

9.3.3 From *Pflantz-Gart* (1639) to *Stamm-Register* (1865) – on the history of knowledge of fruit cultivation in the canton of Bern

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Among efforts to improve agricultural productivity, the cultivation of useful plants in particular was at the centre of the Economic Enlightenment. But in contrast to fodder and textile plants, cereals, and potatoes, fruit trees are not included among its favoured subjects.¹ This is astonishing in view of the significance that fruit has acquired in the contemporary diet. Fruits were especially important as a means of tiding people over during periods of food supply shortfalls. In the first six months of the year, early ripening varieties of fruit helped bridge gaps in cereal crops. Further, with minimal effort towards preservation, dried fruits could be consumed later in the year.²

Be that as it may, systematic efforts to improve fruit cultivation go back to even before the classical period of the Economic Enlightenment. The example of Bern is especially well suited to such an analysis over the *Longue durée*, covering the period of Daniel Rhagor's *Pflantz-Gart* (1639), the diverse activities of the *Oekonomische Gesellschaft Bern* (Economic Society, established 1759), and the «Register of varieties of excellent species of pome fruits for the canton of Bern» (*Stamm-Register*, 1865). From the perspective of the history of knowledge, the connections between scholarly knowledge and local experience, on the one hand, and the changing actors in these knowledge systems, on the other, are objects of particular interest.

(1) Fruit cultivation as part of aristocratic garden culture: *Pflantz-Gart* (1639)

Daniel Rhagor (1577–1648) was a member of the Bernese patricians. He served as a bailiff (Landvogt) in Gottstatt and Thorberg and administrated the wine vault of the German-speaking territory (Deutsch-Weinschenk).³ With the publication of his *Pflantz-Gart* in 1639, he released the first systematically structured German-language guide to cultivation of fruits, vegetables, and grapevines in Switzerland.⁴ With its countless moral-theological and astrological remarks, this comprehensive 550-page compendium is a typical example of «Hausväter«-literature.⁵ The author relies on his longstanding practical experience in fruit cultivation, on the one hand, and on his knowledge of the ancient classics as well as contemporary French and German specialist literature, on the other.⁶ At the back of each sub-chapter, he includes explanations of the corresponding Latin and French technical terms. With didactic intent, Rhagor concludes the section on fruit cultivation with around 100 easily remembered mnemotechnic verses. Throughout the entire work, he strives to adapt international literature to the local circumstances. However, an index of fruit varieties suitable for local or regional cultivation is missing. Rhagor regretfully maintains that providing such a list would be «an impossible thing», since the countless apple varieties are not only «named differently from one place to another» but are also given “new names from one day to the next».

The widely read *Pflanz-Gart*, already appearing in its 5th edition by 1676, should be interpreted in the wider cultural context of the Bernese patricians.⁷ The great extent to which the patricians' agri- and horticultural interests shaped the «noble country life» may be seen in the gardens of Bernese country estates, just as obviously as contemporary still life paintings portraying varieties of fruits, berries, nuts, and vegetables in all their diversity (Joseph Plepp, Albert Kauw). Upon publication, every member of

¹ Popplow in print; Popplow 2010; Stuber/Lienhard 2007.

² Linnemeier 2004; Teuteberg 1998; Mattmüller 1992.

³ Martin 1961; Sterchi 1906.

⁴ Rhagor, Daniel: *Pflantz-Gart, welcher gestalten 1. Obst-Gärten, 2. Kraut-Gärten, 3. Wein-Gärten. Mit lust und nutz an zustellen, zu bawen, und zu erhalten*, bey Stephan Schmid, 1639.

⁵ see: Kruse 2013; Schröder-Lembke 1984.

⁶ Carolus Stephanus, Antonius Mizaldus, Benedictus Curtius, Du Pradel (Oliver des Serres [le théâtre d'agriculture], Johann Colerus [Hausbuch über landwirtschaftliche Dinge].

⁷ Herzog 2008; see: Düsseldorf 2009.

Bern's council was furnished with a copy of *Pflanz-Gart*, which therefore automatically made it into the households of most patrician landowners. A sociologically somewhat broader circle is evidenced by the 17 authors of poems of praise that complemented the different editions of *Pflanz-Gart*.⁸ Among them were magistrates, professors, clergymen, and administration officials – a social structure bearing some similarity with the social structure of the *Oekonomische Gesellschaft* a century later.

(2) Fruit cultivation as part of the Economic Enlightenment: *Oekonomische Gesellschaft* (1759f)

The *Oekonomische Gesellschaft* of Bern, founded in 1759, combined an understanding of science and nature that was focused on practical use, with concerns for economic, social, and political reform.⁹ As such, it proved to be a part of the Economic Enlightenment, whose main idea was the most comprehensive use possible of a territory's natural resources.¹⁰ Especially in this point, the Economic Enlightenment went further than the «Hausväter»-literature, which mainly focused on the individual household. Research questions for fruit cultivation, formulated by the *Oekonomische Gesellschaft* within its comprehensive work programme (1762) are indicative of this new territorial view:

- What fruit trees grow best in which area and what new species could be introduced?
- How should tree nurseries be developed and maintained?
- To what extent is it useful to extend fruit cultivation?
- In areas with many wild specimens, how can farmers be persuaded to graft these?
- How can we reap greater benefits from fruit cultivation by more careful harvesting and better technique in the making of fruit wine and spirits?

On the one hand, the *Oekonomische Gesellschaft* incorporated this comprehensive programme into a spatially differentiated inventory. Between 1759 and 1855 it created a total of 48 «Topographische Beschreibungen» to map the current state and development potential of the districts or regions of the Bernese territory. Gerrendina Gerber Visser investigated these topographical descriptions in detail in her dissertation published in 2012. In 41 of these descriptions, partially extensive information can be found on the state of local fruit tree cultivation.¹¹ From these descriptions we learn for each region, for example, how they fertilised orchards, which types of fruit were common and which were rare, which specific forms of fruit use were practiced, and in which cases it was worth to sell fresh or dried fruits in the next town. There are also a few entries on locally occurring fruit varieties, as in the topographical description of Brienz and Ringgenberg (1779), in which the clergyman Rudolf Nöthiger referred to «Renettes» in the case of apples; in the case of pears, he wrote that these were mostly procured in the Emmental, as experience had taught that they should be transplanted from a colder to a warmer climate. In the particularly detailed Sumiswalder Topography (1827), clergyman Samuel Rudolf Fetscherin (1780-1851) describes the «sweet and sour Grauech» as the most popular and useful type of apple. He also mentioned «Mayländer, Sprenech, Düttlech, and whatever other quaint local names there are». In the case of pears, Fetscherin mentioned not only the very common «Brunnbirnenbaum» but also «Yellow pears», «Hirsbirnen» and «welsche Kannenbirnen». Among prunes, he mentioned the grafted «Fellenbergzwetschge» in addition to the predominantly occurring wild varieties.

Compared with this impressive inventory, the field of activity developed by the *Oekonomische Gesellschaft* to improve the Bernese fruit tree culture seems very modest. The efforts of two active members – both of them Bernese patricians – stand out from these few activities. Franz Jakob von Tavel (1729-1798) reported at a meeting on his comprehensive collection of fruit trees and on successful breeding in his tree nursery.¹² Karl Emanuel von Graffenried (1732-1780) kept a comprehensive list of foreign plants that for a number of years survived the cold of the local climate in

⁸ Hans Rud. Bitzios und die Rhagorlieder, in: Berner Taschenbuch auf das Jahr 1887, 81-96.

⁹ Holenstein/Stuber/Gerber-Visser 2007.

¹⁰ Popplow 2010.

¹¹ Gerber-Visser 2012, 360/361.

¹² VS-1765-09-28.

his castle garden in Worb, including various types of fruit trees.¹³ Under properties, Graffenried noted not only the taste of the fruits and their suitability for eating raw or for cooking, but also the time of harvest between May and August, as well as their aesthetic qualities. Pear trees, for example, included a variety with striped leaves, giving the trellis «an attractive appearance», while other varieties with their double flowers beautified the garden as a whole during bloom. Graffenried was very unbalanced when it came to information on the various fruit species. While he listed no less than 10 types of cherry ranging from the «Engländer Mayherzogkirsche» to the «St. Martinskirsche», he only listed three pear and apple types respectively, and one prune and quince type. All in all, Graffenried was far from complete, especially when compared to the many more comprehensive and systematic lists of grains, fodder plants, and wild trees that were created at the same time, in the *Oekonomische Gesellschaft*.¹⁴

Instead of a systematic inventory of fruit trees varieties, the *Oekonomische Gesellschaft* supported the publication of an excerpt from Philip Miller's famous encyclopaedia of gardening (1750-1758, engl. Original 1732), integrating also passages from Duhamel and Thierriat. It names six quince, 19 cherry, 33 plum, 40 apple, and 80 pear varieties. However, neither the many varieties nor the comprehensive instructions on how to plant, graft, prune, and carry out pest control were adapted to local conditions.¹⁵

Possibly because of its comparatively modest intrinsic activity to improve fruit culture, in 1772 the *Oekonomische Gesellschaft* commissioned one of its outstanding members, Niklaus Emanuel Tschärner, with the task of re-editing Daniel Rhagor's *Pflantz-Gart*, 130 years after it was first published.¹⁶ And in 1828 the Bernese patrician Rudolf Gabriel Manuel (1749-1829) presented at a meeting of the *Oekonomische Gesellschaft* a biography he had written of Daniel Rhagor, «author of the well-known and, over the past 200 years, much-used Rhagorian 'Pflanz-Garten».¹⁷

(3) Fruit cultivation as part of the stronger cooperation between *Landwirtschaftsverein* and government: *Stamm-Register* (1865)

Daniel Rhagor considered it too difficult, and also the *Oekonomische Gesellschaft* was unable to achieve it in the first century of its existence: a systematic register of varieties for regional fruit cultivation. Now, such a register was completed within a relatively short time and published in 1865 by the cantonal commission for fruit tree cultivation under the leadership of councillor (Regierungsrat) Johann Weber (1823-1878).¹⁸ The main principle was only to take up those varieties that – depending on location, climate, and soil – promised a secure yield in terms of quantity and quality. In addition, the fruits listed should already be described in pomological works, and possess fixed and widely known names. Besides a few celebrated German and French varieties whose introduction was considered desirable, primary consideration was given to varieties that were already cultivated and widespread in the canton of Bern. To find out which these were, the commission organised various fruit exhibitions in 1864 which included displays by a total of 243 exhibitors from around the canton. The Fruit Tree

¹³ Graffenried, Karl Emanuel von: Verzeichniss verschiedener Pflanzen und Bäume, die vor etwelchen Jahren zu Worb gepflanzt worden, und die Kälte unsers Klima unbedeckt ausgehalten haben. In: Abhandlungen und Beobachtungen durch die oekonomische Gesellschaft zu Bern gesammelt. Bern 1764, 1. Stück, 144-165; Graffenried, Karl Emanuel von: Die Verzeichnisse fremder Pflanzen so in der Schweiz wachsen könnten: dritte Fortsetzung. In: Abhandlungen und Beobachtungen durch die oekonomische Gesellschaft zu Bern gesammelt. Bern 1764, 3. Stück, 133-165.

¹⁴ Stuber/Lienhard 2007.

¹⁵ Vollständige Anleitung zu der Pflanzung, Erziehung und Wartung der Fruchtbäume, aus Hrn. Ph. Millers grossem englischen Gärtner-Lexiko durch Veranstaltung der oekonom. Gesellschaft in Bern zusammengetragen. In: Sammlung auserlesener Schriften von staats- und landwirthschaftlichem Inhalte. Mit Beyfall einer löbl. oekonomischen Gesellschaft zu Bern herausgegeben. Bern 1764, 4. Stück, 1-342.

¹⁶ Wahlen 1959, 69; this undertaking failed.

¹⁷ VS 1828-11-26; BBB GA Oek.Ges. 90(1).

¹⁸ Stamm-Register vorzüglicher Kernobstsorten für den Kanton Bern nebst kurzer Anleitung zur Pflege der Obstbäume und zu zweckmässiger Bewerthung des Obstes, hrsg. von der kantonalen Kommission für Obstbaumzucht. Bern 1865; Protokoll über die Verhandlungen der am 10. November 1863 im Casino zu Bern stattgehabten öffentlichen Versammlung zu Besprechung über die Mittel zur Hebung und Förderung der Obstbaumzucht im Kanton Bern. Bern 1863.

Registry of 1865 contained 60 apple and 50 pear varieties, each accompanied by a short description of location and economic use. Throughout, the French names were given, as used in French pomological literature. The given local names were only considered for a few varieties, as many of the names were uncertain and not the same in different areas, and could therefore cause confusion. (5, 7).

The author of this central part of the Fruit Tree Registry – it also contained short instructions for tree care and use of fruits – was Emanuel Friedrich Fischer (1828-1907), Botany Professor at the University and Director of the Botanical Gardens. The significant role of these two institutions is indicative of the differentiated structure of actors that made the creation of the Fruit Tree Registry possible. The Chair of Botany at the University of Bern (the University had existed only since 1834) guaranteed the scientific quality of the definition of varieties. The Botanical Garden had around 150 varieties of fruit, ensuring that the varieties described in the register were represented by mother trees.¹⁹ The second orchard of mother trees was set up at Rütli, near Bern. This was the site of the canton's first state-run agricultural school, which was set up in 1860 and given a leading role in fruit cultivation education. It was the *Oekonomische Gesellschaft* which had already asked the government to include fruit cultivation on the Rütli's teaching curriculum.²⁰

In the first half of the 19th century, the *Oekonomische Gesellschaft* had been transformed from an elite reform society to an agricultural association with a much broader social base; in 1846 it issued its own publication for the first time in nearly 50 years.²¹ The publication contained numerous articles covering the whole spectrum of fruit tree cultivation. In addition to many instructions of a more technical nature, there was also a broad discourse on promoting fruit cultivation, which is described as playing an important role in the food supply, people's education, and the aesthetic quality of the landscape. In line with the broader social base now represented in the *Oekonomische Gesellschaft*, the publication contained contributions by authors such as Jacob Jost, gardener from Wynigental. But the main authors were still Bernese Patrician such as Friedrich Emanuel Zehender (1791-1870), whose influential publications were based on his own experiences in fruit cultivation. These experiences he gained on the Gottstatt estate – exactly where Daniel Rhagor had once practiced fruit cultivation.²²

Conclusion

The development presented here of Bernese fruit culture over a period of around 230 years can, on the one hand, be viewed as an increasing differentiation of actors. From the individual landowner, Daniel Rhagor, in the 17th century, to the collective *Oekonomische Gesellschaft* in the 18th century, to the differentiated association of actors comprised of the *Landwirtschaftsverein*, university, and government in the second half of the 19th century. By contrast, there is strong continuity in the meaning of aristocratic garden culture. The central actors in the three phases presented here – Daniel Rhagor, Karl Emanuel von Graffenried, Emanuel Friedrich Zehender – are all Bernese patricians, whose model estates had already been noticed by their contemporaries. The topographical description of Laupen (1779) contains a remarkable finding: «The old fruit trees that are still standing are of poor quality, but now better varieties are being planted. The neighbourhood of towns and noble estates has taught them to know, plant, and cultivate them [...]»²³

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¹⁹ Fischer 1866, 40.

²⁰ Guggisberg 1959, 187.

²¹ Stuber/Moser/Gerber-Visser/Pfister 2009.

²² Jacky 1913.

²³ Laupen 1779, 91.