chloride gave a number of products, two of which corresponded (t.l.c. 2 systems) to the tigloyl esters of tropine and ψ-tropine.

Other fractions, some of which are consistent in molecular weights and spectroscopic properties with esters of other tropanols (e.g. I; $R^1 = H$, R^2 and $R^3 = H$ or OH) and trimethoxybenzoic and trimethoxycinnamic acids are currently under investigation.

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Preliminary studies concerning the metabolism of hyoscine and hyoscyamine in the Solanaceae

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The aerial parts of *Solandra grandiflora* Sw. and *Anthocercis viscosa* R.Br. contain esters of tropine and nortropine as principal alkaloids; little or no hyoscine, apohyoscine, norhyoscine and oscine has been found in the specimens examined (Evans, Ghani & Woolley, 1972; Evans & Treagust, 1973).

To study the metabolism of hyoscine in the aerial parts of these plants (−)-hyoscine sulphate solution was infiltrated into shoots of intact *S. grandiflora* plants during 3 to 5 h. Shoots were harvested after 2,4,8 and 16 days and subsequently analysed. In addition to the normal alkaloids of the plants the injected shoots contained, in all cases, apohyoscine, (±)-norhyoscine, oscine (all characterized by t.l.c. and by mixed m.p. and i.r. spectrum of picrate). (±)-Hyoscine was isolated from all the injected shoots. It may be inferred that the new metabolites arose from hyoscine and that racemisation of the optically active bases is in keeping with the normal occurrence of atropine and noratropine in the plant. In another experiment, hyoscine-G-^{14}C fed as the sulphate solution to intact *A. viscosa* plants gave rise to the production of labelled apohyoscine, norhyoscine and oscine in addition to unchanged hyoscine.

Hyoscyamine metabolism was studied by the separate infiltration of hyoscyamine-G-^{14}C solution and unlabelled hyoscyamine sulphate solution into the alkaloid-free scions of *S. grandiflora* grafted on tomato stocks. Analysis of dried shoots, harvested 21 days after treatment, afforded atropine (t.l.c. and i.r. spectrum, mixed m.p. and radioactivity measurement of the picrate), noratropine and tropine (t.l.c., radioactivity measurement).

These results indicate that in the aerial parts of *Solandra*, atropine, noratropine and tropine can arise from hyoscyamine. Hyoscine, which is of little significance in the normal alkaloid spectra of *Anthocercis* and *Solandra* is subjected to secondary transformation (racemization, demethylation, dehydration and hydrolysis) when injected into the intact shoots. Such findings supplement observations for other genera (Romeike, 1960; 1964; Neumann & Tschoepe, 1966; Hamon & Youngken, 1971) that atropine and hyoscine are not necessarily the end-products of plant metabolism.

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