

SUMMARY

The issue of a sceptre for the newly founded Faculty of Science was first discussed on the meeting of Faculty professors on the 25th November 1921, more than a year after the separation of the Faculty of Science from the Faculty of Arts. The commission elected from among the professors proposed a motion that the new Faculty sceptre should resemble the sceptre of the parental Faculty of Arts. Through a mediation of the Ministry of Education and National Enlightenment the design of the new sceptre was ordered from the Academy of Arts, Architecture and Design and it was elaborated by prof. Jaroslav Horejc. However, in January 1923, his design was rejected, because it didn't meet the requirements of the professors' conservative approach. When prof. Horejc refused to make a modified copy of the sceptre of the Faculty of Arts, the professors addressed Tengler, the goldsmith who had made the sceptres of other faculties and of the rector in previous years. Alois Tengler was willing to make a modified copy of the sceptre of Faculty of Arts, but he also proposed a new design (with estimated price of 20 000 K), which the professors found more suitable and subsequently this design was adopted. Tengler committed himself to manufacture the sceptre by the 15th November 1924 and to incorporate any additional design alterations by the end of March 1925. According to a memorandum of the Dean, this deadline had been respected. However, the dating on the sceptre is 1926, the year in which additional changes were made towards sceptre's current appearance.

The sceptre is made in the style of Art Nouveau; its ornamental parts are influenced by Art Deco. Its length is 115.7 cm, which is more than 20 cm less than the previously stated value in the literature (which was probably erroneous). There are six rock crystal intaglios on the crown of the sceptre, which are in different position than it is preserved on older photographs. This change may have taken place in the second half of the 1980s during restoration of the sceptre.

The reliefs of the sceptre were reinterpreted on the basis of historical documents. At the front side of the sceptre's crown the relief of a woman represents "Science" (instead of "Nature" as was previously stated), while the "Nature" is represented by the child's statuette at the top of the sceptre, which was previously interpreted as Christ.

The shaft of the sceptre was made either on metal spinning lathe or by mould casting. The reliefs of women in the middle part and crown of the sceptre and its top were produced by mould casting followed by chasing. The leaves located at the base of the sceptre's crown and the sun near the top of the sceptre were made by metal beating followed by chasing. The gilding of several parts of the sceptre was done by electrolysis, which was confirmed by the results of XRF analysis (the measured spots didn't contain mercury which is a sign of previously used hot dipping). Other methods were used in the production process of the sceptre including open work, assembly and gilding technique called gold leaf on mixtion.

There are six state hallmarks on the sceptre, all expressing the fineness of silver 800/1000. On the sceptre are also three maker's marks, two with letters AT in a rectangle cut out at the top and the bottom (even though this mark wasn't officially approved by the Assay Office at the time of the sceptre's manufacture) and one is incomplete with only the second letter of the monogram.

All the precious stones adorning the sceptre were successfully identified using traditional gemmological methods (the measurement of the refractive index and of the thermal conductivity, the detection of the pleochroism, the observation of the optical properties in the polariscope as well as of the reaction in the Chelsea filter, the detection of the reaction in the UV light, the observation by the stereomicroscope) and the Raman spectroscopy. Consequently, twelve teardrop-cut amethyst, four dyed-green chalcedonies (previously identified as chrysoprases), twenty carnelians, four garnets with mixed composition of pyrope and almandine (which were previously considered to be almandines), four citrines (previously identified as topazes), six amethysts cut as faceted "spherules", four moss

agates, two amethysts with rectangular cut, six rock crystal intaglios and five lapis lazuli, two of which are dyed (all of them were previously considered to be lazurites), were identified.

The gemstones' possible localities of origin were suggested on the basis of historical data.

The precious metals of the sceptre were analysed by the XRF analysis. The measured silver alloys contained silver, copper, zinc and in some cases lead. The semiquantitative determination of the elements in silver alloys indicated that the fineness of silver given by the hallmarks was obeyed and in most cases exceeded. It was verified that the sceptre is gilded. It was also confirmed that the lighter metal which protrudes amidst the silver at the end of the shaft is brass with an approximate composition of $Zn_{30}Cu_{70}$, which forms a pin passing through the whole sceptre.