

Historic Materials and Their Diagnostics in Poland

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1. INTRODUCTION

Poland, as every European country, is rich in monuments documenting its long and complicated history. The oldest ones (besides archeological findings which can be traced back to Neolithic times) are dated for the break of 9th and 10th c., when an independent state has emerged. The main towns of recent Poland: Krakow, Warszawa, Wroclaw (Breslau), Gdansk (Danzig), Poznan as well as those which were in borders of the Kingdom until the end of 18th c, such as Vilnius (Wilno) or Lvov (Lwow) are rich in artistic documents of history of the nations – Lithuanians, Ukrainians, Germans, Jews and Poles living there.

As everywhere, it was the king, nobility and church, who gathered, collected, stored and exhibited works of art as well as erected buildings which we now consider as monuments.

Also the first museum accessible to the public was opened by noble family Czartoryski 200 years ago.

The tradition of conserving and restoring art has also a long history: probably the first recorded conservation treatment in Poland is restoration of tempera panel painting of Black Madonna of Czestochowa, executed in 14th c.

The protection of monuments in modern understanding took shape around the end of 19th c when first institutions dealing with this subject were organized which, together with growing network of museums, created a sound base for systematic protection undertaken by State Service after the I WW when Poland regained its independence. It was also a time, when the first laboratory, devoted to analysis of art works was created by dr. Hanna Jedrzejewska in the National Museum in Warszawa.

The II WW brought about heavy losses in monuments, both architectural and works of art.

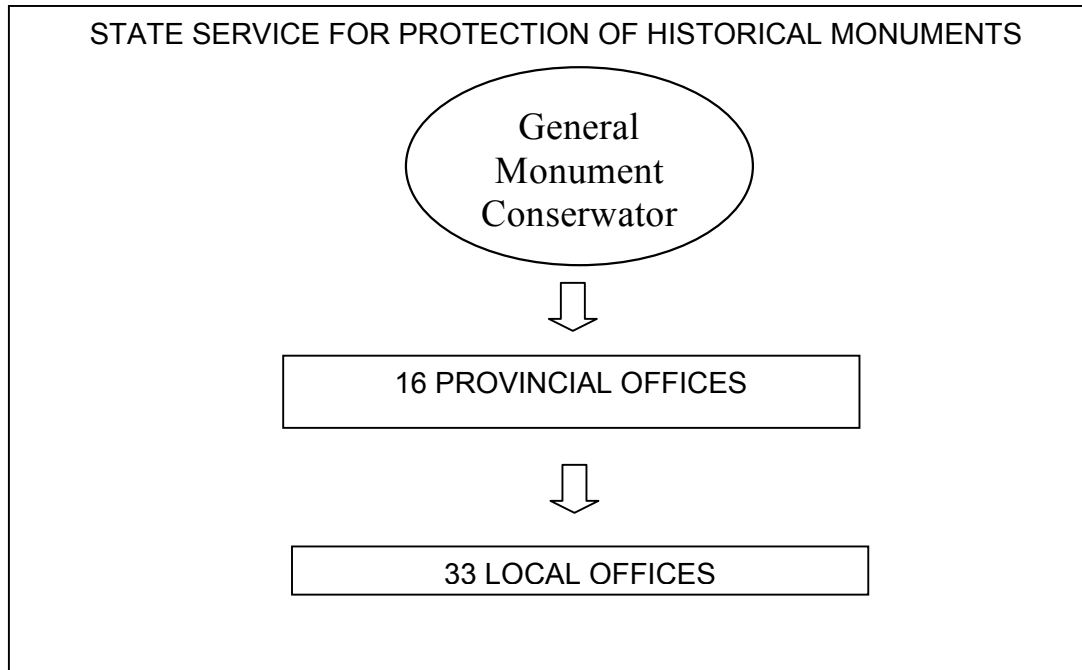
After the war it was clear that great effort would be necessary to save and restore the national heritage. This understanding led in early 50-ties to establishing of academic (Krakow, Warszawa, Torun), administrative (State Conservation Offices) and professional (Studios of Monuments Conservation – PKZ) institutions. From the very beginning research laboratories were important part of schools and PKZ. Small at first, they have developed to such an extent that now they fulfill the majority of needs of modern conservation practice.

2. System of Monuments' Protection in Poland

2.1 Legal

The protection of monuments in Poland is subject to state legislation.

The structure of legal protection is based on a network of provincial offices of the government body - State Service of Protection of Historical Monuments with its head office the General Monument Conservator. Recently there are 16 provincial (voivodship) offices and 33 local ones.



The General Monument Conservator with his offices is responsible for listed monuments and for quality of conservation works.

2.2 Self- government

The administrative system in Poland is based on self – government. Thus local administration, mainly in big towns, nominates also municipal conservators responsible for protection of heritage which, although important for local community, are not listed yet.

2.3 Church

Church, which is probably the biggest owner of important monuments in Poland, has its own conservation service, usually connected to dioceses. They protect the ecclesiastic value of monument, but ought to collaborate with General Conservator’s Offices on protection matters.

2.4 Private owners

Private property of monumental value is subject to general rules of monuments protection and any alterations have to be consulted and approved by Conservator’s offices

3. Restorers and conservators

Since in Poland three universities teach conservation on academic level, only graduates of those schools are allowed to carry out conservation treatment of works of art. Exceptions are only for the subjects which are not taught on systematic bases.: for instance stained glass. Architecture (with exception of architectural sculpture) can be restored by architects trained at architectural faculties with specialization in conservation.

In general, conservators work on free-lance basis. Since free market economy caused the bankruptcy of the biggest state owned firm – PKZ - several private owned enterprises, sometimes well developed, are very active in Poland recently and they employ conservators on stable basis.

The above described system exists in Poland for about 50 years and is well established, although some responsibilities between administrations overlap, leading sometimes to conflicts.

4. Financing

Conservation and restoration in Poland is financed to large extent by the state. Other sources: local, church and private play more and more important role since the state reduces its involvement in supporting cultural development.

It must be pointed out that "conservation market" is an important part of national economy. For instance in 2000 year about 160 000 people were involved in conservation works, including 3000 professional conservators. The small part of them (about 100) were scientists.

5. Training and research

As it was already told, the conservation training is based on academic level teaching.

Three institutions: Academy of Fine Arts in Warszawa, Academy of Fine Arts in Krakow and Nicolaus Copernicus University in Torun maintain the Faculties of Conservation and Restoration of Works of Art. All were established about 50 years ago. The course of studies takes 6 years and graduates after completing the diploma work receive MA (Master of Art) degree. PhD are given only in Torun as Academies of Fine Arts have a different the system of scientific grades. The courses in academies have a strong artistic aspect, while university in Torun is more science oriented.

The system of teaching is similar: through the theoretical lectures students learn the scientific background of the trade and through practical exercises students gain the skills of conservator's profession.

Main conservation specializations lectured are: conservation of sculpture, painting, architectural materials (brick, stone) and paper and textiles (Torun and Warszawa).

Practical experience is supported by theoretical knowledge. In all schools sciences: chemistry, physics, microbiology, geology belong to important part of the curriculum. All schools have also laboratories which do not serve only for educational purposes, but also carry out research works. In all three schools about 25 scientists. Mostly chemists, but also physicists, geologists and microbiologists are employed. Majority of them have PhD degrees and few are associated professors.

In all three conservation faculties the following main research specializations are performed:

- analysis of structure of art works: microscopy, x-ray, IR reflectography, technical photography.
- analysis of historic components of art works: pigments, binding media, supports (fibers, woods, mortars). The equipment laboratories have for this purposes include: SEM, spectrography with laser extinction, IR spectrophotometer (Krakow), gas chromatograph, UV microscopy (Torun), laboratory of dendrochronology (Warszawa).

Of course classic wet chemical analysis are performed and lectured in all three schools.

- research on conservation methods and materials. The longest tradition in this field has the Torun University, where specialized laboratory for research on plastic materials was organized but both academies also carry out works on this subject: for instance materials for lining panel paintings and transferring wall and panel paintings - Krakow or paper conservation methods and laser cleaning in Warszawa. The equipment varies, depending on school, but the most interesting ones are climatic chambers in Torun and moisture sorption analyser in Krakow.

There is no doubt, that three schools mentioned have created, and still create, the standards of scientific research in conservation field in Poland. Through the curriculum covering scientific subjects and scientists - lecturers understanding importance of scientific research is implemented into the every day conservation practice. Moreover, the schools developed a conservation

documentation scheme where the scientific research is one of the important (and obligatory) parts of written record. This scheme is accepted as a standard in Poland.

It is clear, that such a multidisciplinary discipline like scientific conservation needs a collaboration between scientist of different specializations. And it is also clear, that it is hardly possible to run a one laboratory specializing in all possible aspects of conservation science.

Thus, as everywhere, also in Poland the collaboration between scientists is essential. All three schools collaborate with each other and, to facilitate this collaboration the Intercollegiate Institute has been established in 1999. . The Institute plans to coordinate the joined scientific research, search for financing sources and for interesting research problems.

The institute is still *in statu nascendi*, but interdisciplinary collaboration does exists. All schools collaborate on stable basis with scientific institutions all over Poland.

In Torun, where Conservation Faculty is a part of university with scientific Faculties (Chemistry, Physics) the collaboration is obvious. In other academic Faculties, which in education system in Poland belong to the Ministry of Culture and not to Ministry of Education, this collaboration was based rather on private interests and contacts of scientists than on systematic approach.

Last 10 years, however, brought about growing interest in conservation research also between scientists from other specializations. It is no doubt, that one of the main reasons is

a change of system of financing the research in academic and research institutions in Poland. On the one hand, after 1990, the state owned industry one of the main investors in research field reduced its financial input (mostly because state owned industry was reduced itself) on the other the state introduced the new system of financing research. This grant system governed by the State Committee for Scientific Research (KBN), supports research in all scientific areas, conservation included. Thanks to this, research institutions were able to acquire modern scientific equipment and, seeking for interesting projects, started the interest also in conservation field. Since both "artistic" Conservation Faculties are situated in big scientific centers, the stable links were quickly established. It is not easy to tell how many laboratories are involved in joined projects, but the major universities (Jagiellonian University in Krakow, Warsaw University in Warszawa) technical universities (University of Mining and Metalurgy in Krakow and in Warszawa: Warsaw Technical University, Military University of Technology, The Main School of Agriculture) as well as Polish Academy of Science and other institutes do collaborate on continuous base. The sophisticated equipment available quickly raised the level of research, particularly in analytical field where, for instance, gas chromatography with mass spectrometry is already used for routine analysis of binding media (Warsaw Technical University), neutron activation analysis (Institute of Nuclear Chemistry and Technology in Warsaw) which was used for analysis of inorganic components of paintings or PIXE-PIDE method applied for analysis of medieval stained glass composition (Institute of Nuclear Research in Krakow), analysis of binding media by IR microscopy (Institute of Forensic Science, Krakow).

The more detailed, although far from complete, information about the institutions collaborating in conservation field is given in the REPLY form.

6. Museums and research

Museums in Poland concentrate on protection of works of art they house rather than on their analysis. Therefore majority of the them run conservation studios, but only few of them have small laboratories for simple analytical works. For important research specialists from other institutions, usually from Conservation Faculties are employed. Big museums, however, such as National Museums situated in Warszawa, Krakow, Wroclaw, Poznan, Gdansk, Wawel Castle Museum in Krakow, where such a research is necessary more than often, established the stable collaboration with scientists, knowing their problems and needs. In some cases this collaboration lead to

important projects such as analysis of painting materials of 50 Italian paintings in Wawel Castle Museum or similar project "Serenissima" in National Museum in Warszawa (in both Conservation Faculty from Krakow was responsible for scientific analysis).

7. Other research areas

As it was stated before, the conservation market is relatively well developed in Poland (although it seems that in nearest future, due to general crisis in Poland, this development will be slowed down). Because any conservation work have to be documented and the research is one of the important parts of treatment record, many small, but often very interesting analytical projects are carried out every year. This practical research is usually executed by conservation scientists from the Conservation Faculties but also by a few small, yet active private owned firms. This research is strongly connected with everyday problems of conservators and with antique market.

8. International collaboration

Until the 1990 the scientific international contacts were scarce. Probably the best ones were developed in Torun, where, thanks to achievements of prof. Wieslaw Domasowski in the field of conservation of stone expertise for UNESCO and collaboration with Western European institutions was well developed.

After 1990 situation has changed for several reasons: besides well known growing interest in Eastern European countries, change of political system and market economy opened up new possibilities of collaboration. At first they were based on private contacts, but quickly they took more institutional shape. Thanks to EU TEMPUS project Conservation Faculties received funds for exchange of students and scientists as well as for scientific equipment.

The major breakthrough, however was connected with joining the 5h Framework The participation in projects in the field of conservation developed slowly: the first one IMPACT, was started in National Museum in Krakow in 2000. Recently however, at least three more, all based in Krakow (Polish Academy of Science, National Museum and Conservation Faculty) have been accepted. Perhaps the most important one is the 5th Conference on

5th Framework Research in Heritage Conservation, which will be held in Krakow in May, 2002.

Some projects, although financed by national sources, have had also an international meaning. Already mentioned projects on analysis of Italian paintings were executed with the help of Italian specialists and similar Wawel Project was financed by Getty Foundation. Another project, Research and Conservation of Medieval Stained Glass Windows from the St. Mary's Church in Krakow was executed with the collaboration of Corpus Vitrearum Medii Aevi. This collaboration helped to establish Faculty of Conservation in Krakow (in collaboration with Academy of Mining) as a center of scientific treatment and research of glass in Poland. Finally, important international collaboration exists between Laboratory of Dendrochronology of the Conservation Faculty in Warsaw and numerous museums in Western Europe since Polish wood was used commonly for wooden supports of paintings (most of Flemish paintings were executed on "Polish" boards).

9. Future

Future of conservation science research in Poland seems to depend mostly on the activity of scientists on international and national levels. The national collaboration, thanks to interest of numerous scientific institutions in Poland seems to be promising – close contacts are already established. International collaboration started to develop too – we hope, that this trend will remain.

The main problems, which may be an obstacle, belong mostly to the non-scientific ones:

- lack of exchange of information

- lack of courses for conservation scientists based in non conservation schools
- lack of young scientists willing to concentrate on conservation science only
- relatively small community working in this field
- lack of knowledge of foreign languages

Nevertheless, there is no doubt that Poland must follow the general trend in development of conservation science. Participation in such a projects as ARIADNE is an important step towards the main aim – high level of conservation science.