Conservation and restoration of three marble segments from the Throne of Metropolitan Silvester

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The Throne segments were founded at the Relja’s Gradina citie in 1867-1908, in the remains of the monastery complex of Saint Varvara and dates from the XVI-XVII century. The three segments were covered with calcification deposits, impurities and chemical process that were taking place within the marble left changes both in structure and appearance. Technical drawings, photo documentation and photographs with USB Dino Lite Digital Microscope 2.0 camera of segments’ damages were made during the assessment of the segments condition.

All segments were mechanically cleaned using a variety of brushes with vacuum-cleaner after which an examination was conducted for determination of water absorption with Karsten tube (RIILEM) method. The method was conducted with several tubes at the same time, in case of these marble segments there was very little absorption during one hour of testing and based on evaluation of surface and general condition, it was concluded that wet cleaning should and can be conducted as a next step of conservation. Low pressure water cleaning with light abrasive methods was effective as the first layer of dirt was bound to relatively soluble chemical compounds. Chemical cleaning with 3% Galgno in distilled water was the first to conduct and it removed most of pigmented impurities from soil. After that on the two smaller segments which were not restored only mechanical cleaning of calcification covered surface was conducted using different sizes of medical scalpels and Gavitron ultrasonic descaler with vibration frequency of 38-34 KHz. On the biggest segment that consist of three fragments before mechanical cleaning, tests with Mora’s paste were conducted on the back of the two fragments, according to the recipe of the compound by Paolo and Laura Mora, with a replacement of carboxymethylcellulose and Agar-agar as a carrier of solution due to stronger adhesive characteristic of material. Tests were checked after four hours and repeated as needed after twenty-four hours. Removing of inventory number which was written on the smaller fragment with permanent marker was conducted with cotton pad, soaked in acetone.

Restoration process

Two fragments that carried same inventory numbers after cleaning and drying were restored with epoxy resin and it was concluded that one of the smaller fragments differently marked represent a part of that group too. Restoration was than implemented on those fragments but due to damages of the edges and surface, missing parties emerged after reassembling. Gaps were filled with mixture 40% B72 Paraloid in acetone and 40% B48N Paraloid in acetone in ratio 3:1 with marble flour, smaller gaps were filled with Kraft Druckfarben Hellas Repair Professional Acryle Putty. Restoration was completed with color blending in relation to the original with acrylic dissolved in distilled water and pigments mixture. All the segments were labeled with their inventory number, waxed with Bellinzoni microcrystalline wax at the end of the process and packed in protective foils. Documentation of the entire conservation and restoration process, along with the object was submitted to the curator of the Post-Byzantine Art Collection, Branka Ivanić MA, museum adviser at the National Museum of Serbia, in Belgrade.

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