

栗田正秀\*：日本産ツツジ属植物雑報 IV. レンゲ  
ツツジにおける1種の毛。

Masahide KURITA\*：Some Notes on the *Rhododendron* Plants from  
Japan IV. Certain Hairs of *Rh. japonicum*.

According to COWAN (1950), the trichomes of the genus *Rhododendron* were classified into three groups: papillae, hairs and scales. Further the hairs were noted to be divided into two subgroups: simple unbranched hairs and compound branched hairs, the former falling into two categories: unicellular and multicellular. In *Rhododendron*, a detailed study was not yet made on the simple unbranched unicellular hair (Abb. SUU-hair) because this has less interest for an investigator than any other trichome. Then, an observation was carried out on the SUU-hairs of *Rh. japonicum* by the present author.

#### Materials and Methods

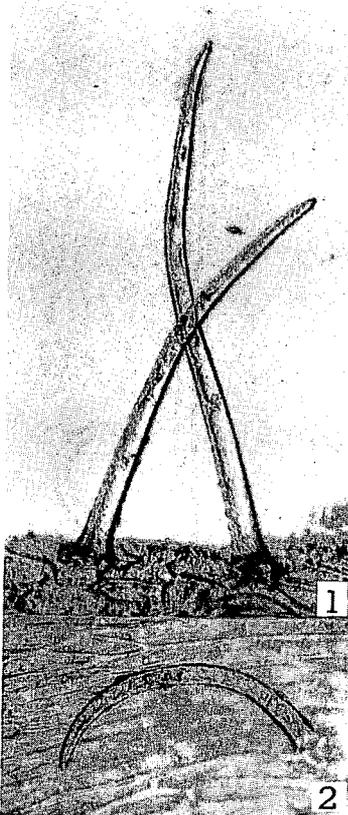
The materials used are collected from Matsuyama City and Kuma-cho, Ehime Prefecture, Obihiro City, Hokkaido, and Asahi-cho, Mie Prefecture. The SUU-hair was enumerated within a circle (having no main vein, no lateral vein and no thick veinlet) with a diameter of 0.44 mm in an upper surface of central part of fully developed leaf-blade. Further, there was enumerated the SUU-hair on both an upper and a lower surface of single veinlet which is more in diameter than  $64 \mu$  and which runs parallel or nearly parallel with main vein.

#### Observation

I. Morphology The SUU-hair is a projection of aerial wall of epidermal cell which is round and usually smaller in surface view than any other epidermal cell. The hair is about  $12 \mu$  in width of its basal part and varies from 80 to  $600 \mu$  in its length. A large number of hairs, however, measure about  $170 \mu$  in length. In side view, almost all of short SUU-hairs (Fig. 2, 4) draw arch, and long SUU-hairs (Fig. 1, 3) are usually straight or nearly straight. The latter hairs show rarely one or two septa which are much thinner than an ordinary cell wall (Fig. 3 s). There are many warts on the

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Figs. 1 and 2. Single unbranched unicellular hair of *Rhododendron japonicum*. 1, from a side of basal part of main vein in lower surface of leaf.  $\times$  ca. 250. 2, from a middle part of the same.  $\times$  ca. 340.

outer surface of the SUU-hair (Fig. 3, 4), each wart being somewhat elongated along the long axis of hair.

II. Hair-bearing part The long SUU-hairs are usually found at the following parts of plant: 1) each side of basal part of both a main vein and a thick lateral vein in lower surface of leaf-blade, 2) corolla except for its inner upper part, and 3) basal part of both a style and a filament. The short SUU-hairs are found at the following parts: 1) upper surface of leaf-blade, 2) veins more in diameter than  $64 \mu$  in lower surface of leaf-blade, 3) petiole except for an upper surface of its basal part, 4) green part of young stem, and 5) ovary.

III. Number The SUU-hair number per the circle mentioned already is  $M \pm m = 3.2 \pm 0.3$ . These SUU-hairs are much more in number than a simple unbranched multicellular hair (SUM-hair) grown up on the same area. The ratio between the SUU- and the SUM-hair is 19.4 : 1.0. A veinlet more in diameter than  $64 \mu$  has 12.7 SUU-hairs on an average in its upper surface and 27.7 ones in its lower surface, showing the ratio of 1.0 : 2.2.

#### Discussion

By COWAN (1960), there were described two different SUU-hairs: a filiform and an acicular hair. The former is considered to correspond with the long SUU-hair in the present paper and the latter to correspond with the short SUU-hair. Cowan reported that the largest of the acicular hairs was occasionally furnished with a short foot of 1-2 small isodiametric sclerenchymatous cells. The present author has not recognized such a hair.

There was found no difference in the SUU-hair-bearing part between an

immature and a fully mature leaf of *Rh. japonicum*. This is positive in denying that all the hairs at some part, e.g. the upper surface of leaf-blade, fall with a maturation of leaf. Judging from the observation on SUU-hairs at young stem, it is clear that the falling of hair from stem is based on the destruction of epidermis. In leaf, the destruction is not thought to occur only in an epidermal cell furnished with a hair, and then to lead the falling of hair. It is probably certain that the SUU-hair remains on the leaf so far as the falling is not raised by an external factor.

Being restricted within Japanese wild *Rhododendron* species, *Rh. albrechtii* MAXIM. is the species related closely to *Rh. japonicum* (OHWI 1975, KITAMURA and MURATA 1974). The former, however, has no or a few SUU-hairs on the upper surface of its leaf-blade (unpublished) in a marked contrast to the latter. The two species seem to be different in the SUU-hair number from one another.

#### Literature cited

COWAN, J. M. 1950. The *Rhododendron* leaf. a study of the epidermal appendages. Oliver and Boyd, London.

KITAMURA, S. and MURATA, G. 1974. Coloured illustrations of woody plants of Japan I. Hoikusha, Tokyo.

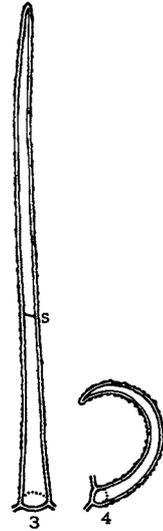
OHWI, J. 1975. Flora of Japan. Shibundo, Tokyo.

#### 摘 要

レンゲツツジでみられる毛の1種に、単細胞で分岐しないものがある。この毛は表皮細胞の外側膜が突出してできたもので、その表面にこぶ状の隆起がある。長さは80~600  $\mu$ で、短いものは弧状にまがっており、長いものはまっすぐである。

この毛は葉身では、その上面全体で、下面では主脈、側脈および細脈のうちで太いものの上だけにみとめられる。この分布は葉の老若によって変わらないようである。

ムラサキヤシオツツジでもこの種の毛をもつが、その数が少く、葉身上面でも全然ないか、みられてもきわめてわずかであった。



Figs. 3 and 4. Single unbranched unicellular hair of *Rhododendron japonicum*. 3, from a side of basal part of main vein in lower surface of leaf. 4, from an upper surface of leaf.  $\times 230$ .