

Appendix 2a

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**Summary of professional accomplishments  
containing a description of research or artistic work and accomplishments, in particular  
those defined in Article 16 (2) of the Act, in Polish and English**

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**DR SŁAWOMIR DRYJA**

INSTYTUT HISTORII SZTUKI I KULTURY, WYDZIAŁ HISTORII I DZIEDZICTWA KULTUROWEGO  
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1. **Full name:** Sławomir Dryja

2. **Diplomas held, scientific/artistic degrees with the indication of the name, place and year in which they were awarded, as well as the title of the doctoral dissertation:**

- Master of Arts in archaeology, Faculty of History, Jagiellonian University, Krakow 1989. Master's thesis: *Analiza numeryczna i próba klasyfikacji liściaków świderskich z podkrakowskiego odcinka doliny Wisły* [Numerical analysis and an attempt at the classification of Swiderian willow-leaf points from the section the Vistula river in the vicinity of Krakow] written under the supervision of prof. dr hab. Janusz Krzysztof Kozłowski, reviewed by: prof. dr hab. Bolesław Ginter.
- Doctoral degree in arts (Archaeology), the Faculty of History, the Jagiellonian University, Krakow, 1995. Doctoral dissertation: *Kultura Komornicka w Małopolsce i na Górnym Śląsku* [The Komornica Culture in Lesser Poland and Upper Silesia], written under the supervision of prof. dr hab. Bolesław Ginter, reviewed by prof. dr hab. Stefan Karol Kozłowski (Warsaw University), prof. dr hab. Janusz Krzysztof Kozłowski (Jagiellonian University).

3. **Information about employment history in research institutions:**

- 1990 – 1995 Doctoral studies at the Faculty of History, Jagiellonian University.
- 2010 – 2011 Lectures commissioned at the Pontifical University of John Paul II in Krakow.
- 2012 – 2014 Assistant at the Department of the History of Culture and Education (since 2013: Department of the History of Culture), the Faculty of History and Cultural Heritage, the Pontifical University of John Paul II in Krakow.
- 2015 (ongoing) Assistant professor in the Department of the History of Culture, the Faculty of History and Cultural Heritage, the Pontifical University of John Paul II in Krakow.
- 2014 (since establishment, ongoing) Head of the Laboratory of the History of Material Culture, History and Cultural Heritage, the Pontifical University of John Paul II in Krakow.

4. **Indication of an achievement according to Article 16 (2) of the Act of 14 March 2003 on academic degrees and titles in arts and science**

a) **title of scientific/artistic achievement:**

A series of publications on the history of the brewing craft in Lesser Poland, with special focus on Early Modern Krakow (16th c. – 1st half of 17th c.)

**b) author, publication title, year issued, name of the publishing company:**

monographs (5 times, numbering as listed in Appendix 3):

[7] Sławomir Dryja, S. Sławiński, *Krakowskie słodownie przełomu wieku XVI i XVII* [Krakow malt houses in late 16th/early 17th c.], Biblioteka Krakowska nr 155, Towarzystwo Miłośników Historii i Zabytków Krakowa, Krakow 2010.

[8] S. Dryja, *Browar Parowy w Osieku. Zarys dziejów* [Steam brewery in Osiek. A historical outline]. Wydawnictwo Naukowe Uniwersytetu Papieskiego Jana Pawła II w Krakowie, Krakow 2017.

[9] S. Dryja, *Słownik biograficzny słodowników, piwowarów i karczmarzy krakowskich 1501-1655* [A biographical dictionary of Krakow malters, brewers and innkeepers 1501-1655], Księgarnia Akademicka, Krakow 2018.

[10] S. Dryja, S. Sławiński, *Mała Encyklopedia piwowarska Krakowa i Kazimierza, w wieku XVI i pierwszej połowie wieku XVII. Studia z dziejów piwowarstwa Krakowa i Kazimierza, z uwzględnieniem problematyki Kleparza i przedmieść* [A brief encyclopaedia of the Krakow and Kazimierz brewing craft in the 16th century and the first half of the 17th century. Studies in the history of the Krakow and Kazimierz brewing craft, including the issues concerning Kleparz and suburbs], Księgarnia Akademicka, Krakow 2018.

[11] S. Dryja, J. Szczerba, *Szkice z dziejów wojnickiego piwowarstwa. Browar Wojnicz 1867 – 1915* [Excerpts from the History of the Wojnicz brewing craft. The Wojnicz Brewery 1867–1915], Księgarnia Akademicka, Krakow 2019.

research articles (10 items, numbering as listed in Appendix 3):

[18] S. Dryja, *Technologia produkcji słodowniczej i piwowarskiej w średniowieczu i na początku ery nowożytnej w Krakowie* [Malting and brewing production technology in the Middle Ages and the beginning of the Early Modern period in Krakow], *Archaeologia Historica Polona*, 18, 2009, pp. 185–208.

[2] S. Dryja, *Krakowskie miary piwowarskie w XVI wieku* [Krakow brewing measures in the 16th century], *Kwartalnik Historii Kultury Materialnej*, 59 (1), 2011, pp. 3–25.

[23] S. Dryja, *Kobieta w krakowskim przemyśle słodowniczo-piwowarskim doby wczesnonowożytnej w świetle testamentów i dokumentów podatkowych* [Women in the

Krakow malting and brewing craft in the Early Modern period in the light of last wills and tax documents], *Rocznik Lubelskiego Towarzystwa Genealogicznego*, 4, 2012, pp. 92–112.

[27] S. Dryja, T. Graff, *Matys Pieniążek. Wadowiczanin, piwowar krakowski z XVI wieku* [Matys Pieniążek, a Wadowice-born brewer from 16th century Krakow], *Wadoviana*, 16, 2013, pp. 7–24.

[31] S. Dryja, S. Sławiński, *Przekształcenia zabudowy „piwowarskich” posesji nr 20 i 22 przy ulicy Szewskiej w Krakowie w XVI i XVII wieku* [Conversions of the buildings on premises no. 20 and 22 allocated to brewers in Szewska street, in 16th and 17th century Krakow], *Rocznik Krakowski*, 82, 2016, pp. 33–44.

[5] S. Dryja, *Podatki i opłaty pobierane od piwowarów krakowskich w XVI i pierwszej połowie XVII wieku. Reforma czopowego z czasów panowania Stefana Batorego i jej wpływ na piwowarstwo krakowskie* [Taxes and charges collected from Krakow brewers in the 16th century and the first half of the 17th century. Reformed liquor excise tax and its impact on the Krakow brewing craft], *Roczniki Dziejów Społecznych i gospodarczych*, 78, 2018, pp. 67–94.

[32] S. Dryja, S. Sławiński, *Posesja przy Siennej 16 / św. Krzyża 2 w Krakowie od XVI do XIII wieku. Rekonstrukcje zabudowy od słodowni do budynku szpitalnego* [Real property at Sienna 16 / Św. Krzyża 2 in Krakow from the 16th to 18th century. Reconstructions of the buildings from the malt house to the hospital], *Rocznik Krakowski*, 83, 2017, pp. 57–84.

My contribution to the work involved performing half of the archive and library research and preparing the text based on the research. My share in the work, as confirmed by the co-author, is 50%.

[4] S. Dryja, S. Sławiński, *Kamienica przy ul. Krakowskiej nr 30 na krakowskim Kazimierzu – jej historia i rekonstrukcja, w. XVI i XVII, działalność piwowarska w okresie świetności domu* [Tenement house at Krakowska 30 in Kazimierz: its history and reconstruction, 16th and 17th c., brewing operations in the house’s heyday], *Studia Sandomierskie*, 24, 2017, pp. 79–108.

[33] S. Dryja, S. Sławiński, *Krakowskie dzieje piwowarskiego rodu Latosów i rekonstrukcja zabudowy ich posesji przy ulicy Szewskiej nr 23* [Krakow history of the Latos family of brewers and the reconstruction of the buildings on their real property at Szewska 23], *Rocznik Lubelskiego Towarzystwa Genealogicznego*, 8, (2016) 2017, pp. 49–74.

[34] S. Dryja, M. Janowski, *Zapotrzebowanie na energię krakowskiego przemysłu piwowarskiego w XVI i I połowie XVII wieku w świetle kwerendy archiwalnej i symulacji procesu spalania w piecach bezkominowych* [The Krakow brewing craft’s energy

requirements in the 16th century and the 1st half of the 17th century in the light of archive query and combustion process simulation in chimney-less kilns], *Res Gestae*, 6, 2018, pp. 145–176.

Patents (1 item, numbering as listed in Appendix 3):

[96] S. Dryja, M. Janowski, P. Czerwiński, M. Dobija, *Sposób filtrowania zacieru i filtr kasetowy [Method for filtering a mash and the cassette filter]*, priority number: PL20150415430 201151221, abbreviated: PL415430 (A1), international classification: B01D29/01; B01D29/50; B07B1/04; B07B1/46; C12C7/165; C12C7/17.

**c) an overview of the research/artistic objective of the above-listed work(s) and results achieved together with the discussion of their potential application:**

I have dealt with the history of brewing since 2005 when I started extensive search queries in archival resources (the National Archive in Krakow, the Scientific Archive of the Polish Academy of Sciences (PAN) and the Polish Academy of Learning (PAU), the Central Archive of Historical Records in Warsaw, private collections – mainly in the possession of the Rudziński family). My attention has focused on the Krakow brewing craft in the 16th and the first half of the 17th century, brewing in smaller municipal centres and the development of industrial brewing, which started around mid-19th century.

In 2007, during the “Homo Fabricator” conference, I gave a lecture on technological aspects of brewing/malting operations in the Middle Ages and the Early Modern period. This subject was discussed in the article entitled *Technologia produkcji...* [18]. The article was based on comprehensive resources supported by practical knowledge, as in that period I already was an active home brewer myself. The conclusions which can be drawn from analysis of resources were consulted with a large group of experts, i.e. brewing engineers. In the article I paid attention to the separation between the malting and the brewing craft. In fact, malt production is an area not well-known by historians, hence frequent erroneous interpretations or misrepresentations. I also stressed that Krakow beers in the 16th and 17th century were made mostly of wheat malts. I characterised raw materials used in brewing: malt, water, hop and yeast. When discussing yeast I also underlined that, contrary to commonly held opinions, mediaeval brewers were able to consciously use its properties. The subject of yeast, mentioned in the article, was elaborated on and analysed in depth in subsequent years [7, 9, 10]. An important part of my work was to focus on sanitary conditions in historical breweries, considering that beer is a beverage sensitive to microbiological contamination. I indicated how the problem had usually been dealt with, and that in most cases it was possible to obtain a high-quality drink. In the second part of the article I characterized the spatial structure of Krakow’s brewing craft, underlining the fact that records from that period contain entries of stand-alone breweries as well as instances of a malthouse

combined with a brewery on the same premises. I highlighted the existence of a separate group of standalone maltings and the fact that all of the equipment and buildings constituted part of a high-density pattern of blocks and buildings. Using several examples, I characterized Krakow's maltings and breweries, their functional layout and position in Krakow's urban structure. On the basis of the knowledge of technology used back then, the functional layout of breweries, as well as sources from the period, I described the foundations of the technology, stressing its surprisingly high level. An elaboration on the topics led to subsequent studies [9, 10, 11, 34, 96].

In 2010, together with a small group of enthusiasts I established the Polish Association of Home Beer Makers (*Polskie Stowarzyszenie Piwowarów Domowych*). The association triggered a change process on the Polish brewing market, which was with time dubbed the 'beer revolution'. In less than a decade, several hundred craft and contract breweries making various types of beer have been established, including those that fall within the hugely popular 'historical brewing' trend. An important part of the undertaking was to educate the brewing community, stressing the need to return to the roots, including the wealth of the Polish brewing craft's tradition [100-105].

In the book *Krakowskie słodownie...* [7], written together with Stanisław Sławiński, we presented an almost unknown subject related to malt production, one which was given a cursory mention in the article referred to above [18]. The work was based on an extensive query of sources. Already in the introduction we formulated a thesis that the production of beer had acquired the characteristics of industrial manufacturing, whereas the malting craft was perhaps the only craft that left a clear mark on the architecture of the city. In subsequent chapters we discussed malt production (as well as related terminology), spatial layout of the craft, the production of beer and the equipment in a typical Krakow brewery. The book presents a catalogue of facilities (67 items), characterizes them in detail and locates them in the city's architectural layout. We distinguished large maltings, with footprint and dimensions of a typical large tenement house, located within the frontage section of the street; medium-sized maltings, corresponding to a large back-building development, situated deep in the property or in its appendage overlooking the cross street; small maltings of the size corresponding to an outbuilding or constituting part of a compound on a larger property. In case of the latter, individual functions of maltings could have been dispersed across various buildings. We also described the functional layout of large, medium-sized and small maltings. Detailed studies were supported with reconstructions in the form of drawings prepared by the authors, as well as descriptions of each piece of equipment. An important part of our discussion was the supply, distribution and consumption of water in maltings and breweries. We demonstrated that breweries used water supplied by well-developed waterworks, whereas maltings mainly drew water from wells. In addition, we analysed the system of removing waste water from the brewery's premises and outside of the city walls. We performed detailed calculations concerning the malt- and beer-making process, once again stressing that Krakow was one of the largest producers of malt and beer on the

European continent. Towards the end of our study we pointed out that the first signs of crisis appeared already in the late 16th century. We presented main causes of the process. We also discussed the beginnings of the distilling industry's development.

Another subject I gave considerable attention to was weights and measures. The departure point for my research was the proposition that Krakow's brewing craft was regulated by laws which sanctioned a far-reaching normalisation. This was caused by multiple factors. Of fundamental significance was the system of charges and taxes on alcohol goods (particularly beer). The normalisation of production made the system of collecting such receivables simple, fair and easy to control: each brewer paid them in identical amount. On the other hand, one must remember that many systems of weights and measures were used in Poland. For this reason, the one described for Krakow is not of universal nature. It may be applied to other cities and towns of the Republic of Poland only on condition that it allows for their unique and specific features. The results of my research are presented in the article entitled *Krakowskie miary...* [2]. Certain topics were elaborated on in my later works [5, 10, 34]. In the aforesaid article I also discussed complex issues related to an attempt at the unification of weights and measures. Moreover, I emphasized that some of the proposed regulations became effective, although it was possible only in the early 17th century [10]. I reviewed state-of-the-art of the then weights and measures system and came to the conclusion that it contains omissions and inconsistencies. Clarification of such doubts allowed me to follow up with the subject of converting historical measures using contemporary units. Being aware of the shortcomings and limitations of the method, I emphasized that the obvious value is the possibility of comparing Krakow's brewing industry with other (local and leading) centres of beer-making in Europe during that period. I presented a consistent system of measures used for loose materials (from quart to *ćwiertnia*), along with a their conversion to contemporary measures. Next, I outlined the system of measures for liquids, indicating that the quart and the *garniec* (roughly a gallon) were units common for both systems (incidentally debunking the thesis on the existence of different types of *garniec*, used separately for loose and liquid materials). By calculating the quantity of *garniec*, it was possible to specify the measure of the barrel (called *achtel* in Krakow) as well as a half, a quarter, or a third of the measure. I also analysed the gristmill measure system, which was different to that used in towns. It was supplemented in my further studies [10]. Next, I analysed consumption measures. It proved very important to determine the volume of the quart (nearly 0.7 litre), a basic consumption measure. Towards the end of the study I provided calculations of the volume of a single gyle (in litres), their annual quantity (in consecutive tax years) and, consequently, the city's global production figures. The brewing industry played a leading role in Krakow, in terms of human potential, capital involved and tangible effects in the form of charges and taxes which made their way into both municipal and royal budgets. I believe the study is a valuable contribution to the economic history of the Republic of Poland in the 16th century.

In spite of a thorough research process, no information about the quantity of wood used in the beer production could be found. The firewood measure system was also unclear. Faced

with a conspicuous lack of data on the subject, together with dr inż. Mirosław Janowski we made an attempt to calculate the quantity on the basis of a mathematical simulation of the combustion process – which, in the analysed case, took place in chimney-less kilns. To this end we used the experience of a heat engineering specialist from the AGH University in Krakow. The results were presented in the article *Zapotrzebowanie na energię...* [34]. The opening section of the article contains a detailed discussion of the measures applied to rafted timber as well as the principles of trade in such raw material, based on an earlier study by Jerzy Wyrozumski, supplemented with isolated source notes. Most significant findings include the calculation of the scale of timber rafting and trade activities (which for 1570 could be quantified as 70,000 tree logs). In the course of further considerations we formulated thesis that one *dziesiątek* (a measure of timber quantity) consisted of six bunches or eighteen carts. We analysed in detail the design of brewery kilns and their potential heat efficiency. The proposition that the production process used a repeatable quantity of wood [2] served as the departure point, on the basis of which we performed multi-variant calculations according to a consistent methodology. As a final result, we presented several key findings. Brewing was an energy-consuming process: a single production cycle used from 1.9 to 2.5 cubic metres of wood (which corresponds to 900 to 1300 kg). The article used a method of verifying historical sources through theoretical analysis of a simulated combustion process; such method is of universal nature and may be applied in calculations of energy consumption characteristics of other crafts using wood-burning kilns of various designs (malsters, bakers, coppersmiths, blacksmiths etc.) The article is an interesting example of the possibility of making calculations and simulations, which support historical knowledge in the case of insufficient resources.

I continued to expand my research on economic history with the subject of charges and taxes. The production of alcohol (especially beer) had been subject to many levies collected for the benefit of royal and municipal tax offices. Suffice it to say that they constituted a substantial, sometimes prevailing, part of revenue. I became particularly interested in the effect of the amount of such levies on the condition and status of the brewing craft in the 2nd half of the 16th century. The results of the study were presented in the article *Podatki i opłaty pobierane od piwowarów...* [5]. When discussing individual levies, I noticed that they could be classified either as charges or taxes. The liquor excise tax (Polish: *czopowe*) was an indirect tax charged in the price of the commodity. It was introduced late, i.e. in the 2nd half of the 15th century. The tax was collected together with an additional fee of 1 ternar. The latter, as a payable which was imposed along with a national tax, should be treated as an administrative charge rather than a tax in the strict sense. In Krakow it was called *ternarii ducillorum* or *kwartnik* per gyle. With time, the fee acquired intrinsic characteristics, unrelated to the liquor excise tax; its nature and origin remained undefined (for lack of ability or good will). Beer making was also subject to business charges imposed by the city. These included: *braksatura cerevisiae alias rorgelt*, in short: *rorgelt* (later referred to as *wodne*), levied on water consumed per single brew and *groszowe* (*grosz ratuszny*, a city hall charge),



introduced in 1589. The amount of the liquor excise tax had a significant impact on total tax burden. In 1578, during the reign of Stephen Báthory, tax burden related to brewing rose exponentially. Meanwhile, we may observe a drop in production volumes and number of breweries. In the closing section of my study I expressed the view that the reform of the liquor excise tax did not trigger a crisis of Krakow's brewing craft, and probably was not the root cause of the phenomenon, as the warning signs had been noticeable earlier. However, I concluded that the slump in Krakow's brewing craft had started earlier than in other European countries. It also predated the economic crises across the entire Republic of Poland in the 17th century. For this reason I formulated a thesis that excessive royal fiscalism became a kind of catalyst, which accelerated and exacerbated the decline of the craft. I consider the article an important follow-up to previous studies on measures used in Krakow's breweries. They fit in with my interest in Early Modern economic history.

Another area which became the subject of my interest is the role of women in Krakow's malting and brewing industry in the 16th and early 17th century. It was inspired by a view expressed by many researchers that in the early Middle Ages the production of beer for household purposes was the exclusive domain of women. The importance of women in the Krakow industry is confirmed by tax data sources as well as other records, including numerous testaments. The results of my research were presented in the article *Kobieta w krakowskim przemyśle...* [23]. In the article I presented historical determinants of the brewing craft's development, the legal basis, and a comparison of Krakow (or more generally, Republic of Poland) with other leading beer-making countries. I cited the percentage of female brewers; in the 16th century it ranged from a couple to more than a dozen per cent. Having analysed the duration of the professional career of a typical owner of a brewing facility, I came to the conclusion that almost 40% of them had quit before a year passed (because of re-marriage, transfer of the facility to relatives, leasing out or selling the property, or death). Still, 5% of them kept their business for longer than 25 years. I also demonstrated that breweries managed by women were more stable. Using multiple examples, I showed the mechanisms whereby they functioned, which were frequently surprising and contrary to widely-held stereotypes. Professionally active women amassed considerable wealth, traded freely in real property, invested in their children's education and in the development of their facilities. Their last wills contain substantial bequests for charitable or social causes, or church foundations. They were an important part of the brewing industry.

The article *Matys Pieniążek...* [27], written together with dr Tomasz Graff, has a slightly different character. It is a biography of Matys Pieniążek, a brewer from Wadowice, who became licenced by the city Krakow in 1532. His story was presented against a broad backdrop of social relations both in his home town and Krakow. The article tells a rather typical story of a stranger from another town, who, thanks to his hard work, undergoes a transformation from a hired hand through the lessee of premises with beer-making equipment to the owner of real property.

Another area of my interest is research on urban transformations of spatial arrangements in the context of malt and beer production. In the article *Przekształcenia zabudowy...* [31], written together with Stanisław Sławiński, I presented the history of brewing in a tenement house in Szewska street. The house no longer exists in its original form, and its detailed description can be found in previously unknown documents. The southern frontage the street contains two adjacent sizeable tenements numbered 20 and 22, both built quite late on older walls, partly preserved basements and within boundary walls of higher floors. Each of those tenements was collated from two older areas, which in turn were formed from three previous real properties. Older buildings frequently became part of the basic construction fabric of historical Krakow, with origins back in the Middle Ages, perhaps even dating back to the times of Krakow's Great Charter of 1257. Decoding the mechanism behind rather unconventional transformations of early 1580s allowed us to finally ascertain the number of houses in the southern frontage of the street, and thus to understand tax records (dating back to 1542) which had previously been difficult or even impossible to interpret correctly. The rear boundary of the premises' backyard adjoined a large plot (cemetery) of St. Anne's Church, back then still in Gothic style. Thanks to previously unknown records it was possible to determine that the church had been located in proximity of those premises. The finding enabled a correction of its earlier reconstruction – until then it was assumed to have been located closer to Św. Anny street. The considerations presented in the article are an example of the possibilities of reconstructing both urban development and human activities in the period based on analysis of sources, in this case concerning financial matters, construction activities, and beer and malt production. Of similar nature is the study *Posesja przy Siennej...* [32], which was also written together with Stanisław Sławiński. It presents, in a broader context, the history of the premises on the corner of Sienna 16 / Św. Krzyża 2, which changed hands several times, and which today is the seat of the National Archive in Krakow. Based on the results of field studies, previous research and archived documents, we reconstructed the building process and ownership changes in the 16th to 18th century, focusing on the role of the Wuzanowska malthouse, which played an important role in Krakow's brewing industry until mid-17th century. The study made use of a research method similar to the one described in the case of the aforementioned premises in Szewska street.

In another article, co-published with Stanisław Sławiński, transformed spatial arrangements were referenced to another city of the Krakow agglomeration, namely Kazimierz. In the article entitled *Kamienica przy ul. Krakowskiej nr 30* [4], we described the history of the tenement situated in today's Krakowska street at number 30. The work was based on field research as well as archive search query in Kazimierz's municipal records at the National Archives in Krakow. Of key importance is the finding that the tenement was built on a plot marked off from rear sections of the premises located next to the Market Square, which dated back to the times of city's demarcation and settlement plots (starting 1335). This happened in ca. mid-16th century. At this juncture it is worth noting that in that period the brewing craft in Kazimierz ranked as high as that of Krakow. For this reason the

Krakow agglomeration, comprising Krakow, Kazimierz and Kleparz, contributed about 60% of liquor excise tax revenues from the entire Krakow Voivodeship. Equally important is the fact that in the 2nd half of the 16th century there was a significant slump in the production in Kleparz and a decrease in production in Krakow, with a noticeable rise in brewing operations in Kazimierz. The structure of the brewing craft in Kazimierz was different from that of Krakow. Most Krakow's breweries and malthouses were situated in blocks of buildings next to city walls; they were rare in the blocks adjacent to the Market Square (i.e. in high streets), disappearing from there as early as in the late 16th century, and they were entirely absent from the Market Square as such. Meanwhile, breweries and malthouses functioned in certain premises adjoining the market square in Kazimierz. Development transformations and changes in the ownership of the house number 30 were discussed in a broad context of the entire block of buildings. Despite fundamental changes in structure, original plot boundaries (including the module delimited as result of the municipal charter) are characterised by considerable stability. In the case of the real property in Krakowska street, we managed to prove the above proposition following field studies and painstaking analysis of sources.

The considerations presented in the three articles referred to above are an example of the possibilities of reconstructing both urban development and human activities of the period based on analysis of sources, in this case concerning complex changes in ownership and construction, supported by field studies. The changes are placed in the context of beer and malt production. The issues discussed are related to a broadly-defined subject of the social topography of the centre of Krakow and Kazimierz in the age of the First Republic of Poland. Accordingly, we treat the reconstructions as an important contribution to a map of these cities at the end of the third quarter and the beginning of the fourth quarter of the 16th century.

The research outlined above was continued in connection with the history of one of the most important brewer's families active in 16th century Krakow. The studies were summarized in *Krakowskie dzieje piwowarskiego rodu Latosów...* [33], an article co-authored with Stanisław Sławiński. Using past experience, we placed the history of three generations of the Latos family in a broad context, analysing in detail the functional layout and changes in the house and premises which belonged to the Latos family and which were situated in Szewska street. The progenitor of the family was Tomasz Latos, who in 1522 came to Krakow from Rokycany, a town in Bohemia situated over a dozen kilometres east of Pilsen. The basis for the study was derived from documents from the National Archive in Krakow as well as the Archive of the Polish Academy of Sciences (PAN) and the Polish Academy of Learning (PAU), in particular the collection of last wills of consecutive family members. Over the most of the 16th century, the Latos family owned the property in Szewska street, formed by combining one of their tenements (western section of the premises) with a converted wooden house, situated on a relatively small lot purchased from a neighbour (eastern part of the premises). The documented fact allowed us to comprehend entries in tax records, the interpretation of which had previously been difficult. In 16th century Krakow, the permanence of the brewer/malter profession, handed down three generations of the Latos

family, is a quite extraordinary. Undoubtedly, it is worth noting that after the death of a male member of the family, the trade was taken over by the widow. This principle ensured the stability of the family-owned business, which was inherited by the next man in the lineage. In total, six members of the family dealt with the brewing craft. In the study, we created the concept of a brewer's/innkeeper's business. Such business was characterised by complex operations, strictly linked to municipal premises and the buildings on such premises, and produces malt, beer (and frequently vodka), had a license to sell alcoholic beverages and offered accommodation. The excerpt from the history of the Latos family and the tenement in Szewska street presented in the study is an interesting contribution to the explication of the effect of intensive beer production in the 16th and 17th century Krakow on the choice and development of its location. The article is another example of the capabilities offered by a detailed analysis of sources and results of field studies, which, coupled with knowledge of the brewing craft, allow us to precisely recreate a fragment of the 16th century city.

My interest in the 19th and 20th century brewing industry was summarised in my book entitled *Browar Parowy w Osieku...* [8]. The book refers to earlier popular science works published since 2007 [97]. I presented the story of the Osiek brewery against a wide socio-historical background, comprising an outline of the history of the town and the oldest data concerning the land estate and the brewery which operated on it. More recent accounts concerning the estate are related to families Larysz and Rudziński. The Rudziński family, who was closely connected with Osiek in the years 1885–1948, left a marked trace on the brewery. As owners, they oversaw the development of fish ponds, the home farm and the industrial facilities. The Osiek brewery was an important component of their estate. It operated as a sole proprietorship, separately from other facilities which functioned as Zarząd Dóbr i Zakładów Przemysłowych Oskara Rudno-Rudzińskiego [The Administration of Oskar Rudno-Rudziński's Estate and Industrial Facilities]. The brewery remained separate from other facilities after Oskar Rudziński's death (in 1919) until as late as 1937, when it became property of Andrzej Rudziński (one of Oskar's sons). When World War II broke out and Germany invaded Poland, Osiek was annexed to the Third Reich. The estate of the Rudziński family was confiscated and put into German administration. The brewery was leased out to a factory in Bielsko and subsequently closed in 1942. It was spared in the military operations of January 1945. Later on, its former owner was authorized to open the facility. The operations had barely begun when it was announced that the Rudziński family's land property would be nationalized in accordance with the decree on agricultural reform. As it soon turned out, the State Treasury confiscated not only the land, but also the industrial establishments such as the brewery, the sawmill, the mill and the distillery. However, according to applicable laws, the brewery was not part of the land estate and eventually became disconnected from the latter in 1937. As a result of the litigation, the brewery was returned to its righteous owner. It was put in operation by a company set up for this purpose in July 1947. In March 1949 the brewery was unlawfully seized by the authorities and handed over to the Polish Academy of Learning, which at that time held the remainder of the nationalized property. After its suspension, the

ponds, the home farm and industrial facilities became property of the National Breeding Farm. The under-invested brewery was closed down in 1977. In 1990, Edward Rudziński, son of Andrzej, applied for the restitution of the property in Osiek. In spite of a fairly straightforward nature of the case, it took him years to regain all parts of the estate. Unfortunately, some unlawfully seized goods could not be returned. Meanwhile, the derelict buildings were ordered to be pulled down. What remains from the former brewery is the malthouse, used as a feed mixing plant and storage facilities. The tale of the Osiek brewery is set in the complicate history of the 19th and 20th century and related to an important subject of the economic development (sometimes decline) of Polish land estates. As the reviewer of the study prof. dr hab. Piotr Franaszek pointed out, the book *is of enormous significance to studies on the economic history of Polish territories in the 19th and 20th century*.

I dealt with the past of the brewing craft to an even broader extent by analysing the history of the former Wojnicz starosty and the town of Wojnicz, situated on the cusp of the Carpathian Plateau and the Sandomierz Basin of river Vistula, on the border of former Krakow and Sandomierz Voivodeships. It is a place where the history of town, manor and industrial brewing industry intertwine, with industrial brewing originating in the 2nd half of the 19th century on the foundations of the Dąbski family's land estate. The search queries and the review of sources (partly published thanks to the effort of the Society of the Friends of the Wojnicz Region) bore fruit in the form of the book entitled *Szkice z dziejów wojnickiego piwowarstwa...* [11], co-authored with Jakub Szczerba. A unique monograph of the Wojnicz brewing industry constitutes a significant portion of the work. To date, none of the small towns in Lesser Poland has been covered in a broader and separate study on the history of the brewing craft and industry. Extant sources present an ambiguous picture, one that is difficult to interpret. As burgesses had the right to make beer freely, guilds of brewers were established relatively late, whereas in many centres (including Wojnicz) they were absent altogether. For many burgesses brewing was a secondary occupation, with specialist brewers, experts in the field, hired to make beer. Therefore, owners of equipment did not display a particular interest to establish guilds, and hired hands were not entitled to. According to many historians, this degraded the actual status of the brewing craft, treated as pastime rather than an occupation which had significant impact on the economy and development of the town. We characterised the structure of the brewing craft in 16th century Wojnicz, discussing regulations, spatial determinants, the equipment of an average brewery, production volumes and the amount of taxes paid (this particular factor placed Wojnicz in the group of medium-sized production facilities). We were able to establish the location of most breweries in-field. Further in the book, we portrayed the beer craft in late 18th century and early 19th century Wojnicz. We also described the brewery, which was situated in the Zamoście manor. In the second half of the work we concentrated on the story of Władysław Dąbski, founder of the industrial brewery, his family and descendants, in particular Zygmunt Jordan, successor of the Wojnicz estate, and at the same time its last owner. We outlined a wide economic background, emphasizing that the growth of manor breweries was a typical feature of farming in Galicia in

late 18th century, and even more so in the early 19th century. Breweries, frequently combined with distilleries, operated within land estates, supported by their own raw materials and workforce. To owners, they were an additional source of income, derived on the basis of propination laws. We supplied detailed characteristics of what a manor brewery was, as well as its origins. We also described transformations which took place in the in the brewing industry in the 2nd half of the 19th century. The establishment of an industrial brewery in Wojnicz perfectly matched the conditions of the period. Further in the book, we outlined the facility's operations and the technologies applied; we also managed to quite precisely recreate the network of its suppliers and recipients, employment structure and the economic aspect of the business. Despite being a large-scale investment, the brewery failed to obtain the market position it deserved. After Dąbbski's death there was no replacement for his passion, energy and expertise. The time when Zygmunt Jordan was the owner was the time of incessant financial problems, soaring debt, pledges, unpaid loans, and, consequently, threats of bailiff auctions and attempts to sell the property. On the other hand, it was the time in which a number of significant, if expensive upgrades and modernizations were implemented. Destruction during the war in 1915 and shortage of funds for reconstruction precipitated the closure of the brewery. All that today remains of the brewery is two underground fermentation plants, a small portion of the ground floor with a basement in which the malt house operated and the ruins of the dam on river Więckówka. Today, all the facilities belong to private owners.

In-depth practical studies led to a program implemented in liaison with microbiologists with the University of Silesia, which involved obtaining yeast samples from the basements of former Krakow breweries. In adverse conditions, yeast can survive hibernating over several centuries, forming colonies on old plaster, slurry, brick and stone. The use of yeast in the brewing craft in the Middle Ages and at the beginning of the Early Modern period has long been the subject of my interest as a researcher. I repeatedly pointed out that the nature of yeast had been perfectly known by the brewers, who were able to use it in practice [18]. Obviously, they did not consider them living organisms (in botanical terms, those single-celled microbes are classified as fungi). Several yeast strains were successfully isolated from collected samples. The most promising culture growth was selected for further research. It was analysed and tested in laboratory conditions. The profile and characteristics of the yeast culture suggested that it was likely that the culture had been used for wheat beer fermentation, i.e. the types of beer made in Krakow for centuries. The strain was registered (in the Biowar program) and used for production – in home brewing conditions. The outcome was encouraging sufficiently for the ReCraft brewery from Świętochłowice Śląskie to make a professional brew. The resulting beer was called “Historyczne” and marketed accordingly. At the same time, I took steps to revive the historical Krakow beer; a traditional yet long discontinued brewing style. Its name, based on historical sources, is Krakow White Beer (*cerevisia alba cracoviensis*). Steps were taken to register the trademark. The program is carried out together with employees of the Agricultural University in Krakow under the name

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“Cervisia Alba Cracoviensis Instaurativa”. The intention of the undertaking is to revive the forgotten legacy of the Polish brewing craft.

Many years of search queries, studies and research on Krakow’s brewing craft led to the writing of the work book titled *Słownik biograficzny słodowników, piwowarów i karczmarzy krakowskich...* [9]. The book contains an exhaustive introduction and almost 1400 biographical entries. The work is based on tax records containing entries on taxes collected from Krakow brewers since 1544. When analysing the documents I noticed that most of the records carry topographical information. Their layout stems from the *schoss* tax entered in the records, although *schoss* records refer to a single city block and (nearly) all real properties in the city, whereas the brewing craft registers were compiled for the entire city, making a note only of some brewers’ properties. Any topographic interpretation would therefore be impossible without consulting other sources, including records of *schoss*, *stróżne* (a payment charged in lieu of the former duty to serve as a guard of the city) and *runie* (a tax collected for the use of waterworks), supplemented with information from real property supervisors’ registers and city councillors’ registers. As a result, I was able to obtain a complete set of addresses of brewers’ real properties (from 1588/89 and then from 1604 to 1655). This obviously gave me the opportunity to analyse changes in the structure of the brewing craft within Krakow city walls. I focused on first three real property supervisors’ registers. The most valuable parts of the records contained in those registers are construction descriptions of inspected buildings, including production facilities such as malthouses and breweries. They were often described along with equipment, including fixtures (kilns, chimneys, water equipment) and fittings (tuns, tubs, wort troughs, kettles). Such descriptions provide an excellent basis for identifying the location of a brewery or a malthouse on the plot, their size, building material, number of floors, dimensions, floor plan or furnishings. To a limited extent, I also used city councillors’ registers. Due to the considerable volume of data, I analysed a collection of last wills of persons with connections to the Krakow brewing industry, complete with documents from testament registers and documents from the collection of last wills of Krakow burgesses included in the so-called ‘Smoniewski Files’. In total, I managed to access 222 last wills. Furthermore, I used the city councillors’ registers to note down certain transactions involving the sale/purchase of real property, contracts and financial records; this, however, did not exhaust their research potential. I also analysed municipal licence registers. An important source can be found in rate specifications (price lists) regulating prices of common foodstuffs and other commodities made by Krakow craftsmen. When studying family connections, I could not omit church registers (wedding registers from St. Mary’s Basilica and St. Anne’s Church). I also went through lists kept by religious confraternities, in particular the Archconfraternity of the Holy Scapular at the Carmelite Fathers’ Church in Piasek and the St. Anne’s Confraternity at St. Anne’s collegiate church. I managed to obtain supplementary data by reviewing liquor excise tax on wines, *szrotowe* (beverage transport fee), private bills, personal letters as well as guild files of Krakow innkeepers, malters and brewers. The guild files are far from complete, while surviving material, for the most part,

covers later periods. Obviously, I also included sources published in printed form. Biographical entries were presented according to a consistent pattern, containing (in the most advanced form) eight items.

In a broader and slightly different context I summarized knowledge obtained on the brewing craft in Krakow, Kazimierz and Kleparz in the book *Mała Encyklopedia piwowarska Krakowa i Kazimierza...* [10] written together with Stanisław Sławiński. Our intention was to familiarize the readers with the overall subject of Early Modern brewing industry, particularly the information documented in source records in two major cities of the Krakow agglomeration, i.e. Krakow and Kazimierz, although Kleparz is also present in the work. The publication is centred around the burgeois brewing craft. It may be considered a summary of state-of-the-art. The encyclopaedia's entries contain information on brewing technologies and beer types, raw materials used, organisation of production, including malt grinding and resulting levies and taxes. In addition, we discussed the subject of weights and measures. Descriptions of equipment used by brewers and malters together with explanation of their applications are a significant part of the publication. Such passages are placed below entries which are often quoted directly from 16th and 17th century terminology. The entries contain references to people – city dwellers and visitors – producers and sellers, as well as consumers, of beverages. We put special emphasis on the urban and architectural context, describing the locations of breweries, malthouses and inns within respective premises and the buildings which housed such facilities. The water supply and sewage equipment is a considerable problem described in the encyclopaedia. Some entries can be regarded as autonomous monographs. As the reviewer of the book prof. dr hab. Bogusław Krasnowolski noticed: *The chapter on malt and beer production in the context of Krakow's and Kazimierz's spatial and construction determinants contains a valuable summary of state-of-the-art on the post-charter layouts of both cities and their subsequent adaptations, conversions, partial destruction (which particularly concerns Kazimierz after 1655). Such an in-depth study provides an indispensable background for all social and economic phenomena occurring in both cities, also in the case of brewing, as breweries, malthouses, inns were in fact, as proved by the authors, ingrained in the structure of many city-centre, burgeois dwellings. A fundamental part of the work is comprised of alphabetically-listed entries about the brewing craft. Their preparation required that the authors possess expertise in diverse areas.* On the one hand, the work concludes a certain stage of the research. But it also opens many themes, which are originally noticed and defined in the book.

A combination of historical knowledge and practical skills yielded a number of studies on the possibility of applying mediaeval techniques in modern brewing. One of them is a patent titled *Sposób filtrowania zacieru...* [96]. It was developed together with dr inż. Mirosław Janowski from the AGH University in Krakow for the purpose of Zakłady Mięsne "Dobija" in Żywiec, a meat company which planned to open a brewery. The aim of filtration is to separate liquid wort containing dissolved draff (spent grain) from the mash. As emphasized in many textbooks, this seemingly simple process is in practice time-consuming and problematic. The



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wort can be separated from spent grains in many ways, of which the most popular one involves filtering in a lauter tun. Sometimes whirlpool vessels or mash filters are used for this purpose; in modern brewing, however, we notice a tendency to abandon such methods, with traditional lauter tuns are making a comeback. A lauter tun is a cylindrical steel vessel of a very massive structure. Its key component is a filter screen, stretching over the entire bottom of the tun. The screen is made of segments, supported around the tun's circumference with a narrow strip, and in the centre with a disk, which extends to form the shaft of the mixer (agitator). After transferring from the mash vessel, the mash slowly settles without the brewer's intervention. Heavier fractions of the mash, including hull, deposit faster, forming a natural filtration layer for lighter particles to settle. The layer has a doughy consistency and poor permeability. By force of gravity, the wort flows down the bottom of the tun to the brewing vessel. Certain issues which make the process longer may arise during filtration; they result from the mechanical composition of the grist, its fragmentation, malt quality, uneven distribution of the spent grain layer on the screen, incorrect height of filtration deposit or the hull being 'stranded' at the edge of the tun. The extract obtained from the malt of non-hulled grains, of which wheat is the most significant for the brewing industry, is especially problematic in filtration. Higher wheat malt content makes it necessary to use additives such as (neutrally flavoured) rice hull. Still, in practice the filtration process is very difficult and unpredictable. A disruption in the operations of the brewhouse obviously has a negative effect on the economy of production. From the Middle Ages until the late 17th/early 18th century, Krakow (and most of the Republic of Poland) made almost exclusively wheat beer. The principle of the filtration process did not differ from the presently used, although thanks to the then technology it went without major disruptions. The lauter tuns were made of wood and had a false (double) bottom. The upper bottom was drilled through and strewn with plaited straw prior to filtration. Spent wheat penetrated into the straw layer (even down to the depth of 20 centimetres), forming a 'friendly' filtration deposit. In today's designs, placing the straw directly on the screen would be impractical. As a light material, the straw would rise to the surface, whereas the removal of spent grain mixed with the straw would be virtually impossible. The use of permeable metal filtration cassettes enclosing the straw helped to optimize the process of filtering the mash obtained from non-hulled malts (above 30% batch). The cassettes may be filled with parboiled barley, wheat or rye straw, natural or cut. The design which became the basis for the patent was used in a custom-built brewhouse, which has been operational since 2016 in the Zapanbrat brewery in Żywiec. It was designed and constructed by renowned Czech company Pacovske Strojirny. The effectiveness of the process has been confirmed in laboratory tests. They were presented in Marcin Maślanka's master's thesis titled *Słoma jako materiał wspomagający filtrację zacierów piwowskich* [Malt as a material supporting the filtration of brewing mash], written under the supervision of dr inż. Marek Zdaniewicz from the Agricultural University in Krakow. The construction of a hop extractor is presently being considered. The extractor was inspired by a process I had reconstructed, referred to as 'hop-frying' in historical sources.

## **5. Discussion of other scientific and research achievements**

### **a) research publications:**

My scope of interests covers a long period of time. Soon after obtaining my doctoral degree, I studied the Neolithic period in Lesser Poland. Later on, my attention was drawn to the Middle Ages and the beginning of the Early Modern period. My main research areas include the following subjects:

- the Neolithic period in the Lesser Poland region;
- mediaeval history of the Krakow region and neighbouring territories in the light of archaeological studies and archive search queries;
- Krakow before and after the Great Charter in the light of archaeological, architectural and historical studies;
- anthropological aspects of inhumations in Krakow;
- defence structures in Lesser Poland and neighbouring regions.

### **The list of my publications after the doctoral degree includes 106 items:**

- 1) 6 research monographs (of which 1 completed and supplemented post-doctoral book);
- 2) 28 articles in science periodicals (of which 2 articles in English);
- 3) 18 articles in non-reviewed or report periodicals;
- 4) 38 (a selection of more important) studies serving as the documentation of research work;
- 5) 5 chapters in monographs (of which 1 in German);
- 6) 1 patent;
- 7) 10 popular science publications.

### **The Neolithic period in Lesser Poland**

Shortly after the defence of my doctoral dissertation I started excavation research at the Linear Pottery Culture (LBK) site in Spytkowice, in the upper section of river Vistula [46, 47, 50, 51, 52]. The research was supervised by prof. dr hab. Bolesław Ginter and dr Paweł Valde-Nowak. The work performed led to the writing of two research articles [12, 13], including one discussing a type of tool hitherto unknown in Poland – *vedrovice* type perforator [13]. Two master's theses, written under the supervision of prof. dr hab. Bolesław Ginter, were based on the material deposited in the Institute of Archaeology at the Jagiellonian University. I also carried out rescue excavations in the flint mine in Sąspów [43]. I participated in the preliminary phase of research on the construction of the motorway connecting Krakow and Tarnów, verifying Neolithic sites (in Targowisko) [40, 44, 45]. I also

performed rescue research at the site 'Góra Grojecka' in Grojec, formerly in Bielskie Voivodeship [49].

**Mediaeval history of the Krakow region and neighbouring territories in the light of archaeological studies and archive search queries**

In the period from 1995 to 2005 I ran a number of excavations in the historical region of Lesser Poland and adjacent territories. Defensive wall systems in towns was one of the most common subjects of the research. I carried out work in Zator (a study of the rampart) [53], which resulted in the article *Najwcześniejsze dzieje Zatora...* [14], Bielsko (a study on a fragment of the fortifications in Kręta street) [54, 55], discussed in the article *Fragment fortyfikacji Bielska...* [35] or Olkusz [86]. In the years 1999 to 2001 I ran excavations in the mediaeval settlement in Prałkowce near Przemyśl [60, 62, 63]. The excavations were discussed in the article *Wstępne sprawozdanie z badań...* [15], published in *Rocznik Przemyski*. Furthermore, I took part in research work around the church in Żębocin, during which I unearthed and documented the oldest (most certainly Roman) phase of the temple's construction. The results of the work were published in the article *Najstarsze fazy kościoła...* [25], co-authored by Wojciech Głowa, Stanisław Sławiński and Joanna Sławińska.

**Krakow before and after the Great Charter in the light of archaeological, architectural and historical studies**

In the years 2000 to 2010 I conducted a series of archaeological excavation-based studies in Krakow, which led to many heritage restoration studies and articles. Most important of them include work in Św. Tomasza street [64]. The results were published in the "Krzysztofory" periodical [17]. Later on, with Maryla Dryja, I reconstructed a heating stove from the site [39]. I performed research work in the back area of tenements situated in the following Krakow streets: Szewska [61], Szczepańska [75], Grodzka [57, 83, 84] and Rynek Główny [74] and along the walls of the so-called 'Estreicher tenement' [66]. From 2004 to 2005 I conducted research in the former Colletine convent [72, 76]. The summary, which includes an in-depth historical study, as well as the findings of architectural and archaeological studies, constitutes a complementary monograph of the site. In 2006 I managed the research team performing preliminary work prior to the construction of the Visitors' Centre in Podzamcze (at the foot of the Wawel hill). The final outcome of the work was a report containing an extensive historical query, results of archaeological, architectural, and specialist studies, which combined to form a complementary monograph of Krakow's Podzamcze [79]. In 2007 I supervised archaeological work in Plac Biskupi in Krakow, conducted in connection with the city's investment plans [80]. The work led to the preparation of a comprehensive, interdisciplinary study on this part of Krakow, spanning three volumes in total. From 2005 to 2007 I was a member of the research team, and in the years 2008 to 2011 I managed the research work in Krakow's Market Square. I am one of the creators of the 'Underground Market' (in Polish *Podziemny Rynek*) concept, for which in 2011 I was

awarded the *Honoris Gratia* distinction from the President of Krakow. The results of the studies undertaken in the Market Square were presented in several articles discussing the layout of the Market after the municipal charter [19, 22, 38] or the architectural changes of the Wealthy Stalls and the Cloth Hall [20, 21]. I presented the findings at conferences in Poland (Krakow, Wrocław) and abroad (Prague, Leeds).

### **Anthropological aspects of inhumations in Krakow**

Mediaeval Krakow graveyards is an area of research interest which emerged out of the archaeological studies conducted in Krakow. Together with anthropologists from the Jagiellonian University I analysed the results of work performed at the graveyard in the Market Square in Krakow (along with other inhumations from later periods), which served as the basis for articles, including one published in *International Journal of Osteoarchaeology* [1], Polish journals [24], and presentations at overseas conferences (Leeds). In 2013 I investigated the remains of the graveyard at St. Peter and Paul's church (no longer present) in Krakow suburb Garbary; the remains survived in the back of one of tenements in Łobzowska street. The findings were published in the context of a comprehensive historical search query (together with Stanisław Sławiński) [28] and a modern, multi-aspect anthropological analysis (together with a team of anthropologists from the Jagiellonian University) [3]. I also investigated individual inhumations from the sites in Św. Tomasza [17, 64] and Grodzka [57, 83, 84] streets.

### **Defence structures in Lesser Poland and neighbouring regions**

An important subject I was preoccupied with during field research was the question of defence structures, i.e. castles and defensive mansions. In 2000 I commenced work at the castle in Bobolice. In collaboration with dr Waldemar Niewalda (architectural research) we investigated consecutive sections of the structure. Our findings were summarised in an article [16], restoration reports [65, 67, 68] and also during conference presentations (Krakow). We drew up a common concept for the renewal of the site, which was implemented in the years that followed. Similar work was performed at castles in Mirów [81] and Rabsztyn [70, 73, 88, 89, 91], summarized comprehensively in an article [30]. In 2004, together with Stanisław Sławiński, I conducted an extensive study of the defensive mansion in Graboszyce [71]. The results were published in the same year [26]. We resumed the study of the mansion in 2011, this time as part of the internship which I organised for students of the Protection of Cultural Property and History of Art at UPJP2 [87]. In the years 2007 to 2008 I conducted research (on the rampart and the oldest part of the development) during the revitalisation at Góra Zamkowa in Cieszyn [37, 82]. In the same period, together with Stanisław Sławiński, we investigated the castle in Grodziec Śląski. In 2013 I started, also as part of student internships, an extensive study of the castle and the palace in Mirosławiec (West Pomeranian Voivodeship). After six research seasons more work is expected to follow.

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**b) academic papers, lectures, presentations at conferences, symposia, meetings of the Polish Academy of Learning, in discussion panels:**

Having obtained the doctoral degree in arts I attended 17 conferences, symposia and meetings, presenting my own academic papers or lectures, both in Poland and abroad. In those sessions I presented papers at 10 international conferences, including 3 conferences abroad (Appendix 3). I organised or co-organised two conferences, including an international one. I chaired several discussion panels, of which one was at an international conference.

**c) science and research projects, international cooperation, membership in scientific institutions and organisations**

I participated in the Erasmus Plus programme (in 2018) as well as in programmes financed by the European Union, improving competences e.g. in management skills and university teaching methodology (Appendix 4).

Since 2018 I have been a member of the Board of Editors of the Staleta Praha periodical, issued by the Czech national heritage site protection organisation Národní Památkový Ústav (NPU).

I am a member of the Polish Historical Society (Krakow branch), Towarzystwo Miłośników Historii i Zabytków Krakowa (Society of the Enthusiasts of Krakow's History and Monuments) as well as of Sdružení Historiků České Republiky (Historický klub 1872), with headquarters in Prague (Czech Republic).

Since 2019 I have coordinated cooperation with **Výzkumný ústav pivovarský a sladařský in Prague (Research Institute of Brewing and Malting), in cooperation with which I started investigating brewer's yeast from Krakow and other sites in the Czech Republic and Poland.**

**d) organisational, teaching and popular science activities**

As an employee of the Faculty of History and Cultural Heritage I teach classes for year 1 and year 2 students of History of Art, Protection of Cultural Property and Historical Tourism. In academic year 2017/18 I started cooperation with the Agricultural University in Krakow (Faculty of Food Technologies), where I give lectures for students of Brewing and Malting on the history of brewing. I also give custom lectures for students of post-graduate studies Certified Brewer, organised by the Faculty of Food Technologies at the Agricultural University in Krakow.

In 2014 I initiated the establishment of the Laboratory of the History of Material Culture. The unit investigates the history of everyday objects, the techniques used for making them, their social context; it also performs relevant inventory-taking, preliminary

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maintenance/restoration and record-keeping in respect of such objects. One of the basic aims of the Laboratory is to organize student camps.

I actively participated in the work of the Faculty Committee for Parametrisation for the years 2013 to 2016, and currently I am the faculty coordinator of research publications. I also coordinate the IT system and I am responsible for promotion on the level of the Institute of the History of Art and Culture.

I take many steps to promote science, especially the history of brewing. I give popular science lectures, publish texts about the history of brewing, as well as being an active member of the Polish Home Brewers' Association.

*Sławomir Dryja*