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Japanese giant flying squirrels and religious sanctuary forests

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Japanese giant flying squirrels *Petaurista leucogenys* are common in temperate forests at low-elevation mountains. They live also in sanctuary forests of temples and shrines on flat land. This species is exclusively arboreal, and feed entirely on plant material. A total of 139 plant species have been listed within the wide distribution range, in which 135 were tree species. Most feeding records were found in Fagaceae, Pinaceae, Rosaceae, Betulaceae, Cupressaceae, and Aceraceae. Only 15 species contributed >2%; *Pinus* and *Prunus* were important genera. Seven main food items were seeds (33.9%), leaves (23.2%), staminate cones of conifers (12.4%), buds (9.8%), fruits (7.8%), and angiospermous flowers (7.4%).

Food items were quite different between spring and autumn. From March to May, flying squirrels consumed buds, young leaves, staminate cones of conifers, and flowers. From July to December, they ate various seeds including acorns and pine cones, and mature leaves. Monthly food availability is indicated with the ratio of mature leaves in feeding records and the number of food items. April – May was the lowest ratio of feeding mature leaves and the largest number of food items.

Petaurista leucogenys has two mating seasons per year:

May – June and November – January. Based on the mean gestation period of 74 days and the earliest known age of feeding at 47 days, the initiation of feeding by spring litters coincides with the lowest ratio of mature leaves and with the largest number of food items. Similarly, the initiation of feeding by summer litters coincides with the 2nd bottom of mature leaves and increased abundance of food items.

Temples and shrines are surrounded with protected forest. Tree hollows in large trees provide their nesting sites. Pine, maple, and cherry trees have been planted, which provide various parts of food items through the seasons.

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