EURO+MED PLANTBASE

A GUIDE FOR CONTRIBUTORS OF INITIAL TAXONOMIC ACCOUNTS

VERSION 2.0
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Compiled for the Euro+Med PlantBase Editorial Committee by:

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CHANGES MADE SINCE VERSION 1.9

Page 36: The following paragraph has been added:

Like TDWG, Euro+Med is an international intitiative, open to people from all nations, and the geographical system presented here is intended solely for the purpose of clariy of communication. It should not be taken to imply recognition of any government, any political persuasion, or any political boundary. In disputed territories Euro+Med PlantBase follows a consistent policy of only accepting those national boundaries which are currently recognised by the United Nations.

Page 36: The description of the territory of Azerbaijan, has been ammende to read@

Ab Azerbaijan. This comprises:
Ab(A) Azerbaijan
Ab(N) Nakhichevan

CHANGES MADE SINCE VERSION 1.8

Page 36: The subdivision of Azerbaijan, Ab(A) has been broadened to include the former autonomous oblast of Nagorny-Karabakh. This territory was previously included as a subdivision of Armenia.
Page 36: Armenia (Ar) no longer includes a subdivision for the former autonomous oblast of Nagorny-Karabakh.
Page 10: Geographical changes listed above made to *pro-forma*.

CHANGES MADE SINCE VERSION 1.7

Page 37: Code for Spanish North African Territories Ma (S) changed to Ma (E); Code for Western Sahara Ma (W) changed to Ma (S).
Page 37: The former Yugoslav Republic of Macedonia Mc, changed to The former Jugoslav Republic of Makedonija Mk.
Page 38: Federal Republic of Yugoslavia Yu changed to Serbia & Montenegro SM. Subdivisions of SM changed as follows:

Yu (M) changed to SM (M) = Montenegro
Yu (S) and Yu (K) joined to form SM (S) = Serbia including Kosovo and Vojvodina.

Page 36: Greek East Aegean Islands [AE] changed to East Aegean Islands. This has been subdivided as follows:

AE (G) = Greek East Aegean Islands (excluding Gökçeada)
AE (T) = Turkish East Aegean Islands, i.e. Bozcaada.

Page 36: Description for Greece [Gr] has been amended to: Greece, excluding the islands included under Kriti and the Greek East Aegean Islands, AE (G).
Page 38: Description for Turkey [Tu] has been amended to: Turkey, excluding Turkish East Aegean Islands [AE (T)].
Page 38: Tu (A) Asiatic Turkey (Anatolia) [includes Tenedos] has been amended to: Asiatic Turkey (Anatolia), excluding Bozcaada.
Page 38: Tu (E) Turkey-in-Europe [includes Imroz] has been amended to: Turkey-in-Europe, includes Gökçeada.
Page 41: The former Yugoslavia; see Yu, BH, Ct, Mc, Sv has been changed to: The former Jugoslavia; see SM, BH, Ct, Mk, Sl.
Page 10: Above changes in territory codes made to revision *pro forma*.

CHANGES MADE SINCE VERSION 1.6

Page 37: Code for Slovakia, Sl, changed to Sk.
Page 37: Code for Slovenia, Sv, changed to Sl.
Page 37: Code for Sicilia, Sc, changed to Si (S)
Page 37: Territories included in Sicilia changed **from**: Sicilia with Pantelleria, Isole Pelagie, Isole Lipari,

Ustica; excluding Malta Archipelago **to** Sicilia, Ustica, Egadi Islands, Pantelleria, Pelagie islands and Eolie Islands.

Page 36-37: Code for Malta, Me, changed to Si (M)

CHANGES MADE SINCE VERSION 1.5

Page 5, Section 5. A new sentence has been added: 'Taxonomic details and standards concerning a particular family or group should be agreed between the Author, FEP and revisions co-ordinator in Madrid before the revision is submitted.'

Page 14, section 6.5, paragraph 4. The following sentence has been added: 'All terminological details concerning a particular family or group should be agreed between the Authors, FEP and the taxonomic revisions co-ordinator in Madrid.'

CHANGES MADE SINCE VERSION 1.4

Page 34: Nagorny Karabakh changed to Former autonomous oblast of Nagorny Karabakh.

CHANGES MADE SINCE VERSION 1.3

Page 5, 5.4: separate species (not seprate species)
page 15, 6.6: Growth Form: Chamaeophytes (not Chamaeophtes)
page 16, 6.11.2: running up the Terek (not running running)
page 26, 6.14: perianth (not peraínth)
page 33, reference for Strid 1984-1991: Cambridge (not Cambrideg)
page 33, reference for Viney: Vaduz (not Vanduz).

TABLE OF CONTENTS

1. INTRODUCTION

Euro+Med PlantBase aims to provide an on-line database and information system for the vascular plants of Europe and the Mediterranean against an up-to-date and critically evaluated taxonomic core. It will provide a rich resource of information on the plant diversity of the Euro-Mediterranean region which will be of use to a wide variety of users including professional botanists, agronomists, foresters, horticulturalists, conservationists, environmental planners and national and international organisations. In addition to an on-line database, CD-ROM and hard copy outputs will be produced which will be tailor-made to suit specific user requirements. The project has received initial backing from the European Commission for three years and the specific outputs from this phase of the project are outlined in Section 14. Further details of the project may be obtained from the website: http://www.euromed.org.uk/.

The provision of new taxonomic treatments is an integral component of the Euro+Med PlantBase project. New revisions will be incorporated into the taxonomic core of the database. This will greatly enhance the information contained in the core, and hence increase the value of the entire project. This document includes an outline of the taxonomic revision process and guidelines for the preparation of new taxonomic revisions for Euro+Med PlantBase. The data standards adopted in the project are clearly stated so that new revisions conform to the strict standards that are necessarily adopted in a large database project of this type.

Authors will be clearly acknowledged in the database (see section 6.20) and in any subsequent outputs from the project which include their work in whole or in part. The language for the project is English. The taxonomic revision process described in this document is a provisional one. The revisionary process remains under development and one aim of the Euro+Med PlantBase project is to develop an on-line Taxonomic Editor.

2. OVERVIEW OF THE TAXONOMIC REVISION PROCESS

Taxonomic revisions are the overall responsibility of the Euro+Med PlantBase Editorial Committee. The committee appoints Family Editorial Panels, each comprising 2—4 taxonomic experts, to oversee new taxonomic revisions for a particular family or group of closely related families, who in turn, invite authors to contribute taxonomic accounts for a particular group or groups. In many cases, these will be based on taxonomic revisions recently published elsewhere by the author.

Following the appointment of an author, a timetable for submission of the new treatment is agreed. The author is then provided with all information on the group presently contained in the database, including names used in Standard Floras of the Euro-Mediterranean region (see Section 6.4.1). This information should be incorporated into the new treatment.

The account author prepares the new account following the guidelines set out in this document and submits the manuscript to the Family Editorial Panel for review. It is subsequently passed to the Euro+Med PlantBase Taxonomic Group in Madrid where the manuscript is checked for editorial consistency before being sent to all National and Regional Centres in whose area the taxon under revision is distributed. The centres indicate any problems with the treatment as it relates to their area. The author and Family Editorial Panel then liaise to resolve any problems highlighted by this review process. Following the successful reconciliation of any problems, the final manuscript is passed to the Editorial Committee for final approval before the treatment is incorporated into the database.

This process is based upon the highly successful model developed for *Flora Europaea* and is designed to maintain a taxonomic consensus across the entire area covered by Euro+Med PlantBase. The electronic submission and review of manuscripts wherever possible will help to ensure that the entire process remains as efficient as possible.

3. TAXONOMIC COVERAGE

Euro+Med PlantBase covers all vascular plants of Europe and the Mediterranean, including ferns and fern allies. The following are included: native species; naturalized aliens; frequently occurring casuals; frequent and well characterised hybrids; crop weeds; plants that are conspicuously cultivated outdoors (including crops planted on a field-scale and street and roadside trees, but not commonly grown park and garden plants.

4. GEOGRAPHICAL COVERAGE

The geographical coverage of Euro+Med PlantBase includes all of Europe (as defined by Brummitt, in press), Novaya Zemlya and Franz-Joseph Archipelago, the Caucasus, Asiatic Turkey and the East Aegean Islands, Syria, Lebanon, Israel, Jordan, Cyprus, Egypt, Libya, Tunisia, Algeria, Morocco and Macaronesia. A full list of geographical territories covered by the project is provided in Section 11.

5. TAXONOMIC CONCEPTS

Taxonomic details and standards concerning a particular family or group should be agreed between the Author, FEP and revisions co-ordinator in Madrid before the revision is submitted.

5.1. Taxonomic categories used

The following taxonomic ranks are used for accepted taxa in Euro+Med PlantBase: family, subfamily, tribe, subtribe, genus, subgenus, section, series, species, subspecies. The use of subfamily, tribe, subtribe, subgenus, section, series and subspecies is at the discretion of the Editorial Committee, who should be consulted before these ranks are used. Species aggregates (see section 5.5 below) may also be used by authors if approved by the Editorial Committee.

5.2. Families

The circumscription of families initially adopted for the project follows *Flora Europaea* (Tutin et al. 1968—1980; 1993) and may be amended as appropriate.

5.3. Species

Species should be delimited using all available evidence including morphology, geography, ecology and cytology. **They must, in all cases, be definable on morphology alone** although reference may also be made, in the Observations field, to other classifications in which species are defined using other criteria.

5.4. Infraspecific variation

Subspecies are the only infraspecific category used in Euro+Med PlantBase. Subspecies may be applied in the following situations:

1. In cases of widespread and more or less allopatric taxa that are morphologically less abruptly or less distinctly separated from each other than are species.
2. In cases where the taxa differ in chromosome number (for example as members of a polyploid series) and exhibit some correlated geographical or ecological differentiation but where the morphological differences are insufficient to permit satisfactory treatment as separate species.

Autonymic subspecies which do not occur in the Euro+Med PlantBase area should be referred to in the Observations Field.

Other infraspecific variation, including information on ploidy level variation, clinal variation, extensive non-clinal variation, etc., may be included in the Observations Field.

5.5. Critical groups

The approach adopted for the treatment of critical groups, i.e. in those large genera in which many taxa have been recognised and in which reproductive anomalies typically underlie the pattern of variation (e.g. *Alchemilla, Hieracium, Rubus, Taraxacum*), will be considered by the Euro+Med PlantBase Editorial Committee on a case by case basis, following expert advice.

6. FORM AND GENERAL STYLE OF EURO+MED PLANTBASE TAXONOMIC TREATMENTS

New treatments of all ranks should be submitted using the *pro forma* shown in Form 1. Each accepted taxon should be described using this form which may be downloaded from the Euro+Med PlantBase webpage (http://www.euromed.org.uk/) or obtained from the Secretariat (euromed.plantbase@reading.ac.uk). Revisions should, whenever possible, be submitted electronically.

Guidelines for completing the *pro forma* are provided below. Headings used below correspond with those used in Form 1.

Form 1. Euro+Med PlantBase Revision Pro forma

Nomenclature

Family:		**Author string:**	

ACCEPTED TAXON: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:							
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

BASIONYM: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:							
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

SYNONYM 1: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:				**Status:**			
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

SYNONYM 2: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:				**Status:**			
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

SYNONYM 3: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:				**Status:**			
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

EXCLUDED NAME 1: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:				**Status:**			
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

EXCLUDED NAME 2: Name and Place of Publication

Genus name:		**Infragen rank:**			**Infragen name:**		
Species name:		**Subsp. name:**			**Hybrid:**		
Author string:				**Status:**			
Author:				**Title:**			
Vol:Page:		**Year:**		**Periodical:**		**Book:**	

Morphology, Biology, Ecology

DESCRIPTION								
GROWTH FORM								
HARDINESS								
ECOLOGY								
PHENOLOGY								
KARYOLOGY	**Chromosome number(s):**							
	Author:				**Title:**			
	Vol:Page:		**Year:**		**Periodical:**		**Book:**	

Form 1. Contd.

Distribution

GENERAL DISTRIBUTION	**World:**	
	Euro+Med:	

Distribution and Status of Occurrence

Area	1	2	3	4	5	7
EM						
Ab:						
Ab(A)						
Ab(N)						
AE						
AE (G)						
AE (T)						
Ag						
Al						
Ar						
Au:						
Au(A)						
Au(L)						
Az:						
Az (C)						
Az (F)						
Az (L)						
Az (G)						
Az (P)						
Az (S)						
Az (J)						
Az (M)						
Az (T)						
Be:						
Be(B)						
Be(L)						
Bl:						
Bl(I)						
Bl(M)						
Bl(N)						
BH						
Br						
Bu						
By						
Ca:						
Ca (F)						
Ca (G)						
Ca (C)						
Ca (H)						
Ca (L)						
Ca (P)						
Ca (T)						
Co						
Cr						
Cs						
Ct						
Cy						
Da						

Area	1	2	3	4	5	7
Eg						
Es						
Fa						
Fe						
Ga:						
Ga(C)						
Ga(F)						
Ga(M)						
Ge						
Gg:						
Gg(A)						
Gg(D)						
Gg(G)						
Gr						
Hb:						
Hb(E)						
Hb(N)						
He						
Hs:						
Hs(A)						
Hs(G)						
Hs(S)						
Ho						
Hu						
Ir						
Is						
It:						
It(I)						
It(S)						
It(V)						
Jo						
La						
Le						
Li						
Lt						
Lu						
Ma:						
Ma(M)						
Ma(E)						
Ma (S)						
Mk						
Md:						
Md (D)						
Md (M)						
Md (P)						
Mo						
No						
Po						
Rf:						

Area	1	2	3	4	5	7
Rf (C)						
Rf (E)						
Rf (K)						
Rf (CS)						
Rf (N)						
Rf (NW)						
Rf (A)						
Rf (S)						
Rm						
Sa						
Sb						
Sg						
Si (M)						
Si (S)						
Sk						
Sn						
Su						
Sl						
Sy						
Tn						
Tu:						
Tu (A)						
Tu (E)						
Uk:						
Uk (K)						
Uk (U)						
SM:						
SM (M)						
SM (S)						

1: Occurence
2: Native Status
3: Introduced status
4: Introduction agency
5: Cultivated status
7: World Distribution Completeness

Form 1. Contd.

Other information

ILLUSTRATIONS	**Type:**				**Plate/Fig number:**			
	Author:				**Title:**			
	Vol:Page:		**Year:**		**Periodical:**		**Book:**	
IDENTIFICATION KEY								
OBSERVATIONS								
	Author:				**Title:**			
	Vol:Page:		**Year:**		**Periodical:**		**Book:**	
BIBLIOGRAPHY	**Author:**				**Title:**			
	Vol:Page:		**Year:**		**Periodical:**		**Book:**	
	Author:				**Title:**			
	Vol:Page:		**Year:**		**Periodical:**		**Book:**	
	Author:				**Title:**			
	Vol:Page:		**Year:**		**Periodical:**		**Book:**	
AUTHOR	**Name**							
	Address							
	E-mail							
DATE								

6.1. Family

The family, as circumscribed in *Flora Europaea* should be given.

6.2. Author String

Authority citations should follow the IPNI author index (http://www.ipni.org) standard. In instances where author names are not included in this standard, the name should be given in full, complete with initials, and the Secretariat should be informed of the omission so that IPNI can be contacted and the author in question added to the database.

The following conventions for author citations should be followed :

1. Single spaces should be inserted either side of the following: brackets; '&'; standard author abbreviations which include single spaces (e.g. Font Quer for Pio Font Quer). Spaces should not be used to separate initials of authors names. Thus:
   R.Br. is the abbreviation to be used for Robert Brown (1773 – 1858).
   R. Br. should not be used.

2. '&' should be used for 'and'

3. Where 'ex' may be used in citing an authority, as in:
   Draba corymbosa R.Br. ex DC.
   only the validating author should be cited, i.e.:
   Draba corymbosa DC.

4. Where 'in' may be used in citing an authority, only the author of the name should be cited. The author(s) or editor(s) of the work in which the protologue was published should not be included in the author citation:
   Draba dedeana Boiss. & Reut. is the format of author citation to be used for this species.
   Draba dedeana Boiss. & Reut. in Boiss should not be used.

5. Authorities should be cited in full; 'et al.' should not be used.
   Asplenium trichomanes subsp. *coriaceifolium* Rasbach, K.Rasbach, Reichst. & Bennert is the format of author citation to be used for this species.
   Asplenium trichomanes L. subsp. *coriaceifolium* Rasbach et al. should not be used.

6.3. Accepted Taxon: Name and Place of Publication

6.3.1. 'Genus'; 'Infragen. Name'; 'Species'; 'Subspecies'

All taxon names should be given in full.

The field 'Infragen. Name' is used to record the names of infrageneric taxa where these are used.

6.3.2. 'Infragen. Rank''

The 'Infrag. Rank' field is used to record the rank of infrageneric taxa. The following values are acceptable in this field: subgenus; series; section; species aggregate.

6.3.3. Hybrid

This field should be ticked if the taxon is a hybrid.

For named hybrids (e.g. *Geum* x *intermedium*) the specific epithet only should be included in the 'Species' field. In cases where the hybrid has not been named, the 'Species' field should be in the form: *dioica* x *latifolia* (for *Silene dioica* x *latifolia*). The 'x' should be separated from the specific epithets by a single space.

Parents of hybrids should be clearly indicated in the Observations Field (Section 6.15).

6.3.4. Author String

The author string reference in all cases refers to the author of the lowest ranked taxon. The format should follow that specified in Section 6.2 above.

6.3.5. Author

The author, or editor, of the work in which the taxon name was published should be given in the format described in Section 6.2 above.

6.3.6. Title

Book and periodical titles should be abbreviated according to the TDWG standard. For books, this is:

> Stafleu, F. A. and R. S. Cowan (1976 – 1988). *Taxonomic Literature*, Second edition. Vols. 1– 7. Bohn, Scheltema and Holkema, Utrecht.
> Stafleu, F. A. and E. A. Mennega (1992 – 1999). *Taxonomic Literature Supplements*. Vols. 1 – 6. Koeltz Scientific Books, Königstein, Germany.

For periodicals:

> Bridson, G. D. R. and E. R. Smith (1991). *Botanico-Periodicum-Huntianum/Supplementum*. Hunt Institute for Botanical Documentation, Pittsburgh.

Titles not included in these works should be given in full.

The volume (if appropriate) and page number, together with the date of publication, should be given.

The type of publication, i.e. book or periodical, should be indicated by placing a tick in the appropiate box.

Note: Works in press
The editorial committee appreciate that some treatments will be submitted whilst the primary taxonomic source remains in press. In such cases, the date should be given as '*in press*' until such time as the Secretariat can be informed of the full details and the entry amended. Works submitted for publication but not yet accepted are not acceptable for citation as Place of Publication.

6.4. Basionym, Synonyms and Excluded Names

Basionyms, synonyms (including *pro parte* synonyms) and excluded names should be recorded in the nomenclatural form.

Taxon names, author strings and places of publication should follow the format specified in Sections 6.3. Authors are encouraged to include as many critically evaluated synonyms as possible

The following values may be used in the status field:

- Basionym
- Synonym
- *Pro parte* synonym
- Homonym
- Misapplied

In the case of misapplied names, i.e. where 'non' may be used in citing an authority as in '*Draba tomentosa* sensu Hegi non Clairv.', the 'non' and following author(s) should be omitted and only the author misapplying the name should be given - Hegi in this example. The status field indicates that the name was misapplied by Hegi.

Where a name has been misapplied by many authors, the authority should be given as 'sensu auct.'.

6.4.1. Standard Flora Synonyms

The term 'Standard Flora', originally introduced by the Flora Europaea Editorial Committee, refers to works that are the most generally acknowledged by botanists in the country or region concerned as the most reliable source of information on the plants that occur there. In some cases there is more than one Standard Flora for a country or region. The Euro+Med PlantBase List of Standard Floras is provided in Section 10.

In Euro+Med PlantBase, Standard Floras are used as a source of names for the initial checklist upgrading process (see Section 10). Authors of new revisions will be supplied with a list of these names if the group has already been dealt with in the checklist upgrading process. The names provided represent those which are currently in use in the Euro-Mediterranean region, and authors are asked to ensure that all such names appear in their new treatment as either accepted names or synonyms.

The Editorial Committee recognise that for groups which are revised before the checklist upgrading process is complete (in 2002), it may not be possible to include all names in one or more of the Standard Floras. However, the co-operation of authors in incorporating any additional names when the information is available is requested.

In addition to names appearing in Standard Floras, it is at the discretion of the author to include any other names he/she thinks appropriate.

6.5. Description

A description should be provided of the taxon as it occurs in the Euro+Med Area. However, whenever this is misleading as a description on a world scale, this should be indicated by placing "(Euro+Med only)" after the description.

Descriptions of genera and species should be complete and parallel. There is no word limit but authors should aim for the minimum length possible. Characters shared by all species in a genus should be given in the generic description and should not be repeated in the species descriptions.

The terminology used in descriptions must be kept as simple as accuracy permits. In all cases it should be consistent with the definitions provided in Heywood (1993). In certain cases it may be helpful to provide explanations of unfamiliar terms in square brackets.

The organs of families and all other taxa are arranged in a fixed sequence to facilitates the comparison of descriptions. The sequence for flowering plants is given below. The sequence for other major groups will be provided on request. All terminological details concerning a particular family or group should be agreed between the Authors, FEP and the taxonomic revisions co-ordinator in Madrid.

Habit; sexuality; include underground parts if relevant
Indumentum if it can be described easily for the whole plant
Stems; branches
Bark
Leaves, presence or absence of stipules; petiole; lamina
Inflorescence; form, position; bracts; bracteoles
Flowers; shape, sex
Receptacle
Calyx
Corolla
Disc
Androecium
Gynoecium
Fruit
Seeds

Not all of these organs will be needed in every description. A diagnosis of a tribe, for example, may require the description of only one or two characters.

Indumentum should be included as indicated in this sequence only if it can be described easily for the whole plant, e.g. 'tomentose in all parts' or 'glabrous except hirsute calyx'. In other cases the description of indumentum should be organ by organ, where appropriate. Usage of terms for indumentum are as defined in Heywood (1993).

Details of attributes such as size, margins of leaves and petals, colour and texture, are usually omitted from descriptions of families.

In some cases it will be more appropriate to combine the sentences for the inflorescence and flowers, as for example when the flowers are solitary and axillary. When unisexual flowers are described separately the male is described before the female, and the organs are combined into one sentence for each sex, e.g. 'Male flowers: sepals 3–9, free or connate; petals 8 or absent; stamens 3–9, opposite sepals; ovary vestigial. Female flowers: ....'.

In general, if an organ has more than one of the parts being described use the plural, otherwise use the singular; for example, petals of a flower but lamina of a petal.

Each principal organ (e.g. leaves, stamens) begins a new sentence and its attributes are separated by commas. Secondary organs (e.g. lamina, anthers) are preceded by a semi-colon and the attributes again are separated by commas. For example in the description of the leaf in Thymelaeaceae: attributes of the whole leaf are given first, separated by commas and ending with a semi-colon; a part of the leaf, the stipule, is then described in a new phrase. For each organ the noun is given first in the phrase, followed by the qualifying or descriptive adjectives. Thus, 'Petals 5, linear...' rather than 'Five petals, linear...'. It is most important that ambiguity be avoided. Make sure that the adjectives refer to the correct noun.

If a single measurement or range of measurements is given without qualification, length is to be understood; where breadth or thickness is meant this should be stated explicitly. Where two measurements are given separated by a multiplication sign (‘x’), the first is to be understood as the length and the second as the breadth. Exceptional limits of measurement should be indicated in the form: sepals (5-)6-10(-12) mm, and of number in the form: stamens 5(10) or 5 or 10 (not 5,10) if a simple alternative is meant or 5(-10) if a range is meant. Length to width ratios should be given in the form ‘2-3 times as long as wide’. The same units of measurement should be used for the same structure in all species descriptions in a genus. All measurements should be given in cm or m. Measurements and numbers should always follow immediately after the noun they qualify, e..g perennial 60-100 cm. The only exception to this is for multiple organs, e.g. Bracts 5-7, 6.5-3 x 1-1.5 cm.

Seedlings are not described unless they show important diagnostic features, but characters of the seed, such as endosperm, are often included.

Reference to particular genera may be made in the family description (an example would be an atypical genus only tentatively placed in the family), if necessary.

6.6. Growth Form

Growth form should be recorded for species and subspecies entries only, using the Mueller-Dombois & Ellenberg (1967) classification. The following categories are used: Vascular Semi-parasites; Errant Vascular Hydrophytes; Therophytes; Phanerophytes; Chamaeopyhtes;

Hemicryptophytes; Geophytes; Epiphytes; Lianas; Hemi-epiphytes; Vascular Parasites; Vascular Saprophytes.

6.7. Hardiness

This should be given for species and subspecies only using the codes provided by Walters et al. (1986). The categories used are as follows:

H5 - hardy in favourable areas; withstands 0 to -5°C minimum.
H4 - hardy in mild areas; withstands -5 to -10°C minimum.
H3 - hardy in cool areas; withstands -10 to -15°C minimum.
H2 - hardy almost everywhere; withstands -15 to -20°C minimum.
H1 - hardy everywhere; withstands -20°C and below.

[The codes G1 and G2 which refer to plants that can only be cultivated under glass are not used as only plants growing outdoors are included in Euro+Med PlantBase].

Authors may find it useful to refer to the map in Walters et al. (1986:xv) which provides mean minimum January isotherms for Europe.

6.8. Ecology

Where known, the ecological characteristics of species and subspecies only should be indicated using the simplest and briefest terms possible. Altitudinal details, in metres, and as it relates only to the species distribution in Euro-Mediterranean region may be given where there is reliable evidence to do so.

6.9. Phenology

Where known, flowering, and fruiting periods should be given for species and subspecies entries. However, it should be borne in mind that phenology of widespread species may show considerable infraspecific variation.

6.10. Karyology

Published chromosome numbers may be given for species and subspecies only but *only where they are derived from material of known origin from within the Euro-Mediterranean area.* A bibliographic source must be given, together with the country of origin. Several chromosome counts may be provided for each taxon, if necessary.

The format for citation of bibliographic sources should follow that described in Sections 6.3.5 and 6.3.6.

6.11. General distribution

6.11.1. World Distribution

The distribution should be given on a continent-by-continent basis where the distribution is known. Continents should be cited in the following order: Europe, Africa, Asia-Temperate, Asia-Tropical, Australasia, Pacific, Northern America, Southern America, Antarctic.[1]

Taxa endemic to the Euro-Mediterranean region should be indicated by the statement 'Endemic to Euro+Med region'.

6.11.2. Distribution within the Euro-Mediterranean region

A brief and generalised summary of the geographical distribution of a taxon within the Euro-Mediterranean region should be given. No general rules about this can be laid down, but some useful descriptive terms, adapted from *Flora Europaea* and Brummitt (in press), are set out below.

Western Asia: Turkey (Anatolia); East Aegean Islands, Cyprus, Lebanon, Syria, Israel, Jordan, Sinai.

Caucasus: Transcaucasus republics (Armenia, Azerbaijan, Georgia); Russia south of a line running up the Terek river westwards to 45° E., thence along the eastern and northern boundaries of the Stavropol'skij Kraj (as marked in the *Times Atlas*) to meet the Kuban River a short distance east of Kropotkin, thence down the Kuban river to its more southerly mouth.

Northern Africa: Egypt (excluding Sinai); Libya; Tunisia; Algeria; Morocco and Spanish North African Territories.

Macaronesia: Azores; Canary Is; Cape Verde; Madeira; Selvagens.

Europe: Comprising all Europe and including European Russia (thus excluding Caucasus), Iceland, Førayar, Turkey-in-Europe and the Mediterranean Islands (excluding Cyprus and the East Aegean Islands). The southern boundary of Europe between the Caspian and Black Seas is defined as running up the Terek river westwards to 45° E., thence along the eastern and northern boundaries of the Stavropol'skij Kraj (as marked in the *Times Atlas*) to meet the Kuban River a short distance east of Kropotkin, thence down the Kuban river to its more southerly mouth. The eastern boundary of Europe is concordant with the eastern boundary of the Euro+Med PlantBase region.

Mediterranean: all territories within 100km of the Mediterranean Sea (including the Adriatic but not the Black Sea), and including also all Italy except the alpine region and all Spain except the west and north-west. *Western Mediterranean* and *Eastern Mediterranean* are divided by a line following the main watershed of Italy and running east of Sicilia. *Central Mediterranean* indicates the region between 8°E and 20°E.

Western Europe: Portugal; Spain; Baleares; France; Ireland; Northern Ireland; Great Britain; Førayar; Iceland; south-western Norway; Netherlands; Belgium; north-western Germany; Western Denmark (Jylland); Corse; Sardegna; part of north-western Italy and western Switzerland.

[1] Circumscription of continents follows Brummitt (in press) W*orld Geogrpahical Standard for Recording Plant Distributions.*

Eastern Europe: north-eastern Greece and the West Aegean Islands; Bulgaria; southern and eastern Romania; Finland; Estonia; Latvia; Lithuania; European Russia; Belarus; Ukraine (including Krym); Moldovia.

Northen Europe: Svalbard; Iceland; Førayar; Ireland; Northen Ireland; Great Britain (excluding southern England); Denmark; Norway; Sweden; Finland; Lithuania; Latvia; Estonia; Russia and Belarus north of a line running through Minsk, Tula, Penza, Orsk.

Southern Europe: Europe south of a line running through Bordeaux-Chambéry-Aosta-Locarno-Riva-Udine-Zagreb-Beograd-Ploesti-Odessa-Rostov-Astrakhan.

South-western Europe: Portugal; Spain; Baleares; Corse; Sardegna; southern France; north-western Italy.

North-western Europe: Iceland; Førayar; Great Britain; northern France; Belgium; Netherlands; north-western Germany; western Denmark (Jylland); Norway.

South-eastern Europe: Croatia south of the Sava; Bosnia Herzogovina; Serbia south of a line formed by the Sava and Danube; Montenegro; Kosovo; Albania; Macedonia; Greece (excluding the East Aegean Islands); Bulgaria; Turkey-in-Europe; south-eastern Italy; southern and eastern Romania; Moldovia; Kazakhstan, European Russia and Ukraine south of 48° N.

North-eastern Europe: Russia north of 56°N; Latvia, Estonia, Finland, eastern Sweden, and part of north-eastern Norway.

Central Europe: France (Alsace and Lorraine); Germany; Switzerland; Austria; Italian Alps from Monte Bianco eastwards; Hungary; Czech Republic; Slovak Republic; Poland; the Ukraine Carpathians; northern, western ad central Romania; Slovenia; Croatia north of the Sava; Sebia north of a line formed by the Sava and Danube.

Alps: separated from the Appennini at 8°15’E (above Savona); bounded on the east by the line Semmering-Graz-Maribor-Ljubljana-Trieste. Divided into three major divisions: *eastern, central* and *south-western* by the lines Arlberg-St Moritz-Chiavenna-Como and Genève-Chamonix-Aosta-Ivrea.

Arctic: used to designate all territories north of the Arctic Circle.

Fennoscandia: Norway, Sweden, Finland, Russia (Murmanskaja Oblast and Karelskaja A.S.S.R. only).

Extreme north: Arctic, together with Iceland, Fennoscandia, and Russia northwards from 64°N.

Carpathians: divided into *western, eastern and southern* divisions at the pass of Lupków (22°E) and the Oituz Pass (46°05’N).

Pyrenees: includes the subsidiary chains within 50km of the main watershed and extends westwards to Bilbao and Vitoria. Divided into *eastern, central* and *western* divisions at the Pont du Roi (0°45’E) and the Col du Somport (0°30’W).

Balkan peninsula: Croatia south of the Sava; Bosnia Herzogovina; Serbia south of a line formed by the Sava and Danube; Montenegro; Kosovo; Bulgaria; Albania; Macedonia; Greece (excluding the East Aegean Islands); Turkey-in-Europe.

Aegean: all islands of the Aegean Sea and those parts of Greece and Turkey which drain into the Aegean Sea or the Dardanelles.

It should be noted that in defining these terms, no attempt is made to draw precise boundaries for the various regions. The regions are approximate and terms are defined in an effort to ensure some consistency of use. Latitudes and longitudes should consequently be interpreted as approximate indications only. The precise statement of geographical distribution of each species is provided in the Distribution and Status of Occurence Field (Section 6.12, below).

Note: taxa with distributions largely outside of the Euro-Mediterranean Region
Some taxa may occur in only one, or a few, localities in the Euro-Mediterranean region but have a more general distribution elsewhere. An example of this situation is *Dionysia bornmuelleri* (Pax) Clay which occurs in the extreme south-west of Turkey and also in north-eastern Iraq and western Iran. In such an example it would be appropriate to describe the distribution as:

extreme south-west of Turkey; also in Iran and Iraq.

Note: non-native taxa
For taxa that are naturalised or cultivated over whole or part of their Euro-Mediterranean distribution, the native range should be indicated before the non-native distribution. e.g. 'native in China, naturalised in North-western Europe'; 'native in South-eastern Europe, cultivated throughout Europe'.

6.12. Distribution and status of occurrence

Distribution and status of occurrence should be completed for species, subspecies and hybrid entries only.

An agreed list of Euro+Med PlantBase territories has been produced and the presence of a taxon in each of the territories should be recorded together with the following information where available: status (native/introduced); the introdution agency where approporiate; cultivated status, where appropriate; world distribution completeness. Data is recorded using the TDWG POSS Standard. The recording scheme is explained below.

6.12.1. Geographical territories

The list of geographical territory names and codes for use in the Euro+Med PlantBase project is listed in Section 11. The codes are, for the most part, based on those used in *Flora Europaea* and *Med-Checklist*, with alterations or additions made where necessary. Each territory is represented by a two letter code. Thus, Albania, for example, is represented by the code Al. However, in some cases, areas represented by a two letter code are further subdivided, for example, Au [Austria with Liechtenstein], comprises two subunits: Au(A) [Austria] and Au(L) [Liechtenstein].

The geographical territory scheme is compatible with the TDWG geographical standard (Brummitt, in press). In cases of ambiguity or uncertainty in the boundaries of territories, the maps provided by Brummitt (in press) are considered definitive for the purposes of this project. The names and boundaries adopted do not imply the recognition of any government, political persuasion or political boundary and whilst the scheme is broadly based on political boundaries in 1999, the scheme is designed solely for the purpose of clarity of communication of data on the distribution of organisms.

All TDWG level 4 Basic Recording Units within the Euro+Med region are represented in the Geographical Territory Standard with the exception of those of North Caucasus. The North Caucasus Euro+Med geographical territory [Rf(CS)]corresponds with the TDWG level 3 area NCS. With this exception, all other Euro+Med Geographical Units either:

1. Correspond exactly with TDWG level 4 Basic Recording Units. For example, Ag (Algeria) corresponds exactly with the TDWG level 4 Basic Recording Unit ALG-OO.

2. Are subdivided so that the subunit in the Euro+Med Geographical Standard corresponds with a TDWG level 4 Basic Recording Unit. For example, Be (Belgium with Luxembourg) comprises two subunits, Be(B) (Belgium) and Be(L) (Luxembourg) which correspond with the TDWG Basic Recording Units BGM-BE and BGM-LU respectively.

3. Comprise a number of subunits which collectively correspond to a TDWG level 4 Basic Recording Unit. This situation occurs when the Euro+Med Geographical Territory Standard provides greater resolution of geographical areas than does the TDWG standard. For example, Bl (Baleares) comprises three subunits: Bl(I) (Ibiza); Bl(M) (Mallorca); Bl(N) (Menorca). The three subunits are not represented by TDWG level 4 codes. However, Bl corresponds with the TDWG Basic Recording Unit BAL-OO.

Spellings follow the TDWG Standard (Brummitt, in press) for all territories listed in this work. Local spellings, where these differ, are only adopted for territories which are included in the Euro+Med Geographical Territory Standard but are not included in the TDWG Geographical Territory Standard (for example, the islands comprising the Azores).

In addition to those territories and codes which should be used by authors of revisions to record the distribution of taxa (Section 11), there are also a number of ‘Additional Territories, listed in Section 12. These comprise geographical territories which were used in either *Flora Europaea* (and consequently in the initial Euro+Med database) or in *Med-Checklist* but are outdated or unsuitable. An example of such an ‘Additional Territory’ is Rs(W). This comprises Ukraine [Uk(U)]. Moldova, [Mo]; and a number of oblasts of the Russian Federation belonging to the Euro+Med PlantBase geographical territory Rf(C).

Following the Checklist Upgrading Process the distributions of taxa may be recorded in the database using these codes. Authors of new revisions are asked to convert these data into the Euro+Med Standard Territories. For example, if an author is supplied with the information that a plant is present in Rs(W), he/she should attempt to ascertain and record in which of the Standard Territories the plant is distributed (i.e. Uk(U), Mo and Rf(C)). The relationship between ‘Additional Territories’ and ‘Standard Territories’ is illustrated in Section 12.

The territory code EM [Euro+Med PlantBase Area] is included to allow assessments of taxon endemicity to be made. It is used to indicate whether or not a particular taxon is confined to the Euro+Med area (see Section 6.12.2 below).

6.12.2. Status and Endemicity

Geographical data are recorded in the database using the TDWG Plant Occurrence and Status Scheme [POSS] (WCMC, 1995). The POSS standard deals with a wide range of information relating to the distribution, status (native, introduced, cultivated) and level of endemism of taxa. The scheme comprises seven Data Fields, namely: Occurrence, Native Status, Introduced Status, Introduction Agency, Cultivated Status, Area Distribution Completeness and World Distribution Completeness.

The Data Field descriptions below and the Data Value definitions provided in Tables 1—7 are entirely consistent with the TDWG standard, although the definitions are less inclusive than those of TDWG. Thus, all plants included as 'Introduced' in the Euro+Med PlantBase system would also be included as Introduced following the TDWG definitions. However, infrequent casuals, which are not included in Euro+Med PlantBase as 'Introduced', could be included in the more inclusive TDWG category 'Introduced'.

In Tables 1—7, those values most commonly used by Data Inputters are indicated in bold.

Data Field 1. Occurrence: defines whether or not the plant in question occurs in the area concerned regardless of its status. The values that may be recorded in this Data Field are given in Table 1.

Data Field 2. Native Status: defines whether or not the plant is Native in the area concerned using the values outlined in Table 2.

Data Field 3. Introduced Status: used to record whether or not the plant is introduced in the area concerned. Cultivated species are not recorded as introduced. Only plants that are naturalised (i.e. well established and successfully reproducing either sexually or asexually) or which are frequently occurring casuals are included. The values that may be recorded in this data field are defined in Table 3.

Data Field 4. Introduction Agency: this is completed when the means of introduction of an introduced taxon (see Data Field 3, above) is known. The use of this data field must therefore be restricted to cases where there are clear records showing the recent arrival of a species in an area in which it has never been recorded before, along with evidence about the means of arrival. The values are defined in Table 4.

Data field 5. Cultivated Status: used to record whether or not the plant is cultivated in the area concerned. Cultivated plants are defined as species that are conspicuously cultivated outdoors (including species cultivated on a field-scale and street and roadside trees). The values for use in this field are defined in Table 5.

Data Field 6. Area Distribution Completeness: concerns the completeness of POSS records for a given plant area**. It is designed for use with TDWG Geographical Territories of levels 1 – 3 and need not be considered by authors of revisions.** The available values are provided, for information only, in Table 6. There is no field to record these values on the revision pro forma.

Data Field 7. World Distribution Completeness: allows the area of endemism for each taxon to be calculated by indicating whether or not the plant-area records in the database represent the complete world native distribution for the plant. The values for use in Data Field 7 are defined in Table 7. This field should be completed as follows:

For taxa that are endemic to an individual Euro+Med territory, Data Field 7 should be completed for that territory.

> E.g. *Armeria eriophylla* Willk. is endemic to Portugal and the value ‘C’ should be entered into Data Field 7 for the territory Lu [Portugal].

For taxa which are endemic to the Euro+Med area, Data Field 7 should be completed for the territory E+M.

> E.g. *Clematis cirrhosa* L. is endemic to the Euro+Med area and the value ‘C’ should be entered into Data Field 7 for the territory E+M [Euro+Med PlantBase Area].

Code	Value	Explanation
P	Present	The plant is present in the area and meets the criteria for inclusion in Euro+Med PlantBase (i.e. it is either a native species, naturalized alien, frequently occurring casual, frequent and well characterised hybrid, crop weed, or a plant that is conspicuously cultivated outdoors (either a crop planted on a fieldscale or street tree but not a commonly grown park or garden plant) Adventives, casuals etc. are not included although noxious weeds (other than those that have become naturalised which will be included for that reason) may be recorded).
S	Assumed Present	It is highly probable that the plant does occur in the area.
D	Doubt about presence	There is doubt about whether the plant presently occurs in the area. This might be because all records are very old, locality details are uncertain, etc.
E	Extinct	The plant was once in the area (P or S) or may once have been in the area (D) but is now extinct in the area.
F	Recorded as present in error	The plant has been recorded as present in the area concerned but the record has been discounted or disproved.
A	Absent	There are no records to suggest that a plant has ever occurred in the area concerned.

Table 1 Codes for recording Occurrence (Data Field 1)

Code	Value	Explanation
N	Native	The taxon is native (autochthonous) within the area concerned (as contrasted with ‘Introduced’ and ‘Cultivated’ defined in Tables 4 & 6 below)
S	Assumed to be native	Assumed to be native to the area concerned.
D	Doubtfully native	There is doubt as to whether the status of the plant in the area concerned is native or not.
E	Formerly native (extinct)	The plant is native, doubtfully native or assumed to be native in the area concerned and has become extinct as such.
A	Not native	The plant is definitely not native.
F	Recorded as native in error	The plant has been recorded as native in the area concerned but all such records have been disproved or discounted.

Table 2. Codes for recording Native Status (Data Field 2)

Code	Value	Explanation
I	Introduced	The plant has been recorded growing in an area that is outside of its assumed true and normal distribution. This implies evidence that the plant did not formerly occur in the area and also that the plant is either: established and successfully reproducing (either sexually or asexually) or a frequently occurring casual. The plant must not be in cultivation: it does not mean (or include) "Introduced to Cultivation". The means of introduction, whether by man or any natural means is irrelevant and may be unknown.
S	Assumed to be introduced	There is doubt as to whether the Status of the plant in the area concerned is Introduced, as defined above, or not. All records about the introduced status of the plant in the area are in doubt.
D	Doubtfully introduced	There is doubt as to whether the Status of the plant in the area concerned is Introduced, as defined above, or not. All records about the introduced status of the plant in the area are in doubt.
E	Formerly introduced (Extinct)	The plant is introduced, doubtfully introduced or assumed to be introduced in the area concerned and has become Extinct as such. The criterion of extinction is that the plant was not found (as an Introduction) after repeated searches of known and likely areas (i.e. sites within the area covered by the record), even though the plant may be extant elsewhere.
A	Not introduced	The plant is definitely not introduced (as defined above) in the area concerned .
F	Recorded as introduced in error	The plant has been recorded as introduced in the area concerned but all of those records have been disproved or discounted. A known fallacious introduced record must have been made, and it must be known that the plant does not occur as an introduction in the area.

Table 3. Codes for recording Introduced Status (Data Field 3)

Transfer Value	Value	Explanation
M.	Introduced by humans	The plant is introduced and the agent is known to be man, whether accidental or deliberate. This example includes, for example, taxa that have escaped from cultivation and those that occur as a result of deliberate transplantation
N	Introduced by natural means	The plant is introduced, but the agent is considered not to be man. The actual agent may be anything other than man, including wind, current and animals for example, as vectors. The evidence leads to the conclusion that the plant has arrived without man's direct influence. If the agency is unknown, then it must be known not to be man, i.e. it is sufficient that there is evidence that the means of introduction was not man, without knowing the actual means of introduction.

Table 4. Codes for recording Introduction Agency (Data Field 4)

Code	Value	Explanation
C	Cultivated	The plant is established in cultivation outdoors in the area concerned. Only plants that are conspicuously cultivated outdoors should be included (includes crops planted on a field-scale and street and roadside trees).
S	Assumed to be cultivated	Assumed to be Cultivated in the area concerned.
D	Doubtfully cultivated	There is doubt as to whether the status of the plant is cultivated or not in the area concerned. All records about the cultivated status of the plant in the area are in doubt.
E	Formerly cultivated (extinct)	The plant was at one time cultivated, doubtfully cultivated or assumed to be cultivated in the area concerned and has become extinct in cultivation in this area, even though it may be extant elsewhere.
A	Not cultivated	The plant is definitely not cultivated (as defined above) in the area concerned.
F	Recorded as cultivated in error	The plant has been recorded as Cultivated in the area concerned but all of those records have been disproved or discounted. A known fallacious record of cultivation must have been made, and it must be known that the plant is not cultivated in the area.

Table 5. Codes for recording cultivated status (Data Field 5)

Code	Value	Explanation
C	Distribution Complete	Within the area covered by the record (which must be an area containing subsidiary areas e.g. E+M), all area records for the plant have been entered.
I	Distribution Incomplete	Within the area covered by the record, it is known that not all records have been entered.
U	Not known whether distribution complete	Within the area covered by the record, it is not known if all area records have been entered.

Table 6 Codes for recording Distribution Completeness Information (Data Field 6)

N.B. FOR INFORMATION ONLY

Code	Value	Explanation
C	Distribution Complete	The taxon is known to occur only within the territory; it is endemic to the territory.
I	Distribution Incomplete	The taxon is known not to be endemic to the territory.
U	Not known whether distribution complete	It is not known if the taxon is endemic to the territory.

Table 7 Codes for recording World Distribution Completeness

6.13. Illustrations

Works containing accurate illustrations or photographs of species or subspecies may be listed. Authors are asked to list especially those that occur in readily available publications. This field is designed to be used for species and subspecies entries, but where a well-illustrated account of an entire genus is available, it would be appropriate to list that work in the genus entry.

References should follow the format detailed above in Section 6.3.5 and 6.3.6. Both page and plate/fig. numbers should be given. This is important as illustrations might be given under the wrong name.

More than one illustration may be included for each taxon. For each, the type of illustration (colour photograph, black and white photograph, line drawing, painting) should be indicated.

6.14. Identification Key

A dichotomous key to taxa should be included for any rank within which two or more taxa are treated. Keys should follow the format below:

1. Perianth segments16—22mm, exceeding the stamens by 6—10mm………..……… **1. liliago**
- Perianth segments 10—14mm, exceeding the stamens by not more than 2mm…………..……2
2. Leaves 1.5—2(--5)mm wide; inflorescence a simple raceme; capsule ovoid-ellipsoid, subacute……………………………………………………………………..**2. baeticum**
- Leaves (1.5--)4—7m wide; inflorescence usually a panicle; capsule depressed globose, obtuse………………………………………………………………………….**3. ramosum**

The following principles should be observed in constructing keys:

Characters used in the key must be repeated in the descriptions.
Microscopic characters (requiring greater than x 20 magnification) should not be used .
Wherever possible, common or widespread taxa should key out first.
For dioecious species, keys should work for both male and female plants.

6.15. Observations

At the end of any taxon entry, a note may be included explaining or commenting upon any points of special interest; these notes should contain any information that will aid identification and distinction for closely related species, information on relationships and/or references to taxonomic, nomenclatural or distributional problems. Notes should be written in complete sentences.

For families, a statement about the number of genera should be included and similarly, for genera, the number of species (can be approximated) should be indicated. The parents of hybrid taxa should be given in the observations field.

Notes about other subspecific taxa recognized in other areas outside the Euro-Mediterranean may be included as they may be of interest to users of Euro+Med PlantBase.

A reference should be provided for any data source used. This should be given in the format described in Sections 6.3.5 and 6.3.6.

6.16. Bibliography

Additional published literature on taxa which provides significant additional information, and/or which was extensively used in writing the account should be cited. The format of references should follow Sections 6.3.5 and 6.3.6.

6.17. Authorship

The author of the account should be given, together with postal address, and whenever possible, e-mail address. The date of submission of the account should also be indicated.

7. AUXILIARY PUBLICATIONS

New taxa, combinations, etc. should be validated before their inclusion in Euro+Med PlantBase (publications *in press* are acceptable). It may often be useful to do the same with significant novelties of taxonomy or nomenclature or geographical distribution data. A new series will be established to allow authors to deal with such nomenclatural and distributional issues.

8. ABBREVIATIONS

Conventional abbrevations to be used in Euro+Med PlantBase are listed below. Geographical territory abbreviations are provided in Sections 11 & 12.

& al.	and others
Anon.	anonymous
aprox.	approximately
auct.	authors
basion.	basionym
c.	circa
C	Central
cf.	compare with
cm	centimetre(s)
comb.	combination
cv.	cultivar
cult.	cultivated
descr.	description
desc. in sched.	described on herbarium label
E	East
ed.	edition, editor
eds.	editors
e.g.	for example
exc.	except
excl.	excluding
f.	forma
fam.	family
fasc.	fascicle
fig(s)	figure(s)
gen.	genus
gr.	group
ic.	*icones*, illustration
incl.	including
in err.	in error
in sched.	on herbarium label
lam.	lamina
loc. cit.	*loco citato,* on the same page in the work cited above
m	metre(s)
mm	millimetre(s)
N	North
no.	number
nom. alt.	alternative name
nom. ambig.	nomen ambiguum
nom. cons.	nomen conservandum
nom. cons. prop.	nomen conservandum propositum
nom. illeg.	nomen illegitimum
nom. inval.	nomen invalidum
nom. nov.	nomen novum
nom. nud.	nomen nudum
nom. rejic.	nomen rejiciendum

nom. rejic. prop.	nomen rejiciendum propositum
nom. subst.	nomen substitutum
nov.	novus/new
n.v.	non vidi
orth. cons.	orthographica conservanda
p.	page
p. max. p	pro maxima parte
pers. com.	personal communication
pl.	plate
p.p.	pro parte
prep.	preparation
S	South
s.l.	sensu lato
s.n.	sine numero
s.s.	sensu stricto
sect.	section
ser.	series
sp., spp.	species
stat.	status
subfam.	subfamily
subgen.	subgenus
subsp., subspp.	subspecies
typ. excl.	typus exclusus
var.	variety
W	West
x	basic chromosome number
2n	somatic chromosome number
±	more or less
➢	more than
≥	more than or equal to
<	less than
≤	less than or equal to

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11. GEOGRAPHICAL STANDARD

Euro+Med PlantBase Codes and Geographical Units and the corresponding TDWG Geography Standard Level 4 codes and ISO Standard Two-Letter codes for each of the Euro+Med PlantBase Core Territories.

Like TDWG, Euro+Med is an international intitiative, open to people from all nations, and the geographical system presented here is intended solely for the purpose of clariy of communication. It should not be taken to imply recognition of any government, any political persuasion, or any political boundary. In disputed territories Euro+Med PlantBase follows a consistent policy of only accepting those national boundaries which are currently recognised by the United Nations.

E+M code	Unit	TDWG	ISO
EM	Euro+Med PlantBase Area	-	-
Ab	Azerbaijan. This comprises:		AZ
	Ab(A) Azerbaijan	TCS-AZ	AZ
	Ab(N) Nakhichevan	TCS-NA	AZ
AE	East Aegean Islands. This comprises:	EAI-OO	GR
	AE (G) = Greek East Aegean Islands (excluding Gökçeada)	-	-
	AE (T) = Turkish East Aegean Islands, i.e. Bozcaada	-	-
Ag	Algeria	ALG-OO	DZ
Al	Albania	ALB-OO	AL
Ar	Armenia.	TCS-AR	AM
Au	Austria with Liechtenstein. This has been subdivided as follows:		-
	Au(A) Austria	AUT-AU	AT
	Au(L) Liechtenstein	AUT-LI	LI
Az	Azores. This has been subdivided as follows:	AZO-OO	PT
	Az (C) Corvo		PT
	Az (F) Faial		PT
	Az (L) Flores		PT
	Az (G) Graciosa		PT
	Az (P) Pico		PT
	Az (S) Santa Maria		PT
	Az (J) São Jorge		PT
	Az (M) São Miguel		PT
	Az (T) Terceira		PT
Be	Belgium, with Luxembourg. This comprises:		-
	Be(B) Belgium	BGM-BE	BE
	Be(L) Luxembourg	BGM-LU	LU
Bl	Baleares. This has been subdivided as follows:	BAL-OO	ES
	Bl(I) Ibiza including Formentera		ES
	Bl(M) Mallorca		ES
	Bl(N) Menorca		ES
BH	Bosnia-Herzegovina	YUG-BH	BA
Br	Great Britain, including Orkneys, Shetland, Isle of Man; excluding Channel Is., Northern Ireland.	GRB-OO	UK
Bu	Bulgaria	BUL-OO	BG
By	Belarus	BLR-OO	BY
Ca	Canary Is. This has been subdivided as follows:	CNY-OO	ES
	Ca (F) Fuerteventura (including Lobos)		ES
	Ca (G) Gomera		ES
	Ca (C) Gran Canaria		ES
	Ca (H) Hierro		ES
	Ca (L) Lanzarote, including Graciosa and smaller islands		ES
	Ca (P) La Palma		ES
	Ca (T) Tenerife		ES
Co	Corse	COR-OO	FR
Cr	Kriti (*Creta*), with Karpathos, Kasos and Gavdhos	KRI-OO	GR
Cs	Czech Republic	CZE-CZ	CZ

Ct	Croatia	YUG-CR	HR
Cy	Cyprus	CYP-OO	CY
Da	Denmark (*Dania*), including Bornholm, excluding Faeroe Islands and Greenland	DEN-OO	DK
Eg	Egypt excluding Sinai	EGY-OO	EG
Es	Estonia	BLT-ES	EE
Fa	Faeroe Islands	FOR-OO	FO
Fe	Finland (*Fennia*), including Ahvenanmaa (Aaland Islands)	FIN-OO	FI
Ga	France (*Gallia*), with the Channel Is., Monaco; excluding Corse. This comprises the following:		-
	Ga(C) Channel Is.	FRA-CI	UK
	Ga(F) France	FRA-FR	FR
	Ga(M) Monaco	FRA-MO	MC
Ge	Germany	GER-OO	DE
Gg	Georgia		GE
	Gg(A) Abkhazia	TCS-AB	GE
	Gg(D) Adzaria	TCS-AD	GE
	Gg(G) Georgia	TCS-GR	GE
Gr	Greece, excluding the islands included under Kriti and the Greek East Aegean Islands, AE (G)	GRC-OO	GR
Hb	Ireland (*Hibernia*). This comprises the following:		-
	Hb(E) Ireland	IRE-IR	IE
	Hb(N) Northern Ireland	IRE-NI	UK
He	Switzerland (*Helvetia*)	SWI-OO	CH
Hs	Spain (*Hispania*), with Gibraltar and Andorra; excluding Baleares. This comprises the following:		-
	Hs(A) Andorra	SPA-AN	AD
	Hs(G) Gibraltar	SPA-GI	GI
	Hs(S) Spain	SPA-SP	ES
Ho	Netherlands (*Hollandia*)	NET-OO	NL
Hu	Hungary	HUN-OO	HU
Ir	Israel, including the Palestinian Authorities and the occupied Territories which are not distinguished.	PAL-IS	IL
Is	Iceland (*Islandia*)	ICE-OO	IS
It	Italy, including the arcipelago Toscano, San Marino, Vatican City; excluding Sardegna and Sicilia. This comprises the following:		-
	It(I) Italy	ITA-IT	IT
	It(S) San Marino	ITA-SM	SM
	It(V) Vatican City	ITA-VC	VA
Jo	Jordan	PAL-JO	JO
La	Latvia	BLT-LA	LV
Le	Lebanon	LBS-LB	LB
Li	Libya	LBY-OO	DL
Lt	Lithuania	BLT-LI	LT
Lu	Portugal (*Lusitania*)	POR-OO	PT
Ma	Morocco. This has been sub-divided as follows:		-
	Ma (M) Morocco. Excluding the former Spanish Sahara south of the Tarfaya province.	MOR-MO	MA
	Ma (E) Spanish North African Territories	MOR-SP	ES
	Ma (S) Western Sahara	WSA-OO	EH
Mk	The former Jugoslav Republic of Makedonija	YUG-MA	MK
Md	Madeira. This has been subdivided as follows:	MDR-OO	PT
	Md (D) Desertas		PT
	Md (M) Madeira		PT
	Md (P) Porto Santo		PT
Mo	Moldova	UKR-MO	MD
No	Norway excluding Svalbard (Sb)	NOR-OO	NO
Po	Poland	POL-OO	PL
Rf	The Russian Federation (*Rossia*). This has been sub-divided as follows:		RU

	Rf (C) Central European Russia (comprising the following oblasts and republics: Kostroma, Tver, Yaroslavl, Vladimir, Nizhniy Novgorod, Smolensk, Moscow, Ryazan, Mordovia, Chuvashia, Ulyanovsk, Kaluga, Tula, Lipetsk, Tambov, Penza, Bryansk, Orel or Orlov, Kursk, Voronezh, Belgorod)	RUC-OO	RU
	Rf (E) Eastern European Russia (comprising the following oblasts and republics: Vyatka, Perm, Udmurtia, Bashkortostan, Tatarstan, Samara, Orenburg)	RUE-OO	RU
	Rf (K) Kaliningrad Region	BLT-KA	RU
	Rf (CS) North Caucasus, including the following TDWG level 4 units: NCS-CH Chechnya; NCS-DA Dagestan; NCS-IN Ingushetia; NCS-KB Kabardino-Balkaria; NCS-KR Krasnodar & Adygean Republic; NCS-SO Alania; NCS-ST Stavropol; NCS-KC Karachav-Cherkessia.	NCS	RU
	Rf (N) Northern European Russia (comprising the following oblasts and republics: Arkhangelskaya, Karelia, Komi, Murmansk, Vologda)	RUN-OO	RU
	Rf (NW) Northwest European Russia (comprising the following oblasts and republics: Novgorod, Pskov, Leningrad (incl. City of St Petersburg)	RUW-OO	RU
	Rf (A) Novaya Zemlya and Franz-Joseph Land	WSB-OO (partim)	RU
	Rf (S) South European Russia (comprising Saratov, Volgograd, Astrakhan, Rostov, Kalmykiya)	RUS-OO	RU
Rm	Romania	ROM-OO	RO
Sa	Sardegna	SAR-OO	IT
Sb	Svalbard, comprising Spitsbergen, Björnöya (Bear Island) and Jan Mayen.	SVA-OO	SJ
Sg	Selvagens	SEL-OO	PT
Si (M)	Malta	SIC-MA	MT
Si (S)	Sicilia, Ustica, Egadi Islands, Pantelleria, Pelagie islands and Eolie Islands	SIC-SI	IT
Sk	Slovakia	CZE-SK	SK
Sn	Sinai	SIN-OO	EG
Su	Sweden (*Suecia*), including Öland and Gotland.	SWE-OO	SE
Sl	Slovenia	YUG-SL	SI
Sy	Syria	LBS-SY	SY
Tn	Tunisia	TUN-OO	TN
Tu	Turkey, excluding Turkish East Aegean Islands [AE (T)]. This has been subdivided as follows:		TR
	Tu (A) Asiatic Turkey (Anatolia), excluding Bozcaada	TUR-OO	TR
	Tu (E) Turkey-in-Europe, includes Gökçeada	TUE-OO	TR
Uk	Ukraine. This has been subdivided as follows:		UA
	Uk (K) Krym	KRY-OO	UA
	Uk (U) Ukraine	UKR-UK	UA
SM	Serbia & Montenegro. This comprises the following areas:		YU
	SM (M) Montenegro	YUG-MN	YU
	SM (S) Serbia including Kosovo and Vojvodina	YUG-SE YUG-KO	YU

12. Additional Geographical Territories

The 'Additional Territories' comprise geographical territories used in either *Flora Europaea* (and consequently in the initial Euro+Med database) or in *Med-Checklist*, which are, however, outdated or unsuitable. They will be used to record distributions in Euro+Med PlantBase only until such time as they are superseded by records indicating species distributions in the Core Territories with which they correspond in whole or in part.

Euro+Med PlantBase Codes and and the Bibliographic Source are given for each Additional Territory.

E+M Code	Unit	Source (*Flora Europaea/ Med-Checklist)*
Cz	Former Czechoslovakia; see Cs, Sl.	*FE*
IJ	Israel-Jordan; see Ir, Jo	*MC*
Ju	The former Jugoslavia; see SM, BH, Ct, Mk, Sl	*FE*
LS	Lebanon-Syria; see Le, Sy.	*MC*
Rs	Former USSR, comprising: Rs(B) Baltic Division Rs(C) Central Division Rs(E) South-eastern Division Rs(N) Northern Division Rs(W) Western Division See: By, Es, Kz, La, Lt, Mo, Rf [comprising Rf(A), Rf(C), Rf(CS), Rf(E), Rf(K), Rf(N), Rf(NW), Rf(S)], Uk(U)	*FE*
Si	Sicily with Malta; see Si (M) and Si (S)	*FE*

13. GENERAL ORGANISATION OF EURO+MED PLANTBASE

13.1. Steering Group

Professor Benito Valdés (Chairman; Sevilla, Spain)
Dr Stephen L. Jury (Secretary; Reading, U.K.)
Professor Dawud Al-Eisawi (Amman, Jordan/Bahrain)
Professor Frank A Bisby (Reading, U.K.)
Dr Vincent Boullet (Bailleul, France)
Professor Loutfy Boulos (Honorary Advisor; Cairo Egypt)
Professor Santiago Castroviejo (Madrid, Spain)
Professor Fritz Ehrendorfer (Honorary Advisor; Vienna, Austria)
Dr Dmitry Geltman (St Petersburg, Russian Federation)
Professor Werner Greuter (Honorary Advisor; Berlin, Germany)
Professor Vernon H. Heywood (Honorary Advisor; Reading, U.K.)
Professor Georgia Kamari (Patras, Greece)
Dr Karol Marhold (Bratislava, Slovakia)
Professor Franco Raimondo (Palermo, Italy)
Professor Mohamed Rejdali (Rabat, Morocco)
Mme Dominique Richard (Observer, European Topic Centre for Nature Conservation, Paris, France)
Professor Pertti Uotila (Helsinki, Finland)

13.2. Editorial Committee and Executive Committee of the *European Initiative for the Euro+Med PlantBase*

Professor Benito Valdés (Chairman; Sevilla, Spain)
Dr Stephen L. Jury (Secretary; Reading, U.K.)
Professor Frank A. Bisby (Reading, U.K.)
Professor Santiago Castroviejo (Madrid, Spain)
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Professor Vernon Heywood (Reading, U.K.)

13.3. Secretariat

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14. THE EUROPEAN INITIATIVE FOR THE EURO+MED PLANTBASE

The European Commission-funded *European Initiative for the Euro+Med PlantBase* provides financial backing for three years to cover a number of specific aspects of the Euro+Med PlantBase project. Funding commenced on September 1st, 2000. The work sponsored by the European Commission comprises 9 workpackages. The Workpackage Leader is indicated in parentheses.

Workpackage 1: scientific planning; international co-operation; development of system for information flow around the network; produce editorial guidelines and establish Editorial Committee. [Dr Stephen L. Jury; Reading, U.K.]

Workpackage 2: software development; upgrade of ESFEDS database and linking the software to an Internet Editor; providing a display version of the database available through the IOPI display system. [Dr Walter Berendsohn; Berlin, Germany]

Workpackage 3: prepare an initial consolidated working plant checklist of the Euro-Mediterranean by upgrading the ESFEDS database and co-ordinating specialist evaluation of the list. [Professor Benito Valdés; Sevilla, Spain]

Workpackage 4: taxonomic revision of selected groups and inclusion of the revisions in the main database. [Professor Santiago Castroviejo; Madrid, Spain]

Workpackage 5: prepare a European Plant Synonymic Checklist for publication by enhancing the European elements of the working checklist with revised data, expanded synonymy, other forms of data etc. [Professor Franco Raimondo; Palermo, Italy]

Workpackage 6: develop user-friendly outputs and linkages to other data sets for consumer needs; establish methodologies, develop links with other databases; co-ordinate the preparation of information summaries (or 'beads') [Professor Klaus Ammann; Bern, Switzerland]

Workpackage 7: Development of conservation bead [Professor Klaus Ammann; Bern, Switzerland]

Workpackage 8: Development of mapping bead [Professor Pertti Uotila; Helsinki, Finland]

Workpackage 9: Development of karyological bead [Professor Georgia Kamari; Patras, Greece]

Institutions funded under the European Initiative for the Euro+Med PlantBase

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- Real Jardín Botánico, CSIC, Madrid, Spain
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- Finnish Museum of Natural History, Botanical Museum, University of Helsinki, Finland
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