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An annotated checklist of the Italian vascular flora: first data

Abstract

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Between 1999 and 2002 an up-to-date check-list of the Italian Vascular Flora was achieved, following a convention funded by the Dipartimento di Biologia Vegetale, University 'La Sapienza' of Rome, and the Ministero dell'Ambiente e della Tutela del Territorio, Direzione Conservazione della Natura. The first, printed edition of this check-list (Conti & al. 2005) required a further update of data, which ended in 2004. Here we report the main national and regional data about the Italian vascular flora.

Introduction

At the end of 1999, as a result of an agreement of the Dipartimento di Biologia Vegetale of the University 'La Sapienza' of Rome with the Ministero dell'Ambiente e della Tutela del Territorio, Direzione Conservazione della Natura, an up-to-date checklist of the Italian Vascular Flora was started. The project ended in 2002. In order to draw up a first printed edition of the list, a further update of data, which ended in 2004, was necessary. The computerized database is at present lodged by the partners of the convention. For details of the frame and contents of the relational database see Abbate & al. (2001).

Briefly, for each record, the data fields reported: taxonomic and/or nomenclatural status, geographical distribution, endemism, alien status, IUCN category, international status.

Many regional and taxonomic advisers, as well as contributors, took part in the checklist of the Italian Vascular Flora and they are all listed at the end of this paper.

Taxonomic coverage and arrangement

In this checklist all the vascular plants occurring in Italy are reported, with regard to the following taxonomic ranks: genus, species group, species, nothotaxon (only the most common ones), subspecies. The 'species group' is an unofficial rank with the actual meaning

of macrospecies, concerning only a few complex genera (e.g. *Taraxacum* F. H. Wigg., *Sempervivum* L.), for which the regional data can be very inhomogeneous.

The list follows the alphabetic order of the genera respectively within *Pteridophyta*, *Gymnospermae* and *Angiospermae*, then of 'species groups' and species within the genera and, finally, of subspecies within the species.

The authors are quoted according to Brummitt & Powell (1982).

The list includes both native units and naturalized alien units, which are considered to be occurring in the 20 Italian administrative regions. The accidental alien units (ephemerals) and the cultivated ones were left out. In the check-list the word 'unit' is always to be referred to: 'species group', species, nothotaxon and subspecies.

The main sources for the list are:

- the floras that today are the most commonly used in Italy: Flora d'Italia (Pignatti 1982), Med-Checklist (Greuter & al. 1984, 1986, 1989), Flora Europaea (Tutin & al. 1968-1980, 1993),- some recent regional floras: Poldini (2001), Anzalone (1994, 1996), Bovio & al. (2000), Lucchese (1995), Conti (1998),

- the survey: Segnalazioni Floristiche Italiane (VV. AA. 1978-2004), edited by the journal *Informatore Botanico Italiano*,- all the floristic and taxonomic literature, so far published or currently in print.

Geographical coverage and explanatory notes

The 20 Italian administrative regions, with their present boundaries, are the reference geographical units (Fig. 1). The most important geographical novelties involved: the separation of Molise from Abruzzo and of Valle d'Aosta from Piemonte (in Flora d'Italia by Pignatti they were considered as one); the inclusion of Trieste in Friuli-Venezia Giulia, as in Poldini (2001); the exclusion of data of the territories that do not (or no longer) belong to Italy, such as Corse, Nice, partially Savoyard, Istria, Malta archipelago. Some data of borderlands between Piemonte and France will require further field investigations (Fig. 1).

Data analysis

Basing upon this survey, in Italy are present 196 families, 1267 genera, 6711 species, 7634 units (136 of which are *Pteridophyta*, 34 *Gymnospermae*, 7464 *Angiospermae*). On a national scale, the endemic units are 1021, while the alien ones are 782 (Tab. 1).

Though still today the standard of floristic knowledge varies a lot from region to region, the regions showing the maximum floristic richness are also those with the maximum environmental complexity as for orography, morphology, lithology and bioclimate. The units reported for each region can be viewed in Figure 2.



Fig. 1. The 20 Italian administrative regions.

Table 1. Main numbers of the vascular flora of Italy.

	Families	Genera	Species	Units (species + subspecies)		
				Total	Endemic	Alien
<i>Pteridophyta</i>	26	43	124	136	1	6
<i>Gymnospermae</i>	4	8	28	34	1	2
<i>Angiospermae dicotyledones</i>	127	910	5230	5984	882	598
<i>Angiospermae monocotyledones</i>	39	306	1329	1480	137	176
Total	196	1267	6711	7464	1021	782

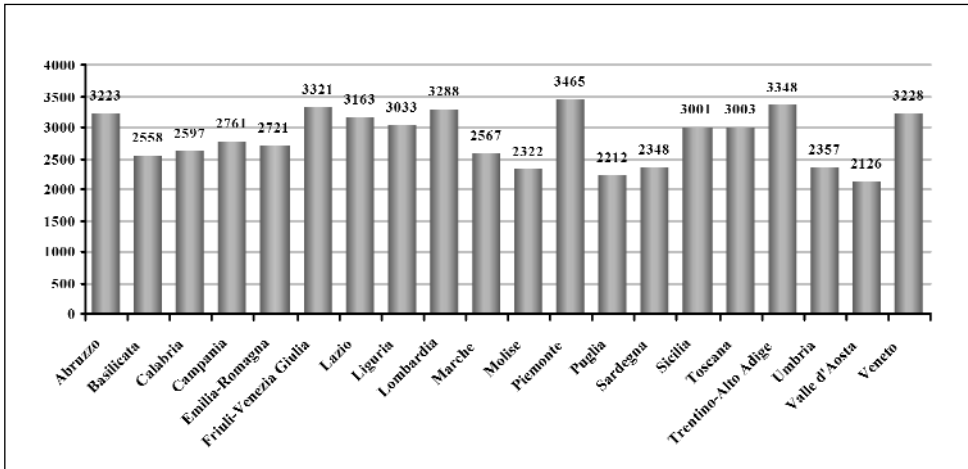


Fig. 2. Number of units (species and subspecies) occurring in each of the 20 Italian administrative regions.

Regional lists of exclusive, endemic, protected and alien units

We also compiled regional lists for some typologies of scientifically interesting units, and units useful for applicative purposes:

Exclusive units: native units occurring only in one administrative region (aliens not considered); the units in this list may have different geographic significance. This group is the distinctive mark of each region and the units here included are worth exploiting, and eventually red-listing and protecting, as suggested by version 3.1 of IUCN Categories and Criteria (IUCN 2001).

Endemic units: the endemic status is quoted only for the units endemic to the Italian territory and to the major Mediterranean islands (Corse and Malta) too; therefore the units endemic to the Alpine Chain and occurring also out of Italy are not highlighted.

Protected units: since in Italy the protection of flora is committed to each region, and only in few cases to the provinces (i.e. Piemonte, Trentino-Alto Adige), these lists, as well as useful tools, are the real subject upon which a future National Law for the Protection of Flora should be based. Some regions (i.e. Puglia, Sardegna, Sicilia) still lack such a law; at the same time other regions are protecting their whole native flora (e.g. Valle d'Aosta, Veneto, Trentino-Alto Adige) or, having a law, they still lack a specific list of units (e.g. Marche). **Alien units:** only naturalized alien units are considered, both at national and at regional level; the lists of alien units are strongly affected by the different level of floristic knowledge in the 20 Italian regions.

The number of units reported in these lists for each administrative region can be viewed in Table 2.

Table 2. Number of exclusive, endemic, protected and alien units (species and subspecies) for each administrative region.

Region	Units			
	Exclusive	Endemic	Protected	Alien
Abruzzo	29	177	34	230
Basilicata	6	159	31	159
Calabria	49	205	83	119
Campania	21	154	134	232
Emilia-Romagna	12	61	164	259
Friuli-Venezia Giulia	133	28	67	521
Lazio	14	164	72	317
Liguria	52	55	74	217
Lombardia	48	60	265	244
Marche	3	105	-	219
Molise	0	114	380	169
Piemonte	88	39	-	377
Puglia	39	97	-	146
Sardegna	277	254	-	199
Sicilia	344	321	-	290
Toscana	64	153	91	317
Trentino-Alto Adige	89	59	112	268
Umbria	0	94	235	193
Valle d'Aosta	21	6	56	105
Veneto	25	53	86	336

Regional advisers

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References

- Abbate, G., Alessandrini, A., Conti, F., La Posta, A., Ronchieri, I., Tartaglini, N. & Blasi, C. 2001: La Banca dati della Flora vascolare italiana. – *Inform. Bot. Ital.* **33(2)**: 417-420.
- Anzalone, B. 1994: Prodrómo della flora Romana (elenco preliminare delle piante vascolari spontanee del Lazio) (Aggiornamento). Parte 1. *Pteridophyta*, *Gymnospermae*, *Angiospermae* *Dicotyledones*. – *Ann. Bot. Roma* **52(Suppl. 11)**: 1-81.
- 1996: Prodrómo della flora Romana (elenco preliminare delle piante vascolari spontanee del Lazio) (Aggiornamento). Parte 2. *Angiospermae Monocotyledones*. – *Ann. Bot., Roma* **54 (Suppl. 11)**: 7-47.
- Bovio, M., Maffei, S., Pellissier, S. & Poggio, L. 2000: La Banca Dati Floristica della Valle d'Aosta. – *Rev. Valdôtaine Hist. Nat.* **54**: 11-36.
- Brummitt, R. K. & Powell, C. E. 1982: *Authors of Plant names*. – Kew.
- Conti, F., 1998: An annotated checklist of the flora of the Abruzzo. – *Bocconea* **10**: 1-276.
- , Abbate, G., Alessandrini, A. & Blasi, C. (eds) 2005: An annotated checklist of the Italian vascular flora **4** – Roma.
- Greuter, W., Burdet, M. H. & Long, G. (eds) 1984, 1986: *Med.-Checklist*, **1, 3**. – Genève.
- , — & — 1989: *Med.-Checklist*, **4**. – Genève.
- IUCN 2001: *IUCN Red List Categories and Criteria: Version 3.1*. Prepared by the IUCN Species Survival Commission. – Gland & Cambridge.
- Lucchese, F. 1995: Elenco preliminare della Flora spontanea del Molise. – *Ann. Bot. Roma. Studi sul territorio* **53(Suppl. 12)**: 1-386.
- Pignatti, S. 1982: *Flora d'Italia*, **1-3**. – Bologna.
- Poldini, L., Oriolo, G. & Vidali, M. 2001: Vascular flora of Friuli-Venezia Giulia. An annotated catalogue and synonymic index. – *Studia Geobotanica* **21**: 3-227.

- Tutin, T. G., Heywood, V. H., Burges, N. A., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (eds) 1968-1980: *Flora Europaea*, **2-5**. – Cambridge.
- , Burges, N. A., Chater, A. O., Edmondson, J. R., Heywood, V. H., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (eds.) 1993: *Flora Europaea*, **1**. – Cambridge.
- VV. AA. 1978-2004: *Segnalazioni Floristiche Italiane*: 1-1150. – *Inform. Bot. Ital.* **10(2)-36(1)**.

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