



Tectonic deformations of the NW Novaya Zemlya Archipelago

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The Novaya Zemlya archipelago comprises two main islands (Northern and Southern). Structural studies were conducted in the northwestern part of Northern Island, composed mainly of Upper Proterozoic–Carboniferous rocks. The structural style is dominated by NW-striking folds, clearly recognized on geological maps. The folds are typically overturned to the northwest. Southeast-dipping axial-plane cleavage is widely distributed. Tectonic transportation in Mesozoic time was directed from southeast to northwest. The bedding-cleavage intersection lineation plunges to southeast and southwest, parallel to the axes of large and small folds. The dip angle of the lineation is high, ranging up to 30° or, rarely even more. Dip angle of the intersection lineation is highly variable over a short distance, pointing to occurrence of several stages of deformation. The intersection lineation plunge angles are likely close to dip angles of bedding on the early-stage fold limbs, most of which were gentle to open ones. The early folding is presumably related to Caledonian or Ellesmerian orogenies.