

Recurved phyllaries of *Taraxacum* function as a floral defense : experimental evidence and its implication on the evolutionary history of *Taraxacum*

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論 文 内 容 の 要 旨

Florivores directly decrease reproductive success of plants by consuming pollen and seeds, and thus plants often have some defense mechanisms against florivory. Here, I show that recurved phyllaries of an agamospermous hybrid dandelion *Taraxacum japonicum* x *officinale* function as a physical barrier to florivory by slugs. I allowed *Lehmanna valentiana* an European slug naturalized in Japan to feed on eight pairs of the hybrid dandelion and *T. japonicum*, a Japanese species having erect phyllaries. Consequently, slugs damaged flowers only of *T. platycarpum*. Slugs moved back from recurved phyllaries or spent more than two times longer on recurved phyllaries than on erect phyllaries. When recurved phyllaries were experimentally removed, slugs spent on phyllaries of the hybrid as long as on phyllaries of *T. japonicum*. In addition to recurved outer phyllaries, the hybrid dandelion has erect inner phyllaries longer than those of *T. japonicum* that effectively concealed florets at night and protected them from florivory by slugs. Using taxonomic literature, I confirmed that recurved phyllaries evolved in many sections and species of Europe but rare in East Asia. These findings suggest that European dandelions acquired recurved phyllaries as a defense mechanism under antagonistic coevolution with florivorous slugs but this coevolution did not occur in East Asia.