PALYCZ - Czech Pollen Database

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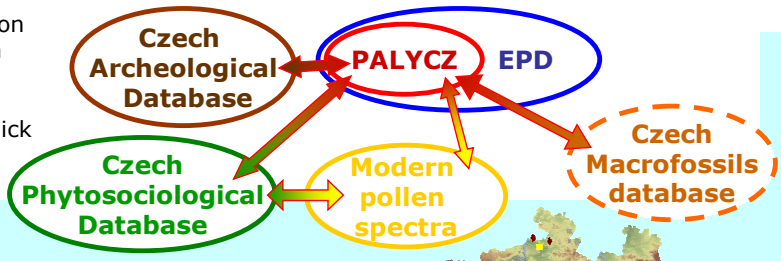
Aim: **collect, archive and analyze palynostratigraphical datasets from the Czech Republic and closely adjacent areas**

Database

is organized in PostgreSQL. Data are stored in related tables (designed similar to the EPD structure), which keep information about locality (sequence), pollen counts, sample chronologies, references, analysts etc. The structure is designed to allow quick analysis and queries of data at spatial- and timescale.

Why, if the European Pollen Database already exists?:

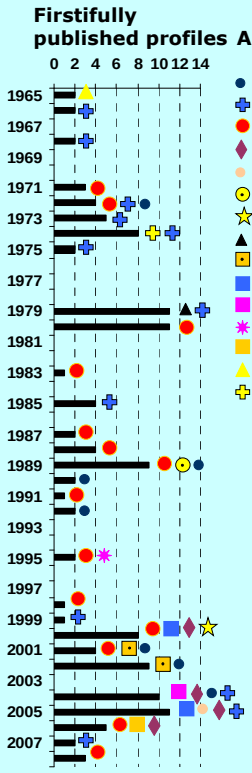
benefit from local knowledge, publications often in local language, better data accuracy, communication, linking with other databases



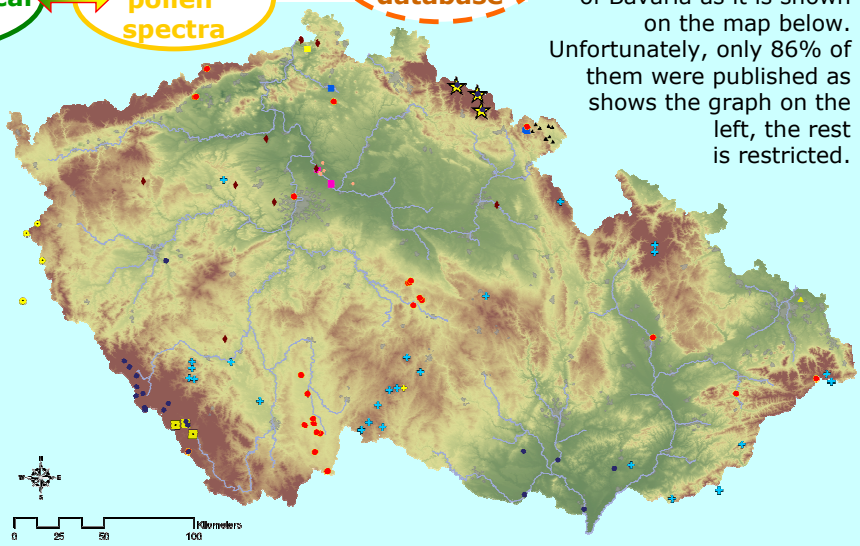
Profiles

PALYCZ has 153 pollen sequences in the Czech Republic, Slovakia and border zone of Bavaria as it is shown on the map below. Unfortunately, only 86% of them were published as shows the graph on the left, the rest is restricted.

Data contribution

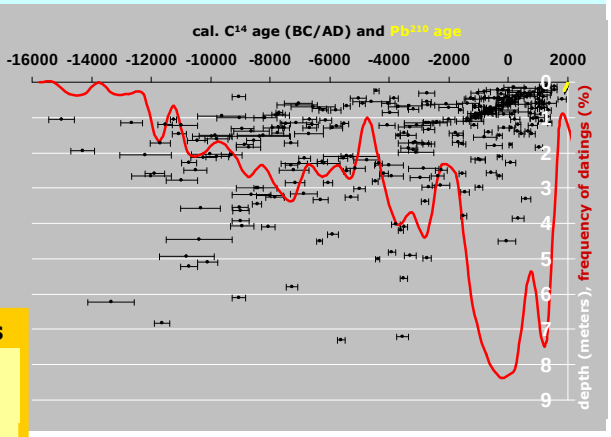


Author name	samples counted	profiles counted
H. Svobodová-Svitavská	1353	34
E. Rybníčková	1328	36
V. Jankovská	1205	36
P. Pokorný	599	11
L. Petr	248	5
M. Knipping	237	4
A.O.M. Speranza	217	3
M. Peichlová	184	10
M. Reille	179	3
P. Kuneš	101	3
E. Břízová	88	3
A. Wacnik	67	1
V. Abraham	53	2
V. Kneblová-Vodičková	37	2
A. Konětopský	31	1



Time

PALYCZ has 292 radiocarbon and 6 ^{210}Pb dates in 76 profiles. However, 27 sequences have 1 or 2 dates only. Radiocarbon dates were therefore interpolated linearly between the midpoints as default option to depth-age chronologies application in R software, written by Maarten Blaauw. Their calibration ranges (sd 95%) along depths are shown in graph at right.



Species

PALYCZ maintains original taxa from each pollenanalyst. When some new data is imported into the database, the application links its taxa with two alternative nomenclatures (ALPADABA and Beug (2004)). Database allows quick comparision of species frequency in samples, profiles and their total sum in the whole database.

Yellow box of top 30 frequent pollen types

they occurred in:

>20 % of all samples AND

>78 % of all profiles

Black box of top 10 pollen productors

- Pinus
- Alnus
- Picea abies
- Betula
- Cyperaceae
- Gramineae
- Fagus
- Abies alba
- Corylus avellana
- Quercus

average of the whole sum

> >

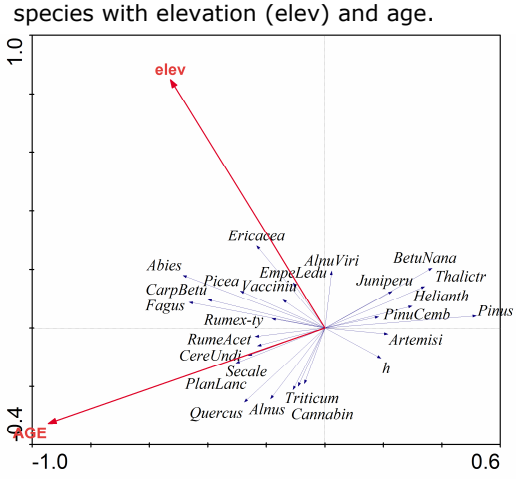
180 times (!)

- Artemisia
- Calluna vulgaris
- Carpinus betulus
- Comp. subfam. Asteroideae
- Comp. subfam. Cichorioideae
- Cruciferae
- Cyperaceae
- Filipendula
- Fraxinus excelsior
- Chenopodiaceae
- Plantago lanceolata
- Plantago maior-type
- Rosaceae
- Rubiaceae
- Salix
- Secale cereale
- Thalictrum
- Tilia
- Ulmus
- Umbelliferae
- Urtica

rest of pollen types

Example: Multivariate analysis

3039 samples with depth-age chronologies (51%) were analysed with Redundancy Analysis on a correlation matrix. Ordination graph (below) shows correlations of selected species with elevation (elev) and age.



Future development

The final form of PALYCZ will work through a web application (uploading for contribution, viewing and selection of data for users), where authors may insert their investigated sites. These features will serve for scientific outputs – isopollen maps, multivariate statistics. For fresh information check our website **http://botany.natur.cuni.cz/palycz/**

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