

PENETRATION OF SCION BY STOCK

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DURING a casual observation of a few rose plants growing in my compound, in the month of August, 1917, I happened to notice one budded plant with 5 shoots emanating from the region where the original bud was inserted on the stock. The scion is a *Paul Neron* rose. The plant was originally grown in the Ganeshkhind Botanical Gardens, Kirkee, India. The bud was inserted on a one-year-old stock about the month of February, 1916. The scion was pruned once about the month of April, 1917. On a very careful examination of the five shoots, it was found that the center one, which was older, thicker and riper than the rest, was the original scion and three of the remaining four were shoots which clearly showed the characters of Edward rose. Two of these shoots 2, and 3, when I first noticed them, showed one flower each, which was undoubtedly our common Edward rose, while the center one, about a week later, showed a bud which was quite similar to that of a *Paul Neron*. It is regrettable that the fully expanded flower from this bud was, however, pilfered away by somebody before the flower could be observed by me. The plant was taken to the Agricultural College and shown to Dr. Burns, Economic Botanist to the Government of Bombay, before photographing, which was done on September 8, 1917, just before the bud appeared. The flowers of the Edward rose dropped their petals during transit to the college for photographing.

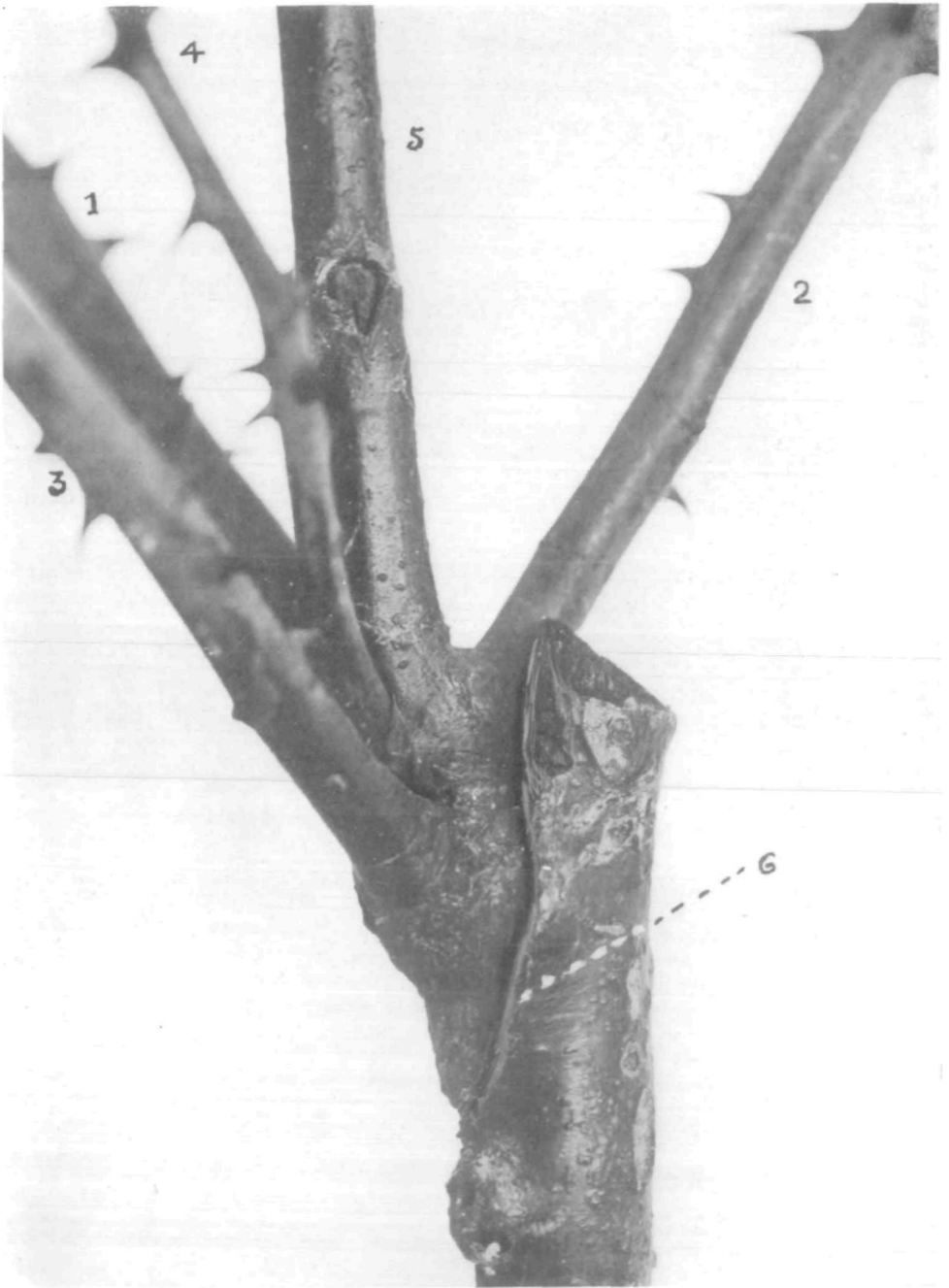
ORIGIN OF SHOOTS PROBLEMATICAL

The question of interest is—how did four shoots of the stock appear from the budwood of the scion? Usually

vigorous outgrowths from the stock appear below the point of insertion of the scion and these are usually rubbed away, so that any depletion of the supply of sap to the scion is prevented and all that is sucked up by the stock, is available for the use of the scion. In this case the shoots of the Edward rose are about 9 or 10 weeks old (by August-September, 1917). They seem to be derived from adventitious buds which might have appeared on the stock below the budwood, even after latter had become well established and forced their way through the tissue of the scion. An examination of the photograph shows that the shoots have clearly originated from the budwood within the area of the callus formed at the margin of the slit made for budding, and not from any doubtful region such as the margin of the slit or elsewhere closer.

I am adding the following after observing the plant for a month and a half since noting the above. Shoots Nos. 2 and 3 flowered again on October 25, 1917. The flowers were Edward roses. This confirms previous statement regarding shoots Nos. 2 and 3. Shoot No. 1 has grown very long and vigorously. It is expected to flower in the next few days and confirm its nature.

From the comparative vigor of growth, I conclude that Nos. 1, 2 and 3 are shoots of Edward roses derived from the stock and No. 4 is *Paul Neron*, which has made no further growth since first photographing. Similarly No. 5 also has made no further growth, both being held in check by the superior power of Edward shoots of drawing or sucking up more sap than could be done by the scion from the stock.



AN UNUSUAL BUD BREAK

The budded region of the plant showing the positions and origin of shoots. The shoots 1, 2 and 3 belong to the Edward Rose variety and 5 is the scion. The swollen and projecting portion is the original budwood. The raised edge of the bark of the stock is shown by 6. (Fig. 16.)