

STATISTICAL AND TOPOGRAPHICAL DESCRIPTION OF THE CZECH LANDS IN THE 18TH AND 19TH CENTURY

Prokop Závodský – Ondřej Šimpach

Abstract

One of the historical roots of modern statistics was called the university statistics, developing in our territory especially in the last quarter of the 18th and the first half of the 19th century. While professors of statistics at the universities in Prague and Olomouc focused on describing the various European countries and their attributes, (because statistics substituted the geography at the time, which was not implemented at our universities yet), the others of their contemporaries paid attention to descriptions of Bohemia, Moravia and Silesia by geographical regions, towns and villages. The aim of this paper is to review the development of the statistical-topographical studies in our lands, with focus on the concerns how the particular authors contributing to the development and popularization of statistics and demographics methods in our country. In this point of view there is the most important medical topography dedicated to Prague written by Old Town' physics Franz Alois Stelzig.

Key words: statistics, demographics, topography, Czech lands

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Introduction

The history of statistics as a scientific discipline is extraordinary because this discipline has changed significantly the subject of its examination and also its method during last three centuries. Approximately to the first half of XIXth century the statistics was considered to be systematic description of various states and lands, in today's terminology we would talk rather about policy-economic geography and constitutional law. The discipline conceived like this is often called university statistics, because during the XVIIIth century it spread over in universities and lyceum, mostly in Central Europe, i.e. mostly German language speaking¹. Classic person and author of the science's title - statistics (1749) was the "father of statistics", Gottfried Achenwall (1719–1772), whose successor on, at that time famous and innovative

¹ In fact, university statistics substituted here besides other geography, which prevailed as a separate discipline only later, (see also paper by Závodský, 2013 or Závodský, Šimpach, 2014).

University of Göttingen², became Schlözer August Ludwig (1735–1809). However, beside university professors, also non-academic intellectuals and writers dealt with statistics. They focused in particular on the description of partial territorial units (regions) and individual towns and villages. Thus they created a specific sub-discipline that can be called statistical-topographical direction of statistics.

In this paper we attempt to present a systematic review of these studies in recent decades of XVIIIth and the first half of XIXth century. While writing this article, we worked especially with rigorous literature of older writers (Zíbrt, 1900, Roubík, 1940). We also have drawn from some chapters of the study of Závodský (1992). In our paper we focus on works of the authors originating from the Czech lands or operating here. The main attention is then paid to using of statistical methods (in today's meaning of the word) in these publications.

1 The development until the beginning of XIXth century

The key person was Jaroslav Schaller in observed period, but let us briefly look also on previous development. As the founder of geographic description of Bohemia can be considered Post-White Mountain emigrant Pavel Stránský of Zápý (1583–1657). Its Latin *Respublica Bojema* was published in the Netherlands in 1634 in the framework of an edition *Respublicae Elzevirianae*³ and described (in its time successfully) the geographic situation in the Bohemia, including a treatise of the former regions and their centres. The second important author of XVIIth century was the Jesuit scholar Bohuslav Balbín (1621–1688) with his extensive work *Miscellanea historica regni Bohemiae* in which based on the proper study in archives and in libraries he gave a description of geographic conditions, population etc. in Bohemia. Especially IIIrd part of this book *Liber topographicus et chorographicus* (Prague, 1681) is devoted to a detailed description of Bohemia, including the division of the country into regions. There is also a list of towns with stated distance from Prague, overview of the castles, religious monuments etc. Balbín's factually rich work was still at least half a second century used by his successors. Let's begin a list of works of the following century by the book of Cistercian monk from Plasy, M. Vogta *Das jetztlebende Königreich Böhmen* (1712). Also here a brief summary of cities and other settlements in the country is not missing. A number of other works, indicating the growing interest in the statistical-topographical manuals, even in the state and provincial authorities, remained in manuscript. Let us name at

² Its adjective (statisticus) appeared in middle-age Latin already earlier.

³ This edition, being published in years 1624–1640, served as a main information resource also to the founder of German university statistics, to Hermann Conringi (1606–1681) and to other authors.

least the most important authors: K. J. Kitlitz from Ehrenherz, Earl A. Christiani and Earls (brothers) Václav and Alois Ugarte⁴. Between the Latin and later mostly German writings, the first Czech written geography guide appears only in 1778 – *Krátké Wypsanj Země České* (Prague, 1778) from a patriotic priest Josef Táborský. The most important publications in the period under review is undoubtedly work with 16 volumes of piarist historian Jaroslav Schaller (1738–1809)⁵ *Topographie des Königreiches Böhmen* (Schaller, 1785–1790). In order to obtain the information necessary for his monumental work, Schaller used (besides the existing literature and archival sources), as the first author of topographic work in our countries, a questionnaire. It is published in the preface to the first part and contains 19 questions points related to the name of the city, its location, the predominant language, owners, church relations, important buildings and other sightseeing, economic conditions (sweatshops, agriculture, trade and other jobs in the location), the number of houses etc. Then Schaller with agreement of religious and secular authorities send the printed questionnaire to the priests across the country. The result of this collective cooperation is above mentioned extensive publication, giving in different volumes the descriptions of regions according to the single coherent scheme⁶. Despite some shortcomings that have been criticized by Schaller's contemporaries (excessive attention to church history at the expense of economic conditions, a small criticism to taken information, sometimes incompleteness or inconsistency), this Schaller's work meant substantial content and methodological advance. It became the basis for further work in the field for a long time. It is still widely used, especially by historians and by art historians⁷. Schaller dedicated IVth volume to the capital city Prague, until that the most comprehensive statistical and topographical description of Prague – *Beschreibung der kgl. Haupt- und Residenzstadt Prag* (Prague, 1794–1797). He published also topographic lexicon of Bohemia in 1802. To our statistical-topographical survey work it is possible to include some contributions, printed in proceedings, published by Schaller's contemporary Josef Antonín, knight Riegger (1742–1795) and by his group of associates. Riegger is also likely an

⁴ His comprehensive manuscript ended up in archive in Vienna. Beside geographical description of Bohemia it contains also clear statistical tables about Czech population and also critical tractate about the methodology of contemporary conscriptions. (Zibrť, 1900, p. 21-22).

⁵ J. Schaller came from Konopiště u Benešova. He taught at piaristic schools, then nearly for four decades he works as a tutor in the family of Count Nostic in Prague.

⁶ Volume I contains mainly the descriptions of Rakovnický region and general discussion about Bohemia. As the 17th volume an extensive index for the entire work is then connected – *Universalregister zu den sechszehn Theilen der Topographie von Böhmen* (1791). Here in the foreword the table with the number of cities, townships and villages and hamlets can be found – by region and globally for the whole country (there is a calculation error).

⁷ Some modern historians based on Schaller's data reconstructed the linguistic border in the Bohemia in the initial period of the National Revival. Nationality of the population in those conscriptions had not been checked.

author of XVI volume publications *Kurzverfasste Beschreibung des ... (Berauner, Bidschower, ...) Kreise* (Prague, 1794)⁸. Volumes, devoted gradually to each former region (a range of about 60 pages), contain the lists of towns, villages, estates, farms, castles, parishes etc. Demographics data are practically missing, information on agricultural and industrial production are relatively brief. We find particularly interesting the data with about average annual harvest of agricultural crops. A pioneer of university statistics in Moravia was a professor (of statistics and political science at the Olomouc's Lyceum in 1788–1815). His statistics of Moravia was not published⁹. Aforementioned statistical description of Moravia of brothers Ugart (1780) also remained in the manuscript. A founder of statistical-topographical direction in Moravia became František Josef Schwoy (1742–1806), a municipal official from Mikulov. The result of his many years of material collecting became the work *Topographische Schilderung des Markgrathums Mähren*, which without his knowledge was published in two volumes under his own initials a prelate of Ždár, O. Steinbach (Schwoy, 1786). Apart from the overall review of the country (Steinbach missed the history of Moravia) the first volume contains a description of the Olomouc region. Like in the Schaller's publication there are discussed individual cities and municipalities in alphabetical order, the range differs according to the importance of the seat. Unlike spiritual Schaller, a municipal official Schwoy pays more attention to economic conditions, particularly agriculture - farm size, estimate its price, previous owners etc. The first volume continues by Přerov's and Hradiště's regions, the second volume deals with the Brno, Znojmo and Jihlava region. Substantially revised and expanded more than twice, Schwoy issued its statistical-topographic work as *Topographie vom Markgrathum Mähren* (1793–1794, III volumes, the IVth remained in the manuscript). Considering the progress which has been made by the official municipal statistics and statistical publicity, Schwoy could have extensively used the data in figures. The data on the status and population movement are published for the years 1784–1791, for the whole country, regions, towns and villages¹⁰. We also find here data on the land use (broken down into fields, meadows, vineyards, forests, etc.) and on the annual harvest of important crops (in physical and monetary terms) on taxes and fees etc. The basics of statistical-topographical description of the "Austrian" Silesia were laid by Piarist Reginald Kneifel (1761–1826) by his work *Topographie des k. k. Antheils von Schlesien*, issued in two works

⁸ See Závodský (1992, p. 23-32) for details.

⁹ See Wurzbach (1856-1891, Band 21, p. 333). Professors of statistics at provincial universities had to elaborate the statistics of their land, based on which the professor of Vienna university would be able to assemble a "general statistics" of all Habsburg's monarchy.

¹⁰ In the spirit of Josephine's conscription methods Schwoy always give information about "souls", and draft horses and ox under each other. Similarly to population also the horses are further broken-down by sex.

(IV volumes) in 1804–1806. The main attention is again dedicated to the history and religious affairs, there are less numerical information than e.g. in Schwoy's *Topographia*. With the exception of large tabular summary of artisans (IInd volume, Ist part) we find the figures only on farmland, the number of houses and people. The Ist volume (one part) is devoted to an overview of the entire historical Silesia (greater part already belonged to Prussia). Three-part IInd volume deals with the basic characteristics of the Austrian part of Silesia and then contains a discussion about the various towns and estates (in alphabetical order according to historical administrative units).

2 Overview of works in the first half of XIXth century

In the first half of the XIXth century a statistical-topographical description of Czech lands developed further. Even to this direction increasingly penetrated the statistical methods (in the modern sense). It gradually became normal not only the use of statistical data, but also the simple characteristics - taken or calculated author, especially about the population and the economic sphere. Schaller's *Topographia* still remained basic work, although it has been long criticized for its focus and factual deficiencies. Attempts to replace it by the current work, which would also provide more reliable data, especially from the economic field, were not successful. The main reason was the reluctance of state authorities, without whose consent and immediate aid could not have been such work completed and released by a private scholar¹¹. Johann Gottfried Sommer (1782–1848) proposed himself to governorate to be the author of a new statistical-topographical of the Czech Republic. He submitted a detailed plan of the proposed publication (years 1814–1815)¹². Despite that Gubernium acknowledged the appropriateness of writing of this type of publication, but Sommer failed due to his foreign origin, adventurous life and ignorance of Czech. J. E. Ponfíkl (+ 1822) and his followers tried to put together a large-scale topography without official support. The result was edition of four volumes of proposed work published in the 20th century, which include not only the attempt to describe the whole country, but also a treatise on Žatec and Berounsko region. At the same time, professor at gymnasium Joseph Eichler tried to collect for years the necessary material to a similar work of the Prague. He gained (in 1824) the support of the Patriotic Museum¹³, he compiled an extensive questionnaire amended by four tables, which were consequently in the following year through sent to patrimonial offices and cities through

¹¹ The case was the providing of official data, which were secret due to long wars with France.

¹² For details see Roubík (1940, p. 106-108).

¹³ Established in 1818, it is the predecessor of today's National Museum.

governorates and regional authorities. Neither Eichler succeeded to complete the extensive work. After his death the Society of the Patriotic Museum offered the wealth material to Sommer to be completed. He then, with the help of his collaborators, completed the work and published it under his name¹⁴. Consequently, the publications with XVI volumes had been published in 1833–1849 under the title *Das Königreich Böhmen: statistisch-topographisch dargestellt*. Like the Schaller's work, each part is devoted to one region, but the comprehensive treatise on the whole country is missing. A description of each region begins with an overall picture¹⁵, which also includes some statistics. A detailed, alphabetical, topographical survey of the region (passwords are handled by a single structure) follows. Sommer's collective work is appreciated especially for its large number of relatively accurate and complete statistical data, particularly on economic matters. However, they are usually included in the text, even on places where tabular form would be more appropriated. For each domain standard table with the division of land on dominical and rustic, by its use (fields, meadows, forests, etc. - according to the cadastral total figures for the year 1831) are published. I further data are cited from official sources. Sommer's work has been evaluated as successful for its rich content, clarity and orderliness. Other generations are using it, because similar statistical-topographical survey of the Czech Republic with this extent was not published later. Let us briefly mention the first publications in this field, which were published in the 40s in the Czech language. From the attempt of the worker of Patriotic Museum, J. A. Dunder, to prepare similar work as Sommer in Czech¹⁶ remained only a torso - Part I about the Plzeň region. František Palacký enriched Czech statistical-topographical literature especially by his *Popisem království Českého* (1848). Famous historian gave the information according to the region the overview of estates, towns, villages and hamlets (including defunct) with the most important data (numbers of houses and people took from the Census years 1843). The main purpose of Palacký's work was to publish the overview of topographical names in Czech. A remarkable testimony of the growing popularity of statistical surveys at that time is a handbook of church administration of Bohemia and Kladsko by Johann Wanisch (Wanisch, 1836). In fact, the entire range of publications (162 pages) consists of the tables giving information according the state of the year 1833 the overview of parishes (indicating the number of inhabitants, their nationality etc.), monasteries, churches, etc., including tables summarizing the data, according to the dioceses and regions.

¹⁴ See Roubík (1940, p. 51-55).

¹⁵ The author of all this overviews was F. X. Zippe, an employee of Patriotic Museum.

¹⁶ *Království České statisticky-polohopisně popsané* (Praha, 1845).

Also the information about non-Catholic churches are not missing. An interesting result of the statistical activities of the author is for example the table of parishes with the highest number of souls or the division of churches and chapels by the patronage¹⁷. At the same time as Sommer's work was published also a new description of Moravia was elaborated by Rajhrad's Benedictine Gregor Wolný (1793–1871) – *Die Markgrafschaft Mähren, topographisch, statistisch und historisch geschildert* (Wolny, 1835–1842). Even here, an extensive volume¹⁸ is devoted to each region, always containing on dozens of pages the basic information about the region according to the standard outline used by university statistics. The author of those overviews is prof. Albin Heinrich. They are given information about the number of houses, families (probably the flat households), and population, broken down by the gender, religion, and social groups (according to census data from 1834, which were not preserved elsewhere in this detailed sort). The data of health service (numbers of physicians, surgeons, tested midwives and pharmacists), about the industry and crafts (especially in Brno and Olomouc), as well as about agriculture (sowing areas, annual harvest of each crop, herd) are also interesting. Occasionally, there is also performed a spatial comparison using comparative numbers (population density). It is interesting how when characterising the climate of each region, the author pays attention also to variability: There is a table placed at Přerovský region, in which the individual natural phenomena (the greening of gooseberry shrubs, the beginning of harvest, croaking of frogs, etc.). There is also a date (and place) of the first and last observation in the region and “variation range” in days¹⁹. The rest of each volume is devoted after this introduction to the description of the particular towns and estates in principle by a single structure. There are also available published numeric data (like in overviews regions). In the first half of the XIXth century there expanded so-called medical topography in the Austrian monarchy. Their fetus is in the official reports of doctors (regional physics), which they had send to the regional authorities from the beginning of XIXth century according to Vienna ordinance. Report should in addition to inform about the status of medical personnel and institutions, illnesses (particularly infectious) in the past period, vaccination etc., and also it should contain summarized information on meteorological

¹⁷ More than one seventh of churches (from 3090) was devoted to virgin Mary (452), on other places are: St. Wenceslas (191), St. John the Baptist (184), St. Peter a Paulus (168), Holy Trinity (133), St. Nicolas (120), St. John from Nepomuck (116) etc. St. Prokop (51) a St. Andrew (18) belong to the median frequent saint. (Wanisch, 1836, p. 152-153).

¹⁸ 6 parts in 7 books was publish. (2 are devoted to Brno region). Overall description of all country is, similarly as in Sommer's work is missing. Second edition of all volumes followed in year 1846.

¹⁹ In Přerovský region, including also the part of Haná and the area of Beskydy, this difference usually accounts for 30 to 60 days. For other regions the “variation range” is stated at least for the beginning of harvest.

observations, as well as demographic conditions in the particular region²⁰. Provincial protomedic should send the similar health reports to provincial administration at the provincial level. Hospital doctors should regularly report the authorities and political statements about the activities of their institutions and also the rural physicians²¹ were motivated to writing their own medical topography. The first and the most important medical topography is the II volume work about the Prague, written by Old-town' physics Franz Alois Stelzig (1784–1856) – *Versuch einer medizinischen Topographie von Prag I-II* (1824). In this publication author demonstrated unique understanding of the methods of political arithmetic, (and then also in their other publications). Using simple statistical methods in meteorology, which already have had at that time a certain tradition in our lands, is in Stelzig's work improved to greater perfection. Treatise about the Prague climate is accompanied by a large amount of statistical characteristics (observations are processed within 10 years: 1813–1822). From the daily temperature measurement (3-times daily) there are calculated monthly averages (120 in total), the average annual temperature and also ten-year averages for each month. For each year there are written extreme values and maximum change within 24 hours. Similarly there are also evaluated measuring of atmospheric pressure. There are given rates for each year and the average rates for the period of ten years for individual wind directions (total of 8)²². In a similar manner there are also processed data on rain, snow, fog and cloud. In the following chapter about the population Stelzig mentions some classics of political arithmetic. He gives common relative measure for Prague (birth rates, death rates, etc.), which compares with similar values for other European cities. Most interesting are mortality data about the individual (five-year) age groups (classification is more detailed for children age), both in absolute and relative numbers (per 1,000 people); these specific mortality rates Stelzig confronts in table with the available indicators available for Vienna and five other European capitals (p. 74). Author publishes a shortened life tables (only the number of survivors, the source is not mentioned), briefly explains their usefulness, especially for insurance, and shows to readers which conclusions can be done using mortality tables about 40,912 persons born in Prague in the past decade. It is probably the first occurrence of mortality tables in our literature. In the 30s and 40s of XIXth century there were periodically published (especially in the Viennese magazine *Medicinische Jahrbücher*) another contributions by W. M. Streinz, J. F. Müller, A. M. Glückselig and others on health conditions in the regions of Bohemia. There

²⁰ See Zaremba (1964, p. 195).

²¹ See Zaremba (1964, p. 195-196).

²² Most often blew the southwest wind - on average 73 days a year.

were already used common statistical methods for elementary treatise on the climate of the region. Averages for certain time periods are compared with long-term averages, there is also used a variation range (Temperaturbreite). The same situation is in population statistics. Population growth is characterized by indexes and often expressed as a percentage, there is also calculated the average annual increase. Marriage rate, birth rate, mortality, masculinity and stillbirth is characterized by different coefficients, (the authors here regularly pay attention to higher stillbirth rate of illegitimate children) etc. The indicator of health and health status of population in the particular region is also supplemented by various relative numbers, expressing e.g. the size of the territory per one doctor in average, (similar per the healer, pharmacist and midwife).

Conclusion

In this contribution, we described clearly the development of statistical-topographical publications in the Czech lands until mid XIXth century. Our interpretation is as exhausting as it is allowed by the scope of the paper. Statistical-topographical works were sub-discipline, which can be classified on the border of the main direction of the statistics' development. Its authors were statistical amateurs, various scholars of that time - priests, doctors, historians and others. The development of statistical-topographical direction in XIXth century shows how elementary statistical methods gradually became generally known in the intellectual society at that time. The authors of these publications have undoubtedly contributed to further popularization of the foundations of statistical methods in a relatively wide public.

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Contact

Prokop Závodský

University of Economics in Prague, Faculty of Informatics and Statistics,

W. Churchill sq. 4, 130 67 Prague 3, Czech Republic

prokop.zavodsky@vse.cz

Ondřej Šimpach

University of Economics in Prague, Faculty of Informatics and Statistics,

W. Churchill sq. 4, 130 67 Prague 3, Czech Republic

ondrej.simpach@vse.cz