Preservation of Old and Regional Varieties in Silesia

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Although the preservation of old and regional varieties in other areas of the Czech Republic, for example, the White Carpathians, West and North Bohemia, or elsewhere has been at the forefront of the interests of nature conservationists, growers, gardeners and other enthusiasts for more than 2 decades, and has already achieved many outstanding results, in the past it has only marginally affected the territory of Bohemian Silesia. This concerns the Silesian part of the Poodří where, thanks to the work of the basic organisation of the ČSOP, the varieties found were concentrated in the orchard in Bartošovice, and the part of the Silesian Beskydy, where mapping and subsequent preservation of varieties was carried out in the last decade. Although from a fruit growing viewpoint, Silesia when compared to the previously mentioned White Carpathians, East Bohemia or Central Bohemian Uplands, ranks among less significant and more marginal areas, even here, from a pomological viewpoint, it is, or was, worthy of attention as indicated by the current findings or historical records which we will look at later on in this paper. We can thank this partially to the local diverse landscape, which is hemmed in by mountains on the western and eastern side, the local uplands or fertile lowlands of the central-northern part and around the significant watercourses of the Opava and Odra rivers, and last but not least, to the cultural diversity and various factors which have played a major role in the development of business, utilisation of fruits, and the exchange of varieties, etc. A clear impact, especially in the border area, came from the neighbourhood with Poland and Germany (prior to this with Prussia), which has also manifested itself in the composition of the grown varieties. Major history has also had a negative impact through events of the war in April 1945, during which, besides residential and farming buildings, many plantations were destroyed, and due to displacement, where the departure of the original Sudetenland population also led to the loss of long-term experience of farming in local conditions and knowledge of varieties, including suitable use. This fact is striking especially in comparison to the results of mapping, for example, in the Bruntál, Rýmařov, Opava and Hlučín regions, which have remained almost untouched by the displacement.

Our Objectives and Mission

Firstly, preservation of old and regional varieties is important to pomologists, breeders, fruit growers and small-scale growers for preserving unique and unmistakable varieties with certain properties of their fruit (size, taste, colour, consistency of the pulp, ripening time, means of use, etc.) and tree (vigour, crown shape, flowering time, etc.), with resistance to frost and diseases. These properties can also be used to breed new varieties with the particular aim of improving vigour, taste and resistance to frost and scab, etc.

In our work, we have also made an effort to place emphasis on the no less important old and regional varieties, underlining their important role and representation in regional elements, self-subsistence, folk culture, nutrition, and traditional methods of crop processing, and as a component of history, material culture and traditions. Last but not least, it goes hand-in-hand with the preservation of diversity in order to increase awareness of traditional fruit growing and the development of improvements in fruit growing education at all levels, and the preservation of standard fruit trees in the landscape in all grown forms from solitary trees and gardens to orchards and avenues.

The actual preservation of old and regional varieties can be approached in different ways. We can thus focus on preservation of all varieties which we find in a given time period and territory – make a list of varieties or plantations created from them, and then present the spatio-temporal condition.

However, since we are currently addressing the preservation of varieties from a much broader perspective, in which we are using not only our field knowledge, but also information from literature, various documents, lists of varieties, and knowledge of old pomologists and growers, due to the

modernisation that the Silesian countryside is undergoing (including fruit plantations of all types), we have already lost a large portion of varietal diversity. It must be noted that in the second case described, we are also relying on limited pomological knowledge where we cannot pomologically identify all the samples found with certainty, and though historical records of the presence of varieties may help to identify, as well as to search for or create varieties for planting based on earlier grown varieties, today, it is necessary to enquire in other areas.

Step-by-Step Mapping

Mapping, just like pomological identification and the entire work on preservation of a gene pool, is long-term or perhaps better said, never-ending work. The individual activities and their stages do not overlap, and the resultant remarks are subsequently often composed like a mosaic. During mapping in parts of Silesia, we applied the following methods:

- **historical documents, chronicles and topographical literature about the region** – in these, we found evidence of a fruit-growing tradition, processing of fruit in the past and traditional recipes, but also mentions of varieties, proof of folk pomology, etc.
- **old photographs, aerial photographs and maps** – these helped us to search for places in the landscape, to compare the condition of the landscape in different periods and to assess economic management in the landscape.
- **interviews with witnesses and local participants** – interviews with growers and gardeners helped to reveal the name of many a found variety, to ascertain characteristics and experience of growing these, or to direct us to interesting fruit plantations. We also obtained significant information in the search for old and regional varieties from historians, chroniclers or witnesses, for example, information on historical plantations, fruit processing methods, and folk names of varieties. Thanks to these, we have also successfully identified several varieties.
- **field research** – this was done on the basis of selected sites, usually in several stages:
    1. during June and July – cherry trees
    2. late July and early August – summer pear and apple trees
    3. late August and September – autumn apple trees, pear trees and plum trees
    4. early October – autumn and winter apple and pear trees

The progress of field research is described in the methodology (see below). It has several parts:

1. familiarisation with the locality and observation
2. measurement of GPS co-ordinates
3. photo documentation of a landscape feature, tree, and its parts and fruits
4. sampling and recording
5. tasting of samples
6. pomological identification (additional pomological identification follows the field survey and consultations with external pomologists)
7. description of the locality and tree, or fruits (if it is an unidentified variety) on the mapping card

We performed the main part of the pomological identification after mapping the terrain, with the aid of pomological literature, photographs from previous mapping and degustation. Thanks to exhibitions, seminars and consultations with pomologists, which are organised several times every year by the ČSOP, and also thanks to several international events (Europom), we successfully identified several varieties which we had found but failed to identify, or to correct previously incorrect names.

Materials for Mapping

Materials for mapping, identifying varieties and the subsequent preparation of plantations, which should present the wealth of variety in our region, were found in written materials – in contemporary literature, chronicles or archive records.

A big discovery with several highly surprising varieties was the discovery of a list of varieties purchased and grown on the Lichnovsky Estates in Hradec nad Moravicí and Chuchelná at the beginning of the 20th century. Apart from commonly grown and widespread varieties, the list shows several surprises in the form of varieties which were not found in the area during mapping or mentioned in lists from exhibitions or other lists (the known Czech names are shown in brackets).

Apples: 'Grossherzog von Baden' ('Velkovévoda bádenský'), 'Calville weisser Winter' ('Kalvil bílý zimní'), 'Üelzener' (synonym 'Üelzener Kalvil', 'Apfel von Uelzen'), 'Charlamowsky' ('Borovinka', 'Charlamowski'), 'Gravensteiner' ('Grávštýnské'), 'Kaiser Alexander' ('Car Alexandr'), 'Parmaine Winter goldene' ('Parména zlatá zimní'), 'Ananasreinette' ('Ananasová reneta'), 'Canada' ('Kanadská reneta'), 'Von Bercks' (the Czech name is unknown), 'Von Zuccalmaglio' ('Zuccalmagliova reneta'), 'Schönes von Boskoop' ('Boskoopské'), 'Pfirsichroter Sommerapfel' ('Hedvábné červené', 'Broskvové letní'); pear trees: 'Dechantsbirne Juli' ('Děkanka červencová'), 'Vereins-birne' ('Děkanka Robertova', 'Spolková'), 'Gute Luise von Avranches' ('Avranšská'), 'Idaho' (a rarity, only a single record of the cultivation of this variety in Silesia and apparently also elsewhere exists), 'Josephine von Mecheln' ('Mechelenská'), 'Pastorenbirne' ('Pastornice'), 'Roosevelt' ('President Roosevelt'), 'Williams Christbirne' ('Williamsova'); apricots: 'Grosse frühe Pfirsichaprikose von Nangin', 'Triumpf von Trier'; peaches: 'Pfirsiche Alexander frühe', 'Clara Meyer', 'Königin Olga', 'Waterloo'; cherries: 'Bopparden' ('Boppardská raná'), 'Bertes Michel', 'Grosse schwarze Knorpel' ('Velká černá chrupka'), 'Gubener Schwarze'; sour cherries: 'Amarelle Königliche' ('Amarelka královská'), 'Grosse lange Lothkirsche', 'Minister von Podbielski' ('Ministr Podbielski').

Chapters from a book by František Myslivec entitled *Starý způsob hospodářství an Opavsku (Old Farming Methods in the Opava Region,* 1933) are very valuable documents of the growing of varieties and fruit growing tradition, as well as the tradition of processing and using fruits, which, to a large extent, is already forgotten today. Here, Myslivec describes the roasting of plums and dehydration of fruit in detail, including a description of fruit drying devices. The names and descriptions of varieties grown in the Opava region in the 19th century are especially very valuable for our work:

- Apples:
  - The following apples had uniform names throughout the region: *Panenská, Kočí hlavy, Kožuchy, Míšenská, Sladká, Sklenky, Štěrkotiny and Vinná*
  - The following apples appeared under different names: *Raná, Hanuvky* (in places known as *Svatojánské* and elsewhere *Sláďata*), *Hrabovské, Písánky, Papírky, Jadrničky* (in some places termed *Fajné špizeple* and elsewhere *Valduvky, Ovčí nosy* or *Ovčí hubičky*), *Kuželky* (sometimes also known as *Špizeple*), *Červená, Hedvábná, Šípulky and Vindlíky*
  - Varieties with local names that only grow in some municipalities: *Jadrnáče, Kvardlíky, Kyselá, Michalská, Nebeská, Pleskanky, Šimoradská, Tvarůžky, Tyčky, and Zimní* (also *Ziminky*)
- Pears:
  - The following pears had uniform names throughout the region: *Margetinky* (*Margetky, Rané, Svatojánské*), *Jakubinky* (*Kulatinky*), *Šidelky*, *Ovesninky* (*Ovsinky, Vavřinky, Dominky*), *Bartolomějky, Cibulinky* (*Fikuvky*), *Muškatelky, Meduvky* (*Cukerinky*), *Lemonky* (Citronky), *Sklenky* (*Sklenárky, Džbánky*), *Okruhlinky, Václavinky, Báby* (*Babůvky, Tvarůžky*), *Potáče, Dule, Zimuvky* (*Oziminky*),
  - Varieties with local names that grow only in some municipalities: *Rybuvky, Kleštinky, Kořeňuvky, Křemeňuvky* (also *Kamýčky, Kaménk y*), and *Krvavinky* (elsewhere also known as *Červenky*)
- Damascene/Prunus:
  - *Švestky, Psirky* (*Psinky*), *Hlušice, Medunky, Kulovačky* (generally termed *Prcalky*), *Kobylinky* (*Kobylinky*), *Blony* (*Blumy, Durancie*), *Uherky, and Špendlíky*

Some of the mentioned varieties were still being grown in the mid-20th century, which is proven by some records and interviews. Myslivec's publication helped significantly in the identification of regional varieties from the Opava and Hlučín regions – for example, 'Ovčí nosy', 'Kočí hlavy', 'Vinné', 'Jakubinka', 'Margetinka', 'Cukrůvka', 'Okruhlinka', and 'Ovesninka.

The discovery of a manuscript entitled *Silesian Fruit (Slezské ovoce)* in the estate of Josef Vaněk, author of Folk Pomology (Lidové pomologie - 8 volumes were published) was a benefit during the search for Silesian regional varieties. In the unpublished work, the author mentions and specifies detailed pomological descriptions of 181 apple varieties that originated from Silesia.
A no less important document of the growing of varieties may be a record of the assortment of a fruit nursery. A catalogue of a fruit nursery at the manor in Fulnek from 1856 bears witness to the variegated spectrum of fruit varieties grown in mid-19th century. The selection of offered varieties of major fruit species is admirable: 242 apple tree varieties, 178 pear tree varieties, 72 cherry tree varieties, 47 sour-cherry tree varieties and dozens of other fruit varieties. Although this nursery was geographically based in Moravia, not far from the boundary with Silesia, the brisk export of saplings has been corroborated and, therefore, the presence of the trees in the Silesian villages and the towns to which the saplings were delivered according to the documented orders has also been proven.
References in literature and chronicles related to natural events, for example, the harsh winter of 1929 when many trees were frozen, are also worth mentioning. On this occasion, authors stated the varieties which were afflicted by this event, or conversely, those that survived the bitter frost without any major problems. This finding is also highly valuable for mappers and during planting in relation to the sphere of interest.
Recent history in the used sources presents lists of varieties from exhibitions, which were created by the organisers – members of the basic organisation of the Czech Gardening Association on the basis of pomological identification from regional pomologists. In the case of the Opava and Hlučín regions, this concerned the pomologist Zika, who, for several decades, identified exhibited varieties and was also party to the compilation of lists of varieties recommended for planting in the avenues and gardens in the mid-1950s.
Texts or lists of varieties that originate from the border areas of modern day Poland, earlier Germany and prior to that Prussia, to which the Czech frontier was connected either in terms of trade, nationality and language (Sudetenland) or administratively (the Hlučín Region in the periods from 1742 to 1920, 1923, or 1938 to 1945) may also be of help. In this regard, it is necessary to mention the Royal Pomology Institute of Proskau, Germany, with its rich collections and campaigns in support of fruit growing in the region, where the mentioned Hlučín region fell under the Ratiboř Area.

Mapping

A great benefit and motivation for us were the results of the many years of activity in the White Carpathians and practical experience of the local participants. Thanks to several smaller and larger projects, in the period from 2010 to 2016, we successfully performed our activities in the territory of the former districts of Opava, Bruntál and Jeseník. In the case of the first two named, to a large extent, activities concerned detailed mapping, which was done repeatedly.

- the selection of a mapping area/locality and performance of the necessary preparations
    - materials for mapping, GPS
    - other information inputs (interviews, study of historical maps, documents, etc.)
- mapping in the terrain and recording of data on cards, point surveying, procurement of photo documentation, etc.;
- input of data into the database on the website

In the first years of mapping (2010-2014), our mapping method was not uniform in character, and for the purpose of different requirements we tried several mapping and recording methods – database and text description of the samples found. Over the last 5 years, we have been using the method of

landscape mapping and marking of fruit trees, and recording these in the database and geographical information system, which was prepared for the ČSOP by Martin Lípa of the Meluzína Ecological Centre – Regional Centre of the Brontosaurus Association. In compliance with our goals, the aims of the methodology are as follows:

1. Search for varieties for preservation in gene pool areas
2. Search for trees in good condition for production of quality fruit
3. Search for trees, avenues and orchards as biotopes of interesting preservation species
4. Systematic mapping of the charted territory

Priority varieties or the local assortment, its protection at the site and subsequent transfer to gene pool areas are at the core of interest. In the case of the specialised and acceptable assortments, this concerns recording trees from which grafts have been obtained for gene pool areas in the past, and the creation of a database of trees for the collection of pomological samples for exhibitions and degustations, for grafting, and, last but not least, for obtaining documentation.
To commence mapping in compliance with the mentioned methodology, we require completion of training and the allocation of a mapping district, which is a code to which the serial number of a tree is added during registration in the database.

Field Work

The main activity of the mapper understandably takes place in the field, where the following tasks are performed:

1. Tree survey – during the tree survey, a unique code is allocated – species, mapping district, tree serial number in the district; J = apple, H = pear, T = cherry, V = sour cherry,
2. Marking of a tree – numbering according to the numerical series of the species in the given district is done using colours; it is also possible to use metallic labels or other methods
3. Recording of the characteristics of the tree – measurement of the stem circumference at a height of about 120-150 cm; evaluation of the viability of the tree (damage, vitality, affliction, etc.), potential risk of felling; notes to facilitate identification of the tree on site (habitus, polykormon, large cavity)
4. Pomological sampling and description – 6-11 fruits of typical shape, size and colour from one tree, wrapping in a paper bag and marking the sample with a code

Processing of Field Data

1. Export of data from a GPS device – creation of a file for the submission of results
2. Entry of data into a spreadsheet file – each mapped fruit species is entered in a separate file:
   - Basic identification of the tree – species
   - Variety
   - Tree description – stem circumference approx. 120-150 cm; tree condition; hazardous elements in the vicinity of the tree; main reason for introduction to the database; photo documentation of the tree
   - Fruit description – name of the variety, which is suggested by the mapper; reason for entry into the database; photo documentation of the fruits
   - Identification of the mapper and project
   - Statements of pomologists
   - Notes
3. Photo documentation of the fruits

The results of mapping of old and regional varieties in written records document the presence of several hundreds of old and regional varieties in Silesia. Subsequent lists contain the recorded species found in the regions of Opava, Hlučín, Bruntál, Krnov, Jesenik in the Beskyds and Těšín during mapping in the period from 2010 to 2016, the varieties recorded at exhibitions in the Opava and Hlučín regions (identified by the pomologist Zika) and varieties grown in the Těšín region, recorded by the fruit-grower Kajfoš.

Some of the regional varieties once grew across the entire Hlučín region, which is supported by the memories of witnesses from several villages, others were only present in a few localities in a single municipality and exhaustively also fulfilled the function of local varieties. Sometimes, their grafts also travelled beyond the boundary of the municipality. Among the spreaders of fruit growing and successful grafters, just like in other areas, were mainly pastors, teachers, mayors, and also modern settlers and farmers.
These lists, which also show unidentified varieties under their working names, are a basis for the next step in the preservation of old and regional varieties.

Apple trees – old varieties: ‘Aderslebenský kalvil‘, ‘Albrechtovo‘, ‘Alžbětino‘, ‘Ananasová reneta‘, ‘Astrachán bílý‘, ‘Astrachán červený‘, ‘Aurora‘, ‘Banánové zimní‘, ‘Bancroft‘, ‘Batul‘, ‘Baumannova reneta‘, ‘Berlepschova reneta‘, ‘Bernské růžové‘, ‘Bismarkovo‘, ‘Bisterfeldská reneta ‘, ‘Black Ben‘, ‘Bláhovo libovické‘, ‘Bláhovo oranžové‘, ‘Bláhův poklad‘, ‘Blenheimská reneta‘,‘Boikovo‘, ‘Boikovo obrovské‘, ‘Boschovo‘, ‘Boskoopské‘, ‘Boskoopské červené‘, ‘Breuhahnovo‘, ‘Car Alexandr‘, ‘Citrónové zimní‘, ‘Cornwalské hřebíčkové‘, ‘Coulonova reneta‘, ‘Coxova reneta‘, ‘Croncelské‘, ‘Červené tvrdé‘, ‘Červený hranáč‘, ‘Český hranáč‘, ‘Čistecké lahůdkové‘, ‘Deanovo‘, ‘Delicious červený‘, ‘Delicious zlatý‘, ‘Eduard VII.‘, ‘Eiserovo‘, ‘Ellisonova reneta‘, ‘Ervin Baur‘, ‘Evino‘, ‘Fiesserovo‘, ‘Francouzská reneta‘, ‘Gascoigneho šarlatové‘, ‘Gdánský hranáč‘, ‘Gloria mundi‘, ‘Grahamovo‘, ‘Grávštýnské‘, ‘Gustavovo trvanlivé‘, ‘Hagloe crab‘, ‘Hájkova muškátová reneta‘, ‘Hammersteinovo‘, ‘Harbertova reneta‘, ‘Hedvábné červené‘, ‘Herrenhutské‘, ‘Heusgenova zlatá reneta‘, ‘Hladíkovo přeúrodné‘, ‘Honťanské‘, ‘Hrabůvka skalická‘, ‘Hvězdnatá reneta‘, ‘Charlamowski‘, ‘Cherry Cox‘, ‘Jadernička moravská‘, ‘James Grieve‘, ‘Jeptiška‘, ‘Jonathan‘, ‘Kalvil bílý zimní‘, ‘Kalvil červený podzimní‘, ‘Kanadská reneta‘, ‘Kardinál žíhaný‘, ‘Kasselská reneta‘, ‘Knížecí zelené‘, ‘Kosztela‘, ‘Košíkové‘, ‘Kožená reneta podzimní‘, ‘Kožená reneta zimní‘, ‘Královnino‘, ‘Krásné z Gentu‘, ‘Krasokvět žlutý‘, ‘Landsberská reneta‘, ‘Lašské‘, ‘Laxtons Superb‘, ‘Lebelovo‘, ‘Libinské‘, ‘Lohák‘, ‘Londýnské‘, ‘Lord Derby‘, ‘Lord Lambourne’, ‘Lutyšský libernáč‘, ‘Major‘, ‘Malinové holovouské‘, ‘Malinové hornokrajské‘, ‘Malinové Vrchlického‘, ‘Matčino‘, ‘Mc Intosh‘, ‘Míšeňské‘, ‘Mohringenské‘, ‘Multhauptova reneta‘, ‘Muškátová reneta‘, ‘Muškátové‘, ‘Nathusiovo holubí‘, ‘Nordhausenské‘, ‘Ochranovské‘, ‘Oldenburgovo‘, ‘Ontario‘, ‘Otcovo‘, ‘Panenské české‘, ‘Parkerovo‘, ‘Parména letní‘, ‘Parména šarlatová‘, ‘Parména zlatá zimní‘, ‘Pasecké vinné‘, ‘Pašíkovo‘, ‘Pienkná z Rept‘, ‘Pottovo‘, ‘Průsvitné letní‘, ‘Red Rome Beauty‘, ‘Red Spur‘, ‘Rederova reneta‘, ‘Ribstonské‘, ‘Richardovo žluté‘, ‘Rozmarýnové‘, ‘Řehtáč soudkovitý‘, ‘Schmidtbergerovo‘, ‘Signe Tillisch‘, ‘Sikulské‘, ‘Slezský špičák‘, ‘Smiřické vzácné‘, ‘Solivarské ušlechtilé‘, ‘Starking‘, ‘Starkinson‘,
‘Strýmka‘, ‘Studničné‘, ‘Sudetská reneta‘, ‘Šampaňská reneta‘, ‘Švýcarské oranžové‘, ‘Trevírské červené‘, ‘Ušlechtilé žluté‘, ‘Velkovévoda badenský‘, ‘Viktorie raná‘, ‘Vilémovo‘, ‘Virginské růžové‘
‘Wagenerovo‘, ‘Watervlietské mramorované‘, ‘Wealthy‘, ‘Wessenerovo‘, ‘Zázvorové‘,‘Zlatá reneta‘
‘Zuccalmagliova reneta‘, ‘Zvonkové‘

Apple trees – regional varieties: ‘Kočí pala‘, ‘Kubík‘, ‘Kuželek‘, ‘Mizaura‘, ‘Ovčí nosy‘ (‘Šafnaza‘), ‘Panenka‘, ‘Vinné‘, ‘Vínovka‘, ‘Žimové‘

Apple trees – unidentified varieties (working names): *Bílé sládě z Meziny, Červené sládě z Meziny, Fialové z Rudy, Fialové z Rudy, Letní jablko ze Slezské Harty, Mošťák ze Slezské Harty, Neurčeno ze Sudic, Prastará jabloň z Dobřečova, Sládě z Hati, Sládě z Markvartovic, Sládě z Norberčan, Štrůdlák z Bolatic, Zárostopka z Bílčic, Zárostopka z Jiříkova*, etc.

Pear trees – old varieties: ‘Amalinská máslovka‘, ‘Ananaska česká‘, ‘Avranšská‘, ‘Boscova lahvice‘, ‘Clappova máslovka‘, ‘Červencová‘, ‘Děkanka Robertova‘, ‘Děkanka zimní‘, ‘Dielova máslovka‘, ‘Drouardova‘, ‘Dvorní máslovka‘, ‘Esperenova máslovka‘, ‘Fulvie', ‘Generál Le Clerc', ‘Grosdemange‘, ‘Gyotova‘, ‘Hájenka‘, ‘Hardyho máslovka‘, ‘Charneuská‘, ‘Jakubka česká‘, ‘Jeanne D’ Arc‘, ‘Kolmarská zlatá‘, ‘Konference‘, ‘Kongresovka‘, ‘Kozačka tuttgartská‘, ‘Krvavka veliká‘, ‘Křivice‘, ‘Le Brunova‘,

‘Lepinova‘, ‘Lucasova‘, ‘Madame Verté‘, ‘Magdalenka‘, ‘Marrilatova', ‘Mechelenská‘, ‘Merodova máslovka‘, ‘Ministr doktor Lucius‘, ‘Mollebusch‘, ‘Nagevicova‘, ‘Neliska zimní‘, ‘Německá národní bergamotka‘, ‘Oliver de Serres‘, ‘Pařížanka‘, ‘Pastornice‘, ‘Pchavka‘, ‘Pitmastonská‘, ‘President Mas‘, ‘Pstružka‘, ‘Rooseveltova‘, ‘Salisburyho‘, ‘Sixova máslovka‘, ‘Solanka‘, ‘Sterkmanova‘, ‘Šedá letní‘ (‘Špinka‘), ‘Šedá zimní‘, ‘Thiriotova‘, ‘Tongréská‘, ‘Vévodkyně Eliška‘, ‘Viennská‘, ‘Williamsova čáslavka‘, ‘Windsorská‘, ‘Würtenberská‘

Pear trees – regional varieties: ‘Anička‘, ‘Cibule‘, ‘Cukrůvka‘, ‘Jakubinka‘ (I. a II. typ), ‘Krvavka ze Lhoty‘, ‘Margetinka‘, ‘Meduňka‘, ‘Okruhlinka‘, ‘Ovesninka‘, ‘Plaskarka‘, ‘Žňuvka‘

Pear trees – unspecified varieties (working names): *Čertí hruška, Hnilička z Jiříkova, Hnilička z Kněžpole, Hnilička z Krásné, Hnilička z Křížova, Hnilička z Leskovce, Hnilička z Lojkaščanky, Hnilička z Morávky, Hnilička z Píště, Hnilička z Razové, Hnilička z Roudna, Hnilička z Roudna II, Hnilička z Těchanova, Hnilička ze Starých Heřminov I, Hnilička ze Starých Heřminov II, Hnilička ze Strahovic, Jaškova, Letní hnilička z Markvartovic (Dědek a Babka), Letní hnilička ze Starých Heřminov, Letní hrušeň z Dolního Benešova, Letní hrušeň z Horního Benešova, Neurčeno Burkvíz I-IV, Podzimní hrušeň z Darkovic, Podzimní hrušeň z Dolní Lhoty, Podzimní hrušeň z Dolního Benešova* and others

Prunus – old varieties: ‘Althanova rengloda‘, ‘Anna spät‘, ‘Bühlská‘, ‘Černošická‘, ‘Durancie‘, ‘Hamanova‘, ‘Chrudimská‘, ‘Kirkeho‘, ‘Královna Viktorie‘, ‘Malvazinka‘, ‘Mirabelka flottowa‘, ‘Mirabelka nancyská‘, ‘Ontario‘, ‘Oulinská‘, ‘Stanley‘, ‘Švestka domácí‘, ‘Vlaška‘, ‘Wangenheimova švestka‘, ‘Wazonova‘, ‘Zelená rengloda‘, ‘Žlutý špendlík‘

Prunus – unspecified varieties (working names): *Kulovačka z Kašnice, Kulovačka z Krásné, Kulovačka z Roudna, Medovka, Farská z Oldřišova*

Cherries and sour cherries – old species: ‘Amarelka královská‘, ‘Burlat‘, ‘Germersdorfská‘, ‘Hedelfingská‘, ‘Karešova‘, ‘Kaštánka‘, ‘Královna Hortensie‘, ‘Moreau‘, ‘Morela pozdní‘, ‘Morellenfeuer‘, ‘Mšenská jánovka‘, ‘Napoleonova chrupka‘, ‘Ostheimská‘, ‘Pivovka‘, ‘Podbielského‘, ‘Rychlice německá‘, ‘Sladkovišeň raná‘, ‘Thurn Taxis‘, ‘Troprichterova‘, ‘Uherka veliká‘, ‘Vackova‘, ‘Van‘, ‘Velká černá chrupka‘, ‘Vlkova‘

Establishment of Gene Pool Areas

Since only the last specimens of the vast majority of surviving old and regional varieties are present in the Silesian landscape, and these are often very old, dry or broken trees, the method of preservation of the genetic resources in demonstration gene pool orchards at the sites where they were initially grown has been chosen. The gene pool is a reservoir of capabilities fixed in living individuals, of which each individual, each plant or animal carries original properties that are unrepeatable.

When creating the concept of preservation of varieties in individual orchards, the major aspect was current (mapping) and previous (records of presence in the past) presence of varieties in the given area. The individual gene pool orchards, which we have created in previous years, thus take into consideration the presence of varieties in the region or micro region in which they are found: Opava – Lhota u Háje in Silesia, Oldřišov; Hlučín – Vřesina, Oldřišov; Bruntál (Nízký Jeseník) – Razová.

In compliance with the methodology for preservation of old and regional varieties and the establishment of gene pool areas, the biggest space is dedicated to varieties found in the research assortment – regional and local varieties that in terms of preservation require planting of at least two pieces as well as priority and specialised assortment varieties. Since this concerns a demonstration of the gene pool of the given area, the collections, to a lesser extent, also include acceptable

assortment varieties which were abundantly grown in the past and were supplied to growers by the fruit nurseries.
An exception from this concept are the gene pool orchards in Lhotka u Litultovic, where for the reason of urgent need of preservation, cherry varieties have been selected from the entire territory of the Czech Republic. The varieties in this orchard particularly belong to the priority and specialised assortment, with a small portion also belonging to the acceptable and research assortment.
In Silesia, we currently have 6 gene pool areas that we have established and maintain (status in spring 2017):

Gene pool orchard of the Opava region in Lhota u Háje in Silesia (photo 1) – 28 apple and pear trees – selection of old and regional varieties grown in the Opava region in the past. The orchard was established in 2012 on the premises of Mlýn u vodníka Slámy, an integral part of which is an educational trail.

Gene pool of the orchards of Lower Jeseník in Razová – 74 apple, pear, Rowan, prunus, cherry and sour-cherry trees – selection of old and regional varieties grown in the past in the Bruntál and Rýmařov regions. The orchard was established in 2013 and includes an educational trail.

Gene pool of the orchards of the Opava and Hlučín regions – Nurseries in Oldřišov – 48 apple, sorbus and prunus trees – selection of old and regional varieties grown in the past in the Opava and Hlučín regions. The orchard was established in 2012 and is used to teach pupils of the Oldřišov Primary School.

Gene pool of the orchards of the Hlučín region in Vřesin (Photo 2) – 118 apple, sorbus and prunus trees – selection of old and regional varieties grown in the past in the Hlučín region. The orchard was established in 2013 and planting has continued in subsequent years. There are 14 vacant positions.

Gene pool of fruit tree orchards in Lhotka u Litultovic – 31 cherry trees – old and regional varieties grown in the Czech Republic (one of the few collections of cherry varieties in our country). The orchard was established in 2016 and has 30 vacant positions in which old cherry and prunus varieties shall be grown in coming years.

In the case of the gene pool areas planted to date, this concerns land owned by municipalities (in the cases of Vřesina and Lhotka u Litultovic) and privately owned (in the cases of Lhota and Razová).
In autumn 2017, it is planned to plant cherries in the orchard in Lhotka u Litultovic as well as to establish a 2nd Gene Pool Fruit Tree Orchard in the Hlučín region on the grassland of the Municipality of Bolatice.

Planting was carried out according to nature and landscape care standards issued by the Nature and Landscape Protection Agency SPPK C02 003:2016 Planting of Fruit Trees in the Agricultural Landscape. The character of the plantation corresponds to the traditional extensive orchards with rectangular spacing, lines with a spacing of 7-9 m, tree spacing in lines of 6-12 m according to the species (shorter distances apply to prunus and longer distances to pome and cherry trees). Of course, it also depends on the character and conditions of the area as well as the method of care (size of machinery). Standard and half-standard fruit trees were planted with priority, but often also semi-dwarf and spikes since it was not possible to find the required material. In subsequent years, these trees were pruned and shaped into standard trees, or in the case of some prunus trees, into the half-standard tree shape. In the gene pool in Vřesin, we largely used rootstock, which we planted in vacant positions. In subsequent years after planting, we grafted the crown with the selected varieties found. Thanks to adequate fence protection, the grafting was highly successful. In subsequent years, we shall continue with this practice which allows for highly flexible preservation of varieties. After successfully planting trees, it is necessary to provide firm support and good protection – in practice

1-3 milled stakes (minimum thickness 6 cm, 250 cm tall, at best with a burnt underground part) and guards from rabbit fencing (tube of size 120-150 cm) have sufficed.
These plantations are being taken care of by the Basic Organisation of the Czech Union for Nature Conservation in Levrekův ostrov, which annually performs comprehensive maintenance of trees according to nature and landscape care standards issued by the Nature and Landscape Preservation Agency, SPPK C02 005:2016 Fruit Trees Plantation Care. The following work is done during the year:

- Pre-spring training
- Summer pruning, maintenance of the trunks, and removal of needless branches
- Planting of trees or rootstock in free or vacated positions
- Checks, repairs and preparation for the replacement of stakes and protectors, and the loosening of straps
- Grafting of the rootstock crown
- Re-grafting of varieties, which have been re-identified and found to be in duplicity
- Irrigation
- Grass mowing

At currently planted sites, which are however not always ideal for growing fruit trees, there has been minimum failure of trees.
In parallel with care for the trees, pomological identification is carried out annually with respect to those varieties which are grafted in plantations, but which are in the group of unspecified varieties or whose accuracy of their past identification is doubtful, and which are therefore reviewed. It is clear that this is a long-term process from cases where re-categorisation is done several years after planting.
Besides retention of the initial gene pool, these activities are also targeted at fruit growing education. The planted areas are used for teaching pruning and care for fruit trees. It is also for this reason that we place great emphasis on correct administration of care in these areas. The gene pool orchard in Oldřišov has long served for the education of students – within the scope of mathematics, they have learnt how to measure the spacing of the plantings, how to correctly plant a tree, practice pruning and grafting, distribute birdhouses, rake grass, and flower strips are sown in the intermediate rows on which observations are made within the framework of natural history.

Evidence of a Gene Pool Area

For inclusion in a gene pool, areas entered in the national database administered by the ČSOP (the Basic Organisation of ČSOP Meluzína), it is necessary to take inventory according to the applicable methodology issued by the Meluzína Ecology Centre – Regional Centre of the Brontosaurus Association (author - Ing. Martin Lípa). For this purpose, a component of the plantations in some gene pool orchards, or in subsequent years also in the case of other orchards, inventory shall be taken of gene pool areas and positions according to the methodology of the ČSOP (Inventory of gene pool areas and positions with the support of the National Programme of the Czech Union for Nature Conservation (ČSOP) Protection of Biodiversity).
The methodology comprehends an inventory in two steps/parts as evidence of gene pool areas and evidence of the positions in the gene pool areas.
Records of gene pool areas concentrate data on administration, property rights and ecological relationships of these areas.

1. Field work
    - Focus on the district of the gene pool area GPS – breaking points and entrance to the area are stored in gpx. format
2. Processing of Field Data
    - Identification of the area administrator – name of the organisation, which administers the area, its address, responsible person, e-mail address and telephone number
    - General and geographical character of the area – official name of the area which should

be used, total number of positions in the gene pool area, size in m^2 and GPS co-ordinates of the entrance
- Description of the ecological conditions – data on soil-forming rocks on the land; number of the pedo-ecological units (BPEJ)
- Orientation in the correct location of the area – municipality with extended authority, region, name and number of the cadastral area, number of the land plot of the gene pool area
- Property and administrative description – business names or names of the land owners
- Photo documentation of the area and its development
- Protection values – name of the land association; category of protected land to which the area belongs, name of the protected area; names of documented, particularly protected, flora and fauna species

After completion, the professional guarantor processes the evidence and checks the correctness of the data.
The methodology for recording the positions within the scope of one gene pool stipulates a unique and continuous numerical series, whereby the position may be occupied or vacant.

1) Field work
   - Marking of saplings with positions using colours according to which they shall be entered into the records, acquisition of GPS co-ordinates
   - Surveying of all positions in the orchard
   - Storage in gpx. format and subsequent completion of an xls. spreadsheet in which information is added to each position
2) Processing of field data
   - Position – number according to GPS co-ordinates
   - Designation of the species, variety and their sources – species (J, H, T, V, S); vacant position (1); rootstock; name of the variety or working title – numerical code, working title; source of grafting material (link to the mapping database or nursery name), detailed characteristics, GPS co-ordinates of the parent tree
   - Description of the condition of the tree present in a position – year in which the tree was planted; re-grafting data, trunk-forming variety, rootstock; condition (young, fruitful, dead, empty, cancelled, rootstock); parent tree for off-take of grafts under the supervision of the Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ)
   - Planning of further proceedings for the position – target state – variety, re-grafting…
   - Photo documentation of the fruits
   - Photo documentation of the trees
   - Statements of pomologists – checks of the authenticity of the varieties, re-identification

Completed tables are sent to the guarantor, who is responsible for checking and supplementing the database as well as its publishing in the national database at the website.

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Summary of Content:
Preservation of old and regional varieties in Silesia
Firstly, the preservation of old and regional varieties is important to pomologists, breeders, fruit growers or small-scale growers in the preservation of unique and unmistakable varieties with certain fruit properties. The objective of the project is to map the terrain, to identify the varieties found, to record essential data about the locality using GPS, to create materials for mapping, to process data on the trees, and to plant gene pool orchards at the sites where the trees were initially found. The areas are used for teaching, demonstration of farming in historical periods, and the spectrum of plants which accompanied them.
For inclusion in gene pool areas entered into the national database administered by the ČSOP (the Basic Organisation of ČSOP Meluzína), it is necessary to take inventory according to the applicable methodology issued by the Meluzína Ecology Centre – Regional Centre of the Brontosaurus Association.
An integral part of the material is also the enumeration or description of selected historical and regional varieties of pome fruits and stone fruits.

Photographs

Photo 1 Lhota.JPG
The Gene pool orchard of the Opava region in Lhota u Háje in Silesia was established in 2012 on the premises of Mlýn u vodníka Slámy, an integral part of which is an educational trail

Photo 2 Vřesina.JPG

The gene pool fruit tree orchard of the Hlučín region in Vřesin currently counts 118 apple, pear and plum trees – a selection of old and regional varieties grown in the past in the Hlučín region.

Photo 3 Pasecké vinné.JPG

Pasecké vinné – a regional winter variety originating from Paseka near Uničov. The variety is mentioned by Dr. František Dohnálek in his book: *Lokální odrůda severovýchodní Moravy / Local variety of North-East Moravia. The fruit is medium-sized, with a somewhat flat globose shape, golden yellow, with red stripes, with a pleasantly sour, slightly spicy taste. Good marketing apple, holds through April.* The tree grows vigorously and forms upright trunks.

Photo 4 Major.JPG

Major – A variety that is clearly from England. Its spread in Silesia is something of a mystery, but the credit apparently goes to the Duke of the Kyjovice Castle who brought the variety here, and the gardener Kupka who grafted it in the local castle garden and distributed it in the vicinity. In English pomology, it is a member of the so-called cider sort of apples. It forms a medium large to large crown and grows vigorously from an early age. The tree is highly resistant to frost and was at some time also recommended as a trunk-forming variety. The fruits are medium sized, flat globose shaped, green with a red cheek, the flesh is greenish yellow, sweet and juicy, with a typical aroma. Picked in the 2nd half of October, survives up to April in a good cellar.

Photo 5 Jakubinka.JPG

Jakubinka – The earliest pear in the local assortment, whose name is derived from the ripening time (around St. Jacob's Day in mid-July). It has been grown here *from time immemorial* (and is also known as *Kulatinka*). *The pears are small, round, green, and later yellow. Some are smaller, more green, less juicy, others are larger, more yellow, more juicy, and both have a less distinctive taste. Nice when cooked."* (Myslivec 1933:123) The trees are quite big, typical of the habitat with a large number of fruit-bearing branches on the major branches. It can be consumed with the entire core and it is also possible to conserve the entire fruits.

About the author:

Mgr. Radim Lokoč, Ph.D. studied at the Faculty of Social Studies, obtaining a postgraduate degree with specialisation in Environmental Humanities in the Department of Environmental Studies at Masaryk University in Brno. From 2013, he has worked for the Local Activist Group Hlučínsko and the Association of the Municipalities of the Hlučín Region. In the basic organisation of the Czech Union for Nature Conservation in Levrekův ostrov, he focuses on mapping, planting and care for old and regional fruit tree varieties and has established and maintains 5 gene pool orchards of these trees. Within the scope of his own business and through the Basic Organisation of the Czech Gardening Association in Oldřišov, of which he is a member, he organises fruit tree planting and pruning courses. He is involved in EVVO – projects for schools and the general public, especially in the Hlučín and Opava regions. He implemented the Pilný mlýn and U vodníka Slámy educational trails and the Nízký Jeseník gene pool orchard. He is the author or co-author of the publications *V zahradě na sadě, Sedm tváří ovocnářství, Moravský sladkoplodý jeřáb – z Ostružné do světa, Ovoce Opavska, Krnovska a Osoblažska, Tradiční ovoce moravsko-slovenského pomezí jihu bílých Karpat, Vývoj krajiny v České republice, Kolektivizace venkova v Československu 1948-1960 a středoevropské souvislosti*.