

Masahide KURITA* : Some Notes on the *Rhododendron* Plants from Japan

VIII. Winter Mixed Buds of Some Species

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A taxonomy of the genus *Rhododendron* is partly based on 3 different types of buds : a leaf-, a flower- and a mixed bud, and on the relative position of the leaf bud to the flower bud in a top of shoot. In the subgenus *Anthodendron* (REICH.) REHDER, the mixed bud of sect. *Tsutsusi* (ADAN.) SWEET is reported to differ in structure from that of sect. *Sciadorhodion* REHDER et WILSON.

The present study was made on the winter mixed buds of some species belonging to the 2 sections mentioned above.

Materials and Method The used species in sect. *Tsutsusi* are *Rh. macrosepalum* MAXIM. and *Rh. obtusum* (LIND.) PLAN. var. *kaempferi* (PLAN.) WILSON. The used ones in sect. *Sciadorhodion* are *Rh. dilatatum* MIQ. var. *decandrum* MAKINO and *Rh. wadanum* MAKINO. All the material plants were collected from Yokkaichi city and Komono-machi in Mie prefecture in the latter part of January and in the early part of February. An observation was carried out within a day or 2 after collecting.

In a deciduous plant, a boundary is clear between a winter mixed bud and the stem connecting with the bud. On the contrary, the boundary in semi-evergreen and evergreen plant is difficult to define, due to unfalling of successive intermediate types (incl. leaves developed in late summer) between a typical leaf (developed in spring) and a typical bud scale. Those intermediate types are called a leaf-like scale in this paper. The winter bud of the latter 2 plants is here defined as the shoot top (1) which is covered over with typical scales or with typical and leaf-like scales, instead of typical leaves, and (2) which is above the lowest internode reducing to nearly zero in length seen with a naked eye.

Observation The winter mixed bud of *Rh. macrosepalum* has fairly developed flower buds, which are projected from axils of mixed bud scales, on an upper part of mixed bud axis. Each flower bud shows 2 narrow scales peculiar to it (Fig. 1). The middle part of the mixed bud axis puts out typical bud scales.

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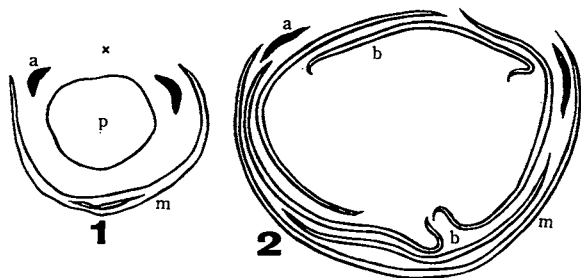


Fig. 1 and 2. Transverse section of flower bud in winter mixed bud of *Rh. macrocephalum* (1) and *Rh. dilatatum* var. *decandrum* (2). 1, Sect. through pedicel. 2, Sect. through corolla (stamen and pistil omitted). p, Pedicel. a (solid), Scale of flower bud. b, Lobe of corolla. m, Scale of mixed bud. x, Axis of mixed bud. $\times 18$.

veloped in 3 to 6 broad scales peculiar to it, besides the covering by a leaf-like scale belonging to the mixed bud. The 3rd or 4th axillary leaf bud from the lowest is often the largest of all.

The typical scales of mixed bud show a cavity (Fig. 3 c) on each side of main vascular bundle. The similar cavity is also found in the lower part (corresponding to a petiole) of leaf-like scale of mixed bud.

There is no difference between the above mentioned result and that obtained from an observation of *Rh. obtusum* var. *kaempferi*.

In *Rh. dilatatum* var. *decandrum*, there occur fairly developed flower buds, which are projected from axils of mixed bud scales, on an upper part of mixed bud axis. Each flower bud has 2 scales peculiar to it, they being somewhat broad (Fig. 2). The remaining part of the mixed bud axis has usually typical scales only. A leaf-like scale is scarcely found, its lamina-like part being very small. Axillary leaf buds of various size are found at almost all axils of both the scales. The 3rd or 4th axillary leaf bud from the lowest is often larger than any other, having 3 young leaves. Each of axillary leaf buds is always enveloped in 3 to 6 young scales peculiar to it, besides the covering with a typical scale or rarely with a leaf-like scales belonging to a mixed bud (Fig. 5 and 6).

A cavity is found on each side of main vascular bundle in the typical scale of mixed bud (Fig. 5) and in a lower part of leaf-like scale.

A rudiment of an axillary leaf bud is scarcely found at the base of each scale. The lower part of the mixed bud axis has leaf-like scales, and shows a young axillary leaf bud with one to 3 young leaves in almost all cases. As shown in Fig. 3 and 4, each of the axillary leaf buds is always en-

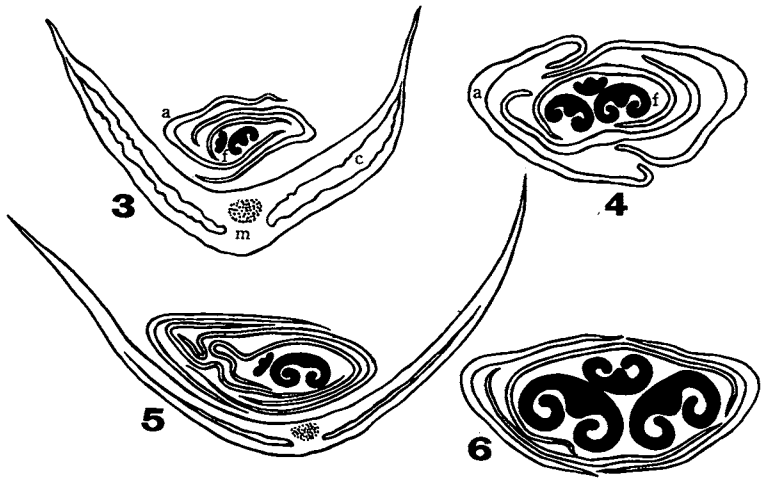


Fig. 3 - 6. Transverse section of leaf bud in winter mixed bud of *Rh. macrosepalum* (3 and 4) and *Rh. dilatatum* var. *decandrum* (5 and 6). 3 and 5, Mixed bud scale and its axillary leaf bud. 4 and 6, Axillary leaf bud. m, Scale of mixed bud. a, Scale of axillary leaf bud. c, Cavity. f (solid), Leaf of axillary bud. $\times 25$.

The above result is closely similar to that obtained from an observation on *Rh. wadanum*.

Discussion It was noted (NAKAI 1922) that, in mixed bud of sect. *Sciadorhodon* (= *Verticillatae*) a flower- and a leaf bud have each the scales peculiar to it, and that, in mixed bud of sect. *Tsutsusi* a leaf bud has no or 2 scales.

The present observation shows that, in mixed buds of both the sections each of the axillary leaf buds is always covered over with several scales peculiar to it, and each of flower buds has always 2 scales peculiar it. According to the above result, there is no difference in bud structure between both the sections.

References

- KITAMURA, S. and MURATA, G. 1974. Coloured illustrations of woody plants of Japan I. Hoikusha, Osaka. NAKAI, T. 1922. Trees and shrubs indigenous in Japan proper I. Seibido, Tokyo.

摘 要

ヤマツツジ節の2種(モチツツジ, ヤマツツジ)とオンツツジ節の2種(トサノミツバツツジ, トウゴクミツバツツジ)において, 混芽が観察された。

いずれの種においても、混芽中の花芽は固有の鱗片2枚をもち、葉芽は固有の鱗片3～6枚でかこまれ、さらに両芽は混芽の鱗片でおおわれている。この結果から、混芽の構造に関して、両節の間には差異がないといえよう。
