

Secondary flowers: monstrous growth in *Rosa hybrida* Villars (Rosaceae)

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Abstract

Monstrous development of secondary flowers has been recorded in the *Kiss of Fire* cultivar of hybrid tea group of roses providing justification in favor of explaining 'flower as a modified shoot'.

Roses are the most popular flowers in the world and have probably always been the most popular flowers. Roses have been expressed as symbols of love, beauty, war and politics almost from the beginning of human civilization.

There are a few roses (*Rosa hybrida* Villars) of 'hybrid tea' group in my garden in front of our house that is located near the city of Siliguri in Darjeeling Terai, about 10 km in the south from the base of the Himalayas. While taking care of these plants, one day I noticed in a 7-day old flower of the rose cultivar 'Kiss of Fire' some small green bud like structures are appearing from the base of petals. Gradually, these structures started enlarging and took the normal shape for the buds of that cultivar. Finally, it took about 14 days to the largest of these buds to bloom. However, such monstrous development took place in only one flower of the plant.

At the beginning, 15 flower buds were initiated; seven of those reached the maturity and finally blooming within the mother flower (Figs. 1 – 6). From the close scrutiny of the photographs in Plate-I it will reveal that not only these '*secondary flowers*' (terminology suggested by A.P. Das during discussion) are very similar in structure with the primary flowers some are also accompanying with reduced leaves and distinct pedicels. These monstrous secondary flowers survived only for about five days and then gradually dried up.

I failed to trace any record of this type of monstrous development in roses but from the enquiry with the local rose growers I came to know that such development is sometimes found in this particular cultivar of rose. In the opinion of local rose growers towards the beginning of the rose growing season in this part of the country, i.e. during late October to December when there is robust vegetative growth terminating in the formation of a giant blossom of hybrid tea group of roses, this Kiss of Fire cultivar sometimes produce monstrous secondary flowers inside a normal primary flower.

This may be treated as a beautiful example for explaining 'flower is a modified shoot', where these flower buds are developing from the suppressed axillary buds of petals (in 3 whorls) providing proof that petals are basically highly modified leaves.

However, further studies, including serial anatomy of the flower receptacle are essential to understand the actual morphological nature of these secondary flowers.

Acknowledgements

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Plate - I



Figs. 1 - 6: Different stages of development of monstrous secondary flowers in Kiss of Fire cultivar of *Rosa hybrida*