

Rhododendrons in New Guinea

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EDITOR'S NOTE. The following notes were made by Mr. Stonor during his short stay in New Guinea. He had no previous knowledge of the Rhododendrons to be found in this area and had the opportunity of familiarizing himself with only a few of the hundred or more species in the field. It has been difficult to identify his specimens with certainty, because much New Guinea material was destroyed during the war in Berlin and there is none in Edinburgh. Undoubtedly the majority of them are close to previously described species. Determination cannot be made with certainty at present but an indication of affinities is given. The illustrations were drawn by W.C.Turner, student gardener at the Royal Botanic Garden, Edinburgh, from the dried material, in order to indicate the most unusual features of the New Guinea Rhododendrons which Mr.Stonor collected. Seed of three of his numbers has germinated.

The vast island of New Guinea is reliably held to include among its remarkable flora over a hundred species of Rhododendron. We must therefore look on it as the home of a very important part of the genus. In spite of the tendency to regard Rhododendrons as essentially part of the Sino-Himalayan flora, with a few outlying representatives in Oceania, Europe, and the Americas, it is only logical that the present outlook be revised and that we think of the group as having a distribution in New Guinea second only to the Himalayan region. It is all the more interesting therefore to consider the ecology and general nature of these plants found in the New Guinea mountains.

At the outset it can be stated quite categorically that we must forget our preconceived ideas as to what goes to constitute a typical Rhododendron, both as to form and to their habits of growth in the field. I can state this with all the more confidence since, less than a year before going to New Guinea, I

had visited the Tibetan Border and seen for myself the dense stands of Rhododendrons in the Himalayas.

Rhododendron-hunting in New Guinea is rather akin to Orchid-hunting in other parts. There are plenty of Rhododendrons there, but one has to go and look for them. One may search for two hours without seeing more than a few plants and then stumble on an area with a goodly sprinkling. But never in any sense do they stand out as they do in the Himalayas. This is partly because the plants themselves are not large, and partly because, like Orchids, they are so sporadic in their distribution.

A very essential factor controlling their habitat and mode of growth is the New Guinea climate. In the Himalayas one gets a very sharp alternation of warm wet seasons with cold dry ones. For one part of the year the plant world is flooded out and then for the remainder is compelled to rest through the drought. In New Guinea this is not so. There is no real dry season. Especially in the mountains there is a remarkably equitable climate. Some months, it is true, are better than others, but there is always the rain, the drizzle and the fog. Never do the Rhododendrons have a resting period. This applies to all other plants as well. This condition of high temperatures and copious rainfall culminates in the moss-forests, where growth is so dense that one plant does not leave room for another. Consequently the large forms of Rhododendrons are lacking. The genus has had to adapt itself to the very specialized climatic conditions. To these, epiphytes and the terrestrial species which grow in semi-swampy ground are best adapted. The tree-like Rhododendrons, so typical of the Himalayas, have been entirely suppressed. Instead, within the limits of small-growing forms, which have had to take their place as subordinate members of the plant community in which they are found, we have a striking flora.

From my own field observation a great profusion of Rhododendron species are found from the 5,000-foot level upwards. Nothing seems to be known as to the minimum elevation at which they grow here. I have seen the orange-

flowered species aff. *R. lauterbachianum* in semi-open country of an almost tropical nature at 3,000 feet. Unfortunately I did not study the group in the forests at this elevation. It is interesting to note though that it was the only *Rhododendron* which I found at comparatively low altitudes, growing in the open.

Between 5,000 and 6,000 feet there are thousands of square miles of open grass country where again my No. 8 is the only species. Large colonies are never found but only a few isolated bushes in almost every swamp. Although it will do as a garden shrub in drier situations, it is essentially a bog plant, very much like our native Bog Myrtle. There is little doubt that these grasslands are artificial, in the sense that they were produced by progressive destruction of the forest by the native population. In its primeval state this same species was probably characteristic of swampy glades and the edges of forests where I have also found it, as well as on the steep banks of rocky gullies, where it is also common.

In fairly open situations below the tree-line between 5,000 and 9,000 feet I have seen a striking *Rhododendron* with a disc of horizontal tubular white flowers resembling a giant Honeysuckle. This comes near to *R. carringtoniae*. It makes a fair-sized bush about 4 feet high. It seems to be widespread in distribution over the mountains, but it is rather a shy grower for one only sees a few bushes here and there. It also likes damp ground, preferring the edges of the moss-forest or small patches in the forest clearings. I have never seen it in the open grasslands.

Turning to the true forest species, which live in the sub-tropical forests between the altitudes of 5,000 and 10,000 feet, I have found in my limited experience that they are all epiphytes, falling into two main categories. Firstly, there are slender-growing scarlet forms recalling *R. neriiflorum*, which are commonly found on the trunks and branches of the trees a few feet above the ground. There is no question of their forming masses of growth. A few plants over a square mile of forest is all that I have ever seen, and the individual

plant is slender, with delicate growth, 2 or 3 feet long at the most. The only non-epiphyte I have seen of this type (there are doubtless many others) growing below the upper tree limit is the red and orange species, believed to be allied to *R. wentianum*. It is a cliff dweller, clinging to rocky ledges. Unfortunately, it is often sickly in growth.

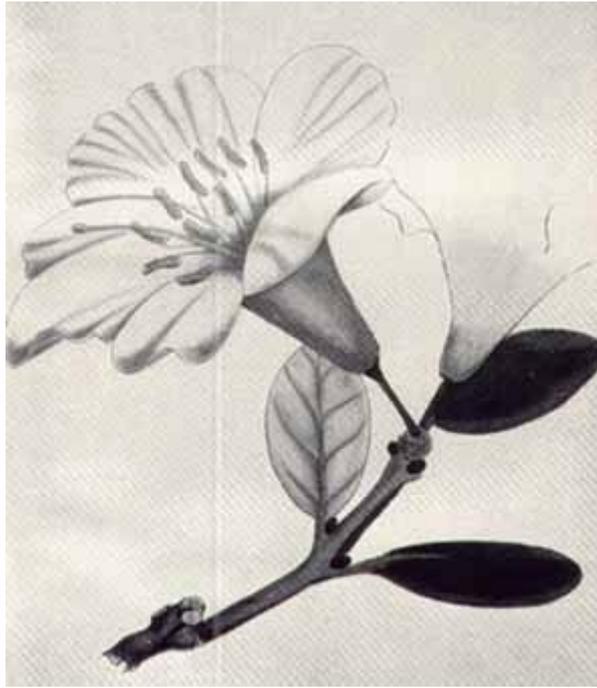
Secondly, the other epiphytic type is the magnificent species with giant white flowers tinged pink of fleshy texture which comes near to *R. devriesianum*. This grows commonly, but individually, over a large area of the Hagen and Bismarck Ranges, not, I think, below 9,000 feet. It is a plant of the dank forests just below the true moss-forest level, and grows on the upper branches of the giant trees, where its huge, lily-like flowers make glowing spots of colour among the greens of the innumerable other epiphytes. This wonderful *Rhododendron* has a rather faint, but exquisite scent, a little reminiscent of the Regale Lily. The tubular-flowered *R. aff. carringtoniae* is also characterized by a delicious scent, not unlike the Honeysuckle of country lanes. Why should they be scented? Surely the New Guinea forests of high elevation have but a small insect population. I think it as good a guess as any that these epiphytes are pollinated by the Lory parrots, some of which live in the moss-forests, and the more so as we know parrots to be among the few birds with a sense of smell.

As one climbs up the mountain slopes to an elevation of 9,500 to 10,500 feet, one comes to the true moss-forest, where every tree is festooned with the reeking moss, and one has literally push one's way through the hanging growths. It is unlikely that this zone houses any *Rhododendrons* although some remarkably aberrant form might be found. This brings us to the tree-line, and here in the Bismarck Mountains the characteristic type is the tall, rather scraggy, scarlet-flowered species coming near to *R. dasylepis*. It is a very common shrub exactly on the borderline between the forest and the open tundra country. It grows as a rather tender shrub, hugging the edge of the timber and reaching up to 15 feet in height. It is the only *Rhododendron* I have

seen in New Guinea which makes an attempt to form a stand, but its efforts are feeble compared to Himalayan species.

We come now to the remarkable tundra country above the tree-line. There are literally thousands of square miles which are as yet unexplored and undoubtedly will yield up many botanical wonders. The country is essentially grass-covered and very boggy. Rhododendrons grow abundantly, but as always individually. One may see three species in a hundred square yards, but probably not more than a few of each. Characteristic is my No. 6, a small-leaved, very upright Rhododendron, a few feet in height, and reminiscent of giant Heaths. Although these Rhododendrons are typical of the flora of the tundra country, they are in no sense spectacular. The most remarkable form is the completely dwarf *R. fuchsioides* aff., which is common among the bog grasses. It is comparatively prostrate, with its scarlet scentless flowers standing upright a few inches above the mat of leaves. The extra-ordinary feature of this plant is the fact that its woody growths are buried in the bog by a foot or more of bare stem, so that the leaf-bearing shoots and the flowers are, as it were, floating on top of the ground.

In this brief paper I have tried to summarize a few observations which I made while in New Guinea. From the illustrations which accompany this article you may obtain some idea of the variety of delightful new types of Rhododendrons which await a thorough botanical investigation. What I have tried to do is to emphasize the diversity of forms and the marked differences of habit which these New Guinea Rhododendrons show when compared with the familiar Himalayan species.



Rhododendrons in New Guinea
R. devriesianum vel aff. (Stonor 10)

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