



Tectonic deformations of the New Siberian Islands (Arctic Ocean)

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South of Bel'kovsky Is. Devonian-Permian rocks are deformed into open, and cylindrical folds of NW strike. Discrete NW-striking cleavage dips to SW in the southeast of the island and to NW in the southwest. Intersection lineation of cleavage and bedding has NW strike. Reverse faults have E-SE vergence. N- and W-trending dextral and sinistral strike-slip faults are present. Normal faults have NW to WNW trends. From stress restoration, compression occurred in NE-SW direction, orthogonally to major folds strike in the region.

NW Kotel'nyi Is. Carboniferous-Permian rocks have monoclinial bedding, with beds dipping to N-NE. There are rare open folds. Cleavage is absent. W-NW and NE-trending strike-slip faults and shear zones have been observed. According to stress restoration, compression axis had E-SE direction. Middle Devonian limestones are deformed into small concentric and cylindrical folds, often overturned to SW. Hinges dip gently to SE. Cleavage is absent. There are SW-verging thrusts.

SW Kotel'nyi Is. Upper Devonian rocks are deformed. Deformation occurred in 2 stages. Rocks have submonoclinial bedding, dipping to W, and are cut by cleavage. Folds of second generation deform both the bedding and first generation cleavage. Intersection lineation of bedding and first generation cleavage is also deformed. Present are strike-slips and ductile-brittle shear zones of NW strike associated with second-stage deformations.

West of Bol. Lyakhov Is. Upper Jurassic rocks are deformed into concentric and cylindrical folds overturned to N. Hinges dip gently to W and E. Cleavage is absent. Folds are associated with reverse faults. Rare NW-striking strike slip faults cut major folds.

South of Jeannette Is. Volcanogenic-sedimentary rocks generally dip to E-NE. Common are similar folds accompanied by cleavage and W-vergent thrusts. Hinges and intersection lineation of cleavage and bedding dip to N. There are normal faults with fault planes inclined to E. Intruding dolerite dikes trend mainly to W-NW.

South and West of Henrietta Is. Most intense deformation occurs in the southwest of island. There are numerous thrusts and folds of W-SW vergence. Faults often have combined strike-slip and reverse fault kinematics. Hinges are both gentle and steep. Common are recumbent and overturned folds. Cleavage is absent. In the south, east and north, rocks are monoclinial, with gently dipping beds. Folds are intruded by dolerite dikes of NW strike just as on Jeannette Is.

Folds and thrusts on Jeannette and Henrietta Islands have similar W-WSW vergence, suggesting that exposed structures belong to the same terrane. This is also indirectly evidenced by similar orientation of intruding dolerite dikes on both islands. Degree of rock deformation on Jeannette Is. is higher than that on Henrietta Is. Character and orientation of deformation on both islands suggest they form part of the same orogenic belt.

South of Bennett Is. Cambro-Ordovician rocks are deformed into open anticlinal fold of NS strike several kilometers width. Cleavage is absent.

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