(GS10) Pollination ecology

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Finding new links in an alpine pollination network by examining pollen deposited on the insect body surfaces

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Many angiosperms depend their pollination on flower visiting animals. Mutual pollination networks often have general properties such as nested and modular structure. Some researches suggested that we can estimate temporal stability of networks from the properties. Thus, to know such network structure is considered to be important for conservation planning of diverse plant-pollinator interactions including rare plant and pollinator species. Pollination networks in alpine ecosystems have been reported from a few different regions (J M. Olesen and P Jordano 2002; Y L. Dupont et al. 2003). Because time- and labor-consuming observations are necessary for collecting data of pollination networks, however, a whole network structure has been rarely examined. In this study, we aimed to figure out a detailed pollination network structure not only with direct observations of flower visiting behaviors but also with examining pollen deposited on body surfaces of flower visiting insects. We also examined to what extent do bumble bees and dipterans contribute to plant pollination as pollinators with body-surface pollen observation. Furthermore, pollen grains on the stigmas of visited flowers were examined to estimate pollination success by each insect species.

Keywords: palynology, plant-insect interaction, pollination network, pollen deposited surface insect, pollen deposited surface stigma.