

## VIVIPARY IN *ATRIPLEX CRASSIFOLIA* AND *SUEDA FRUTICOSA*

BY

AMAR CHAND JOSHI.

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*Atriplex crassifolia* C. A. Mey. and *Sueda fruticosa* Forsk. are two common plants of Lahore. The former grows abundantly near dwellings and cultivated soils, which have become rich in mineral salts by the decomposition of refuse and manure heaps. The latter can tolerate even a still larger amount of mineral salts in the soil and is one of the common plants of the *Kalar* soils. The common method of propagation in both these species is by seeds which when ripe fall off from the parent plant and grow in the soil. In December 1929, however, when the writer had gone out to collect some material of these plants for an anatomical study, he found the seeds of *Atriplex crassifolia* developing beyond the embryonic stage and germinating without undergoing any resting period even on the perfectly green parts of the plant. Some of the radicles which had pierced through the seed-coats, measured even a little more than one centimetre, about five times the length of the seed itself. On breaking open the seed-coats, it was found that in many cases the cotyledons had become green though these were still within the testa. The material was brought to the laboratory and photographed.

In December 1930, when the writer had again gone out on a similar purpose as before, viviparously growing seedlings were also observed on perfectly green shoots of *Sueda fruticosa*. These in their appearance and structure were quite similar to those of the first plant.

When the writer first discovered these viviparously growing seeds in *Atriplex crassifolia* he was inclined to regard it as an uncommon phenomenon. Later considerations, however, especially after the finding of viviparous seedlings in *Sueda fruticosa*, have made him believe that this may be of more common occurrence. The seeds of these two plants ripen in the month of December, which is rather a wet month in Lahore and their viviparous growth may be caused by such moist weather. It is, however, not certain whether these seeds, which germinate on the plant itself, do later on grow in the soil or play any appreciable part in the dissemination of these species.

Another point to be considered in this connection is the fact that these two plants, *Atriplex crassifolia* and *Sueda fruticosa*, are halophytes and many plants closely related to them grow on the seashore, the region where the phenomenon of vivipary is most conspicuously displayed. To the writer's knowledge, however, it has not been described in any of the Chenopodiaceæ growing there, but its occurrence in two Lahore Chenopodiaceous genera makes it probable that it may also be found there. That it has not been recorded so far, may be due to the small and insignificant size of their seeds. The rare occurrence of the phenomenon of vivipary in the Lahore plants, under favourable weather conditions, may then be a relic of their former home on the sea-shore; or, and this appears to be more probable, as has been more fully discussed by the writer elsewhere, *Journal of Ecology*, vol. XX, 1932 (in press), the viviparous habit of the seashore plants may have been derived from such occasional variations in other places.

BOTANY DEPARTMENT,  
UNIVERSITY OF THE PUNJAB,  
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A. C. JOSHI—Vivipary in *Atriplex* and *Sueda*.



*Atriplex crassifolia*. Part of the inflorescence, showing seeds, germinating on the plant. About natural size.

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