OLD PHENOLOGICAL DATA ON WILD PLANTS IN ITALY (XIX AND EARLY XX CENTURY)

DATI FENOLOGICI STORICI RELATIVI A PIANTE SPONTANEE IN ITALIA (SECOLO XIX E INIZIO XX)

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Abstract

An overview of the oldest phenological data collected in Italy, for scientific purposes, with scientific criteria and methods, is presented. Following the example of Linnaeus, in the 19th century various Italian botanists such as Ottaviano Targioni, Teodoro Caruel, Alessandro Serpieri and Giuseppe Bertoloni, went on to create phenological calendars, with notes on the local climate and agricultural work. Besides, the earliest phenological network on both cultivated and wild plants was organized by Almerico Da Schio and Domenico Lampertico at the end of XIX century (1876-1884) in 16 localities of the Veneto and Emilia regions. The European Phenological Network founded by Hoffman and Ihne (1882) was joined by botanists working in the Italian Alps, like Wilhelm Pfaff, who was responsible for a very long series (1886-1933) of phenological records at Bolzano.

Keywords: phenology, historical data, flowering, leafing

Riassunto

Viene presentato una sintesi dei primi rilievi fenologici effettuati in Italia con metodi scientifici.
Seguendo l'esempio di Linneo, uno dei principali precursori della fenologia scientifica, nel corso del 19° secolo, vari botanici italiani come Ottaviano Targioni, Teodoro Caruel, Alessandro Serpieri e Giuseppe Bertoloni, realizzarono calendari fenologici delle flora spontanea e delle colture, da utilizzare anche per applicazioni agricole.
In questo secolo venne anche organizzata la prima rete fenologica italiana, per opera di Almerico Da Schio e Domenico Lampertico, in 16 località del Veneto e dell'Emilia. Inoltre, negli ultimi decenni del secolo, alcuni botanici che lavoravano nelle Alpi italiane, come Wilhelm Pfaff a Bolzano, realizzarono serie pluriennali di rilievi fenologici partecipando alla rete europea coordinata da E. Ihne.

Parole chiave : fenologia, dati storici, fioritura, emissione delle foglie

Introduction

The birth of scientific Phytophenology (the science that deals with the seasonal rhythms of plants)is quite recent. In the 18th century the following important steps stand out:

a) the first phenoclimatic model based on the study of the relationships between temperature and phenophases occurrence (Réaumur, 1735)
b) a prototype of phenological survey network (1751-53), carried out in accordance with a precise protocol regarding the choice of sites and the surveying method (Linnaeus, 1753)
c) the first meteorological survey network (including phenological observations) covering large territories: the international network organised by the *Societas Meteorologica Palatina* (Mannheim 1781- 1792).

In the 19th century a widespread development of phenological studies raised mostly in Europe and USA. The phenological networks, which allowed the "phenological state" of the territory to be constantly monitored in space and time, were used for both research and applicative purposes.

National networks were set up: in Russia (from 1850), Britain (from 1857) and in the USA (in 33 states from 1851 -1859), covering plants, birds and insects.

Lambert Adolphe Jacques Quetelet (1796-1874), director of the royal observatory in Brussels, organised extensive meteorological observations and established a network of plant and animal phenological surveys (1840-1872) "*observations sur les phénomènes périodiques du règne animal et végétal*" with collaborators in several European countries, including Italy (the results are given in various memoirs published by the Brussels Academy).

Hermann Hoffmann, of Giessen University, published the first phenological map of central Europe (1881) and founded in 1882 an European Phenological Network that remained active until the Second World War. His student, Egon Ihne, co-ordinated the European network for 59 years and every year from 1883 to 1941 he published the data coming from about 100 stations (later reduced to 88). The instructions for phenological observers suggested daily surveys and observations on many species; a list of 53 species was provided (a second list of 43 species was proposed for southern localities, where the northern species proposed in the first list were less fre-