



111° Congresso della Società Botanica Italiana
III international Plant Science Conference

Roma 21-23 settembre 2016

BOOK OF ABSTRACT

KEYNOTE LECTURES, COMMUNICATIONS, POSTERS



3.4 = STUDY OF THE ALIEN FLORA OF THE URBAN AREA OF PALERMO (SICILY)

SEBASTIANO CICCARELLO^{1,2}, FILIPPO SCAFIDI^{1,2}, EMILIO DI GRISTINA², GIANNANTONIO DOMINA^{2,3}

¹Department STEBICEF, University of Palermo, Via Archirafi 38, 90123 Palermo, Italy, e-mail: sebastiano.ciccarello@unipa.it, filippo.scafidi@unipa.it; ² Botanical Garden and Herbarium Mediterraneum Panormitanum, University of Palermo, via Lincoln 2, 90133 Palermo, Italy, e-mail: emiliodi_gristina@hotmail.com; ³Department SAF, University of Palermo, Via Archirafi, 38, 90123 Palermo, Italy, e-mail: giannantonio.domina@unipa.it

Alien plants are an integral part of the Mediterranean agricultural and urban landscape.

Taking into account that man is an active voluntary or involuntary carrier of plant diaspores, cities and areas where human activity is predominant represent preferential targets for the study of new plant introductions.

In addition, some species as *Pennisetum setaceum* (Forssk.) Chiov. and *Opuntia ficus-indica* (L.) Mill., initially exclusive to high disturbed habitats, succeeded in penetrating in cliffs, degraded maquis and garrigues characterizing them. Thus the importance of studying these areas to predict future colonization of more natural habitats.

Starting from literature and integrating it with field observations we prepared a list of alien species occurring in the urban area of Palermo. This list includes a categorization of the non native species occurring in the city according to their origin, their behaviour and the habitat where these plants were recorded.

The starting points were the contributions about the flora of Sicily (1, 2, 3), the alien flora of Italy (4) and the flora living on trees of the city of Palermo (5). Literature sources were followed by intense field work from September 2013 to May 2016, that allowed to include new species that only recently showed their tendency to naturalization and to exclude species reported more than 100 years ago that have not be found anymore or taxa occurring in different parts of Sicily but not in the perimeter that defines the study area.

About the categories, relevant literature gives different categorization depending on whether the point of view adopted is anthropocentric, biological, ecological or biogeographic.

Here we adopted the categories suggested by Raimondo & al. (1) dividing the studied taxa in *Adventive* or *Cultivated* depending on whether the introduction was accidental or voluntary, and subdividing them further in *casual*, *naturalized* and *invasive* depending on whether their permanence and development into the new territory.

On the whole, 145 specific and infraspecific taxa have been recorded. Neophytes are 133: 43 adventive and 90 coming from cultivation; 42 are casual, 94 naturalized and 9 invasive. Archaeophytes (cfr. 6, 7) are 12: 6 casual, 5 naturalized and 1 invasive.

This study allowed to record recent changes in the alien flora of the city. These are mainly due to:

- the popularity of the plants that are grown for ornament (e.g. *Nephrolepis cordifolia* (L.) K. Presl widely cultivated until 30 years ago now its cultivation is almost entirely disappeared inside the city);
- the variation of construction techniques and materials with the rarefaction of roof tiles and rough walls in limestone in favour of more modern covers that do not allow the establishment of plants (comporting an evident reduction of *Crassulaceae* observable on the roofs);
- the arrival of new pollinators that allowed the production of fertile fruits e.g. in *Ficus microcarpa* L. and *F. watkinsiana* F. M. Bailey.

An example of the spreading of new taxa is *Sesamum indicum* L., reported as only cultivated plant without tendency to naturalize (8) in the last year, several individuals inside the city of Palermo have been recorded in ruderal habitat. This could have been due to the presence of an increasing number of not Italian of birth citizens who grow this plant for food purposes.

1) F. M. Raimondo, G. Domina, V. Spadaro, G. Aquila (2005) Quad. Bot. Amb. Appl., 15 (2004): 153-164.

2) F. M. Raimondo, G. Domina, V. Spadaro, G. Aquila (2005) Quad. Bot. Amb. Appl., 16 (2005): 219-220.

3) F. M. Raimondo, G. Domina, V. Spadaro (2010) Quad. Bot. Amb. Appl., 21 (2010): 189-252.

4) L. Celesti-Grapow & al. (2009) Pl. Biosyst., 143(2): 386-430.

5) A. Di Martino, C. Perrone (1962) Lav. Ist. Bot. Giardino Colon. Palermo, 18: 112-202.

6) P. A. Saccardo (1909) Cronologia della flora italiana. Padova.

7) F. Maniero (2000) Fitocronologia d'Italia. Firenze.

8) S. Pignatti (1982) Flora d'Italia. Bologna.