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Four seasonns of *Pinguicula ramosa* and its habitat of Mt. Koushin

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Abstract. Seasonal rhythms of *P. ramosa* and its habitat of Mt. Koushin are shown by VIDEO.

Pinguicula ramosa Miyoshi is endemic to Japan and is restricted to only a few mountains, north of Tokyo, including Mt. Koushin where the type locality of the species was discovered . Seasonal rhythm of *P. ramosa* and its habitat of Mt. Koushin, especially winter conditions, have not been well studied.

Full seasons of the species and Mt. Koushin were VIDEO-tape recorded from 1968 up to the present for analysis.

In late May, winter bulbs of *P. ramosa* begin to dehisce, grow leaves and already set flower buds.

In middle June, plants of the species are flowering. Flower angle is at 180° placed behind and rolled slowly to normal flower position. Inflorescences grow from horizontal to vertical direction and eight times as long as those at the beginning of the flowering. When the capsules get matured, the inflorescences are curved toward the cliff rock for the purpose of safty dispersal of seeds. The capsules with non-fertilized seeds do not get large and their inflorescences do not have any movement described above. Temperature is getting higher. At nearly final stage of flowering, plants of the species begin to produce some more leaves and capture preys. By middle August, they stop eating preys and complete their annual growth and finish seed dispersal. Their leaves turn yellowish color and plants set wilter bulbs. Some plants in warmer microclimate hold yellow colored leaves until October. In November, falling leaves of deciduous trees, winter bulbs go a little bit underground. In February, Mt. Koushin has deep snow over 1 m deep on the ground at the top down to Ginzan-Daira, former shrine office and to Tsurukame-Iwa Rock. Since steep cliffs of the habitat for *P. ramosa* are overhung, they do not deposit snow as well as being icebound and are very dry perhaps close to zero in water content. Dried dead leaves of the plants physically get erect and bundle winter bulbs. Winter bulbs in early winter contain much water and are, thus, hard. Then, they get soften in late winter. From late May to June, the cliffs of the habitat have much water and even drip water. Plants of *P. ramosa* may have correlationships between growth in this season with much water and new growth and flower numbers for next year. In July to the next April, the habitat is very dry and thus, the plants of *P. ramosa* are seemed to receive water from fog.

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