that alkaloids frequently arise through decomposition of the proteins, as evidenced by an increase in alkaloid content at a time when protein is breaking down.

Based on studies of the protein composition of lupine species by means of immunoelectrophoresis, Glowacki (1975 *cf* Waller and Nowacki 1978) established that the beginning of alkaloid production coincides with the disappearance of a majority of the storage proteins in the seed. The sequence of events in the present study in *S. viarum* are in conformity with the suggestions of James (1950) and Glowacki (1975). First the epidermal cells of the young seed were devoid of starch and proteins but rich in cytoplasmic RNA. Later, there was heavy accumulation of both starch and proteins. Maximum accumulation of a PAS-positive substance in the cytoplasm was observed to coincide with the disappearance of starch and proteins, indicating that both starch and proteins might have been utilized for the synthesis of solasodine. In all probability, solasodine is synthesized in this exotestal layer of the seed coat, which also acts as the accumulating tissue. While comparing solasodine biosynthesis in the seed and seedling callus of *S. khasianum* grown *in vitro*, Chaturvedi *et al* (1979) recorded higher solasodine content in the seed callus. The higher biosynthetic potentiality of the seed callus *in vitro* might conform with the situation *in vivo* supporting the view that seeds might be the sites of alkaloid synthesis in the plant.

It has been reported in *S. viarum* that solasodine content is maximum in berries which are just turning yellow and it decreases as the berries ripen fully (Varghese *et al* 1979). This is in conformity with the results obtained in the present study, wherein maximum accumulation of the PAS-positive substance was recorded in greenish yellow berries. But, in the fully ripe yellow berries, the accumulated substance showed signs of degradation and disappearance. This is corroborated by the absence of electron-dense clumps in exotestal cells of diploid, autotetraploid and tertiary trisomic plants examined under the electron microscope.

Thus, it appears that in *S. viarum*, the exotesta of the developing seed is probably the site of solasodine synthesis and accumulation. There is a rapid expansion of the cells of this layer during development culminating in its transformation into a mucilage layer.

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References

Chaturvedi H C, Chowdhury A R and Uddin A 1979 Solasodine biosynthesis in seed and seedling-callus of *S. khasianum* Clarke grown *in vitro*; *Indian J. Exp. Biol.* **17** 107–109

Fahn A 1979 *Secretory tissues in plants* (London: Academic Press) pp 751–759

Hyde B B 1970 Mucilage producing cells in the seed coat of *Plantago ovata*, developmental fine structure; *Am. J. Bot.* **57** 1197–1206

James W O 1950 Alkaloids in the plant; in *The alkaloids – chemistry and physiology* (eds) R H F Manske and H L Holmes (New York: Academic Press) vol. 1, pp 1–87

Karnovsky M J 1965 A formaldehyde-glutaraldehyde fixative of high osmolarlity for use in electron microscopy; *J. Cell Biol.* **A25** 137–138

Krishnan R 1983 Multilocational varietal evaluation trial on *Solanum viarum* Dunal (syn. *S. khasianum* var. *chatterjeanum*); *Proc. V. AICRP Workshop on medicinal and aromatic plants*

Meenakshi S and Krishnan R 1996 Effect of grafting on solasodine content in *Solanum viarum* Dunal; *Planta Med.* **62** 360–361

Nanaiah K M and Krishnan R 1996 Solasodine content and berry yields in self- and inter-ploidy grafts of steroid-bearing *Solanum viarum*; *Indian Drugs* **36** 286–289

Saini A D 1966 Alkaloid content of *S. khasianum* Clarke; *Curr. Sci.* **23** 600

Varghese S, Sharma N S, Desai J D and Chiney J J 1979 Dynamics of solasodine biosynthesis and accumulation in *Solanum khasianum* Clarke; *Indian J. Pharm. Sci.* **41** 198–200

Waller G R and Nowacki E K 1978 *Alkaloid biology and metabolism in plants* (London: Plenum Press)

Yaniv Z, Weissenberg M, Palevitch O and Levy A 1981 Effect of seed number and fruit weight on content and localization of glycoalkaloids in *S. khasianum*; *Planta Med.* **42** 303–306

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Title: Interaction of indolicidin, a 13-residue peptide rich in tryptophan and proline and its analogues with model membranes.

Authors: *C Subbalakshmi, V Krishnakumari, N Sitaram and R Nagaraj*

In the 'Contents' page of the above issue, the name of the last author of the above paper was wrongly printed as N Nagaraj. It should be read as R Nagaraj.