Biotic and abiotic rock constituent of the Kapp Starostin Formation (Permian), South-West Spitsbergen, have been studied by means of factor analysis of correspondences. Eight associations are distinguished among the variable (thickshelled brachiopod, bryozoan, brachiopod-crinoid, bryozoan-ostracode, spongeostracode, sponge, foraminifer-algal, and foraminifer associations) and interpreted as indicative of distinct facies zones including nearshore, offshore trough, bank, open sea, and lagoon. The facies pattern was controlled mainly by distance from the shoreline, coast type, water energy and depth.

**Key words:** Biofacies, factor analysis, Permian, Spitsbergen.