of *F. dimorpha*⁹⁾.

HENNY KOLSTER too has *F. x.* var. *dumosa* on his website but the plant depicted looks more like the ordinary *F. xanthoxyloides*¹⁰⁾.

Heinis Baumschulen, Liestal, in Switzerland, has also a form of *F. x.* var. *dumosa* but this is clearly an erect growing form with larger leaves¹¹⁾.



5 – *Fraxinus dimorpha* var. *dumosa*: the real thing! Arboretum Het Leen, Eeklo [J. De Langhe, 14-06-2015]

The Czech Nursery Zahradnictví Kouzelný svět, at Štěpánovice, shows a small plant but with larger leaves, so probably not the right taxon¹²⁾.

We could find few botanic gardens featuring the var. *dumosa* in their collection. A plant at the Botanischer Garten und Botanisches Museum Berlin-Dahlem in Germany is depicted by ANDREA MORO in the Dryades project (led by the Dipartimento di Scienze della Vita, Università di Trieste)¹³⁾. Again, we see a quite large multi-stemmed shrub with large oblong leaves.

Finally, we need to mention a tree at Trompenburg Gardens & Arboretum (which figures also in a report of the visit to this garden by

our society in 2021; see further in this edition of *Belg. Dendrol. Belg.*). Some historical facts and many pictures of this tree are provided on the Monumental trees website¹⁴⁾. It is said that this tree has been planted in 1900 at Trompenburg and has been transplanted, already as a large tree, inside the arboretum in

¹²⁾ <http://www.kouzelnysvet.eu/zahradnictvi/eshop/2-1-Listnate-dreviny/287-2-Jasan-Fraxinus/5/1054-Jasan-zlutodrevovy-var-Dumosa>

¹³⁾ http://dbiodbs.units.it/carso/chiavi_pub26?spez=12974

¹⁴⁾ https://www.monumentaltrees.com/nl/nld/zuidholland/rotterdam/118_arboretumtrompenburg/22911/



6 – *Fraxinus dimorpha* var. *dumosa*: small straggling shrub with interlacing branches set with very small leaves.
Herrenkamper Gärten, Siedenburg, DEU
[Herrenkamper Gärten, 18-08-2009]

1958. It has been grafted on ordinary *Fraxinus excelsior*, has a girth of 182 cm at 1.3 m and a height of 12.4 m (2021). PIET DE JONG (2013) mentions this tree in his paper on *Fraxinus* in Dendroflora and says that this specimen has grown larger than has been indicated in lot of descriptions of this species. In an earlier paper (DE JONG 1989) he had already pointed out that it was well known that the use of *F. excelsior* as an understock for this species could have a strong influence on the size of the leaves. In my opinion the tree at Trompenburg should be regarded as an “ordinary” *Fraxinus xanthoxyloides* or *F. dimorpha*. Possibly this specimen tree has been used by Dutch nurseries as a mother tree for grafting and led to the spreading of the wrong type in other nurseries and collections.

CONCLUSIONS

- 1) The original plant from which the variety (*F. dimorpha* var. *dumosa*) has been described arose from seed most probably collected by BENJAMIN BALANSA in 1852-1853.
- 2) The correct authority for var. *dimorpha* as a variety of *Fraxinus xanthoxyloides* is WENZIG (and not LINDELSHEIM) and the name should be restricted to the plants occurring in North Africa.
- 3) The name *Fraxinus dimorpha* seems to be a generally accepted species on its own by most databases and especially by conservation authorities and researchers of the flora of Algeria and Morocco.
- 4) From the herbarium voucher DUBUIS #12424 we may conclude that the var. *dumosa* is a good concept and if we accept the status of *Fraxinus dimorpha* as a species then the combination *Fraxinus dimorpha* var. *dumosa* as originally published by CARRIÈRE could still stand.
- 5) It seems that a lot of plants in cultivation under the name *F. xanthoxyloides* var. *dumosa* should be reidentified as *F. xanthoxyloides*, *F. dimorpha* or *F. dimorpha* var. *dumosa*.
- 6) The taxa *Fraxinus xanthoxyloides*, *F. dimorpha* or its variety are very rarely cultivated in collections and nurseries. Therefore, any name change will have little impact on plants in collections or in the trade.
- 7) Further propagation of the var. *dumosa* should be restricted to grafting or layering of the small shrubby form with interlacing branches and small roundish leaves.
- 8) It might be advisable to use a cultivar name for genuine and vegetatively propagated material: *F. dimorpha* ‘Dumosa’.

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Table 1 – Gardens and Arboreta in Belgium listing *Fraxinus xanthoxyloides*, *F. dimorpha* or their var. *dumosa*

GARDENS & ARBORETA	XANTHOXYLOIDES	DIMORPHA	VAR. DUMOSA	ORIGIN/SOURCE	REFERENCE	ILLUSTRATIONS JDL	REMARKS
Meise BG, BEL	x(c)		x(c)	Hillier Nurseries, GBR	Plantcol, Beltrees	Scans & Photos	Champion Tree (86cm in 2012)
Arb. R. Lenoir, Rendeux, BEL	x(w)			Maurice Foster, GBR	Plantcol		
Arb. Wespelaar, BEL	x(w)			Werner Brockmann, DEU	Plantcol	Scans & Photos	collected in Pakistan, Utrar-Tal, ca 3000m
Arb. Bokrijk, BEL			x(c)	Kolster, NLD	pers.comm. Jef Van Meulder		identified as <i>F. xanthoxyloides</i> ; acc.n° 20140830
Square Baron Fallon, Namur, BEL	x(?)				Beltrees; Belg.Dendrol. Belg.2018:186-193		25cm (2017)
Arb. De la Citadelle, Namur, BEL	x(?)				Beltrees		10cm (2009)
Arb. Het Leen, Eeklo, BEL			x(c?)		website Het Leen		
Arb. Waasland, Beveren-Waas, BEL			x(c?)		Belg.Dendrol. Belg.2012:68		
Parc du Cinquantenaire, Brussels, BEL			x(c?)		Belg.Dendrol. Belg.2017:210		
Tuinwijk van Beverlo, Beringen, BEL		x(?)			De Maegd (Onroerend Erfgoed)		68cm(ca2006?); Lost or misidentified?
Kioskplein, Beringen, BEL	x(?)				De Maegd (Onroerend Erfgoed)		68cm(ca2006?); Lost or misidentified?

Legend: x: present
(c): cultivated source
(w): wild source
(?): source unknown
JDL: JAN DE LANGHE