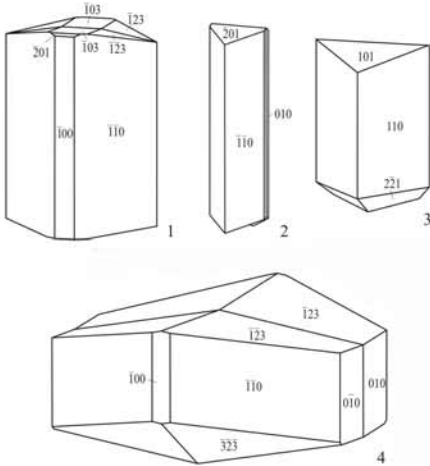


Carbonates



127. **Malachite** crystals and twins from Mednorudnyanskoe deposit: (1), (3), (4) after V. Goldschmidt's Atlas, redrawn; (2) twin from N.I. Kozin's collection; (3) asymmetric monocrystal.
Drawing: V.A. Popov.

Malachite as blocks, veins and pockets is the predominant carbonate mineral in the Mednorudnyanskoe oxidation zone. This is a famous Mednorudnyanskoe mineral that has served at one point for decorating palaces and cathedrals, and the manufacture of table tops, chimneys, decorative boxes and jewellery. Azurite and calcite are the other carbonates found at the deposit with others being rare.

Malachite from the Nizhniy Tagil (Nizhnetagilsk) vicinity was identified as "aerugo" for the first time in 1722 in the southern slope of Mount Magnitnaya in the "Copper Pit," which is marked on the map of the Tagil and Neiva Rivers (Central State Archive of Ancient Adicts, file 271, op. 3; based on Semenov, 1987). The Mount Magnitnaya "aerugo" was also mentioned by P.S. Pallas (1786). Malachite veinlets were also observed later amidst the brick-colored copper ore during mining in the Rudyanskoe copper mine (Engelgardt, 1829). As aforementioned, a huge malachite pocket was found in the Nadezhnaya pit in June 1835. The original area of its exposed part was 5.3 x 2.1 m. Then it was blocked out eight meters below. Later P.V. Eremeev and K.P. Mazurin estimated the overall weight of malachite as 480 and 380 tons, respectively (Semenov, 1987). Fotiy Ilyich Shvetsov, a manager of the Mednorudnyanskoe mine drew a sketch of the outcropped part of this block (*Fig. 128*). A photograph of this engraving was previously published anonymously (*Colossal block...*, 1836; Kleimenov *et al.*, 2007). The largest malachite blocks from this pocket are now at the "Gornozavodkoi Ural" Reserve Museum (Nizhniy Tagil), their weigh is 500 and 300 kg. Smaller blocks are stored in museums worldwide. A significant portion of the 24.57 tons of malachite sent to Saint Petersburg was used to cover the columns of St. Isaac Cathedral (*Fig. 1*), while another 3.276 tons were used to decorate the Malachite Hall and rotunda of the Winter Palace (now State Hermitage Museum) (Semenov, 1987).



128. **Malachite** colossal block (view from Top and side), found in 1835 in the Nadezhnaya Mine. Copper engravings, watercolor; from drawings by F.I. Shvetsov (after Kleimenov *et al.*, 2007).

134. **Malachite** arch, monolithic.
50 x 55 x 29 cm, weight 115.2 kg.
Nizhny Tagil "Gornozavodkoi Ural"
Reserve Museum #TM-1485.
Photo: M.B. Leybov.

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135. **Malachite-opal** septarium from karst
deposition of Mednorudyanskoe deposit
(late malachite appeared after opal layer
cracking). 4 cm.
Specimen: V.A. and V.I. Popovs #239,
collected by N.I. Kozin.
Photo: V.A. Popov.

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