

SPECIFIC ASPECTS OF ANTARCTIC HERB TUNDRA ALONG TWO ECOLOGICAL GRADIENTS

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During the Antarctic summer seasons 1995/96, 2001/02 and 2005/06, studies of the Antarctic herb tundra formation were conducted in the neighborhood of Arctowski Station in Admiralty Bay, King George Island, maritime Antarctica. Changes in plant species composition and abundance were examined along two transects running (1) landwards from the sea coast and (2) from penguin colonies to sites beyond the penguin influence zone. The selected transects represent two major ecological gradients affecting the distribution of Antarctic vascular plants: basic ecological and penguin influence. The results support the hypothesis that accidental nitrification affects the projective cover of *D. antarctica*, *C. quitensis*, and other plants and interferes with proper identification of the vegetation zone. Comparison between the composition of Antarctic cenoses from areas not exposed to organics inflow from bird colonies and those from transects going through several penguin colonies suggests that penguin colonies promote only local transformation of the Antarctic herb tundra formation. Such local transformations were found to result in the appearance of new varieties of the studied formation of the rank of *sociation*. These patterns and ecological relations are not specific to the investigated area but can probably be generalized to other maritime Antarctic localities. Our field work was supported by the Antarctic Biology Department of Polish Academy of Sciences and by National Antarctic Center of Ukraine and realized in frame of project between PAS and NANU titled "The influence of environment on the distribution, numbers, and diversity of living organisms of maritime Antarctic shore zone".