

Topoclimatic Diversity in Forlandsundet Region (NW Spitsbergen) in Global Warming Conditions, Rajmund Przybylak, Andrzej Arażny, Marek Kejna, Rafał Maszewski (eds), Nicolaus Copernicus University Toruń, 2012, 174 pages.

The book presents the results of the extensive and detailed topoclimatological research carried out by the Authors in the area of Forlandsundet (NW Spitsbergen) during two years (2010 and 2011). The results of the intensive studies were compared with long-term measurements related to this area. The field measurements conducted in 2010 and 2011 included three areas, distinguished by dissimilar environmental conditions: (1) north part of Kaffiøyra and the south of Sarsøyra with Sarstangen is area with large number of measurement points at different spatial scales and various active surfaces, with a good location to a nearby reference station; (2) island Prins Karls Forland and (3) edge of the St. Jonsfiorden (climatological impact of an average-sized fjord).

The studied area in the vicinity of Forland Strait (Forlandsundet) includes all types of surfaces and grounds (beach,

tundra, moraine, ice) and relief (plain, frontal moraines, mountain ridges). The area is representative for the other Svalbard landscapes and reliefs.

The book is a classical, climatological study, richly illustrated with 42 tables and 67 figures.

Each of the seven chapters include numerous references to earlier research and list of dedicated literature. The first section of the book provides historical context of the studies, includes methodology and describes primary climatological causes. The relations between atmospheric circulation and local wind field are analysed in the next chapter. The third section contains characteristics of radiation conditions (cloudiness, sunshine duration, radiation balance), considered in the context of the types of atmospheric circulation. Thermal conditions (air and active layer of permafrost) are discussed in the Chapter Four. Next chapter contains an assessment of spatial differentiation of relative humidity and precipitation in the region Forlandsundet. The impact of atmospheric circulation on temperature and humidity is analysed in the Chapter Six. Last, the seventh chapter contains a comparison of meteorological conditions in the summer seasons 2010–2011 with the conditions in the period 1975–2011.

The results of the carried out field studies are valuable. The conclusions contain a number of datum and evidences to understand the mechanisms that cause the diversity of local climates and stimulate dynamics of processes forming polar ecosystems. It should be concluded that

the submitted for review scientific study is a valuable contribution to climate research of the Arctic.

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