“Daguerre’s painting by light…”
A project of the Department of Photography of the Film and TV School of the Academy of Performing Arts in Prague (FAMU)
**ABSTRACT**

Daguerreotypes in the archives of the Czech Republic are an important part of the Czech cultural heritage. We intend to develop better techniques for the archiving, care and conservation of historical daguerreotypes, as well as to organize exhibitions to foster a wider awareness of these images as important historical artifacts. We aim to accurately reconstruct the original procedures for creating daguerreotypes, while closely observing the chemical and physical processes involved, in addition to reproducing and studying conditions that lead to the deterioration of daguerreotypes, so as to improve their preservation. This analysis will lead to the on-line publication of an in-depth study of daguerreotype damage and chemical corrosion, which will enable more effective practical maintenance and protection of daguerreotypes.

**KEY WORDS:** History of Photography, Daguerre, Photographic Heritage, Preservation, Restoration of daguerreotypes, FAMU

\*by PETRA VÁVROVÁ and LIBOR JŮN, FAMU, Prague*
The Institute of Chemical Technology performs daguerreotypes and daguerreotype samples. Next, we proceed to the chemical analysis of following steps:

- Silvering the copper plate,
- Polishing the plate’s surface to a high gloss,
- Sensitizing by iodine vapor (or bromine and chlorine),
- Exposing the plate,
- Developing by mercury vapor or by the so-called Becquerel procedure,
- Fixing, washing and gilding.

Next, we proceed to the chemical analysis of daguerreotypes and daguerreotype samples. The Institute of Chemical Technology performs SEM/EDS analyses of daguerreotype images using real daguerreotypes. Based on the analysis and measurements we have obtained our first specific knowledge to determine the processes in the area of artificial ageing and damage of laboratory daguerreotype samples. Comprehensive laboratory simulation of degradation and damage of the newly produced daguerreotypes was performed. Subsequently, the samples are subject to testing of new and effective methods of conservation and/or restoration of daguerreotypes.

The next task solved in parallel is the creation of a digital database, serving as the atlas of daguerreotype damage. The atlas describes degradation, damage and surface characteristics of daguerreotypes and earlier restoration work on them with recommendations for appropriate care and storage. The atlas also includes Czech-English, English-Czech, Czech-Spanish and Spanish-Czech dictionaries of technical terms linked to this area of photography. In the database a basic structure of the atlas was created. It also contains descriptions of the observed phenomena and photographic documentation of damaged daguerreotype materials. A methodology for determining the hierarchy of damage and mutual relations between forms of degradation, including context, has been created.

The atlas of degradation, damage and earlier restoration intervention on daguerreotypes is formed as an effective tool to improve the care of cultural heritage. The atlas of damage includes basic information characterizing a given daguerreotype, descriptions of various types of damage, or conservation and restoration intervention, everything being documented by micro- or macro-photographs. All information and photographs will form a digital database for easy retrieval of all types of damage and other types of data. For the atlas of damage a unique application in the programming language Visual Basic using the NET framework has been created. This application is equipped with a separate database in MS Access. To ensure compatibility with older versions, it was decided to use the MDB version. The MDB type was chosen as the best in terms of transferability to other computers, where only an OLE DB driver is used to transfer data.

The atlas application supports primarily input of descriptive data relating to daguerreotypes themselves, as well as materials making up the given daguerreotype and various data on the damage. All this data can be later-modified in the application by authorized users. The application also allows messaging and user rights assignments to access the atlas of damage. Viewing the embedded data is possible using selectable filters. For adding and editing keywords, the editing part of the application is used. This editing element allows an authorized person to add, modify or remove keywords linked to damage, materials or image modification.

In implementing individual stages of the project (the results of which will, among other things, be summarized in a monograph in English) the vital importance of a careful and systematic survey of physical conditions of photographic materials - in this case daguerreotypes - is reaffirmed. Such a survey of the physical condition of objects of cultural heritage seems increasingly indispensable when working with any collection. No decision on further procedures and care of individual objects can be made without a survey of the state of collections and individual objects. It is necessary that the survey also includes the description of the premises (depository) where daguerreotypes are deposited, i.e. including a description of the building, technical support and climatic parameters of storage of individual collections.

CONCLUSION

The above described project is currently one of the key professional challenges of the course “Restoration of photographs”, as well as the gradual integration of students into its various stages. It has affected the overall motivation of students positively and increased effectiveness of the studies. In addition, the topic positively influences the development of international contacts and further professional cooperation with this restoration course. The daguerreotype process standing at the beginning of photographic imaging, is an important part of both Czech and European cultural heritage and it can be expected that it will be paid increasing attention and care in the future. Unfortunately, daguerreotypes have often lacked this attention and thus in general it is necessary that the attitude of many archival, museum and gallery institutions towards this subtle photographic medium be changed. And it is exactly with this point that further meaning of the project “Daguerre’s painting by light...” of the Department of Photography should be seen. 


NOTES

1. A similar problem is for example chemical nomenclature development, measurement systems change, chemical compounds concentrations etc.
2. SEM - Scanning Electron Microscope for a view of the surface structure EDS - Electron Dispersive Spectrometer for reliable determination of the elemental composition of the surface of an examined object.
3. The Spanish version of the atlas has been created as a reflection of incipient Czech-Cuban cooperation in the area of the care of photographic materials in Cuban heritage institutions.