Height to Node Ratio of Jute Plants

In an earlier communication[1], it was pointed out that, at the fruiting stage, the ratio of the height to the number of nodes of the two varieties of mung (*Phaseolus aureus* Roxb. Syn., *Phaseolus radiatus* Linn.) plants, sown at different times of the year, lies always between 2·2 and 2·9, and that the total height and the number of nodes of the two varieties gradually became similar as the sowing was delayed from August until October.

Calculations made from results obtained while studying the effect of sowing-time on the growth and development of two species of jute, *Corchorus capsularis* Linn. (type D.154), and *C. olitorius* Linn. (type Chinsura Green), sown at an interval of thirty days from April to June (in case of the latter species, however, the first sowing was not done), in replicated plots in the field, showed very similar results. The final observations and measurements, as well as the ratio of the height to the number of nodes, are shown in the accompanying table.

Date of sowing	Corchorus capsularis			Corchorus olitorius		
	Height, H (cm.)	No. of nodes (N)	H/N	Height, H (cm.)	No. of nodes (N)	H/N
April 1	314·17	81·33	3·86	—	—	—
May 1	331·25	88·30	3·75	360·67	107·66	3·55
May 31	257·75	70·33	3·66	269·66	72·66	3·71
June 30	193·00	55·00	3·50	188·70	51·33	3·67

The ratios of height to number of nodes with reference to the different time of sowing lie between 3·50 and 3·86 for *C. capsularis* and 3·35–3·71 for *C. olitorius*. The difference between the highest and the lowest ratios is 0·36 in both cases, whereas for mung[1] it was observed that the difference was 0·7 in both varieties. The ratio is correlated with the time of sowing only in the case of *C. capsularis*. The heights and the number of nodes of the two species, as in the case of mung[1], gradually became almost similar at the later sowings. It has further been observed that the range of variation with regard to the ratio is greater during the early stages of growth of the plants than at the later stages.

This work was done at the Botanical Laboratory, Presidency College, Calcutta. A detailed paper has already been sent elsewhere for publication.
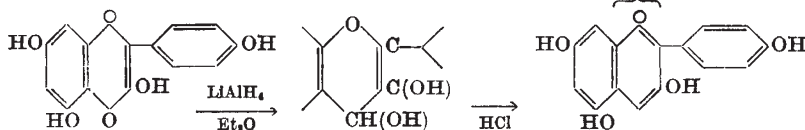
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[1] Sengupta, J. C., and Mukherji, D. K., *Nature*, **163**, 252 (1949).

Conversion of Flavonols into Anthocyanidins

QUALITATIVE experiments with a wide range of γ-pyrones show that they are reduced by lithium aluminium hydride to γ-pyranols, which afford pyrylium salts on treatment with acids.

Anthocyanidins are produced in this way from the appropriate flavonols. Thus kæmpferol yields pelargonidin chloride, which was readily isolated, crystallized and identified.

The process is a general one and naturally works well with methoxylated flavones, though protection of hydroxyl groups is not essential ; it is also applicable to the reduction of xanthones to xanthydrols (thence to xanthylium salts) and to other γ-pyrones.

The advantage of this method resides in the fact that pinacol-like coupling of the molecules is avoided. Thus a paper chromatogram of the reduction product of kæmpferol showed that the pelargonidin was uncontaminated by related pigments. The feasibility of reduction of flavonols should provide a new resource in the study of natural products because the flavylium salts have very characteristic properties

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Preparation of Bicholestatriene from Cholesterylacetate

In a recent communication in *Nature*, Hafez[1] has described the isolation of a yellow bicholestatriene from the mixture of products obtained by the action of N-bromosuccinimide on Δ^6-i-cholestadiene. A compound of similar, if not identical, nature is also occasionally obtained as a by-product of the preparation of 7-dehydrocholesterylacetate from cholesterylacetate and N-bromosuccinimide according to the procedure of Bernstein et al.[2].

In a typical experiment, 5 gm. of cholesterylacetate was dissolved in 60 c.c. of petroleum ether (b.p. 60–70°). After the addition of 2·5 gm. N-bromosuccinimide, the mixture was refluxed with stirring and illumination from an RSP-2 'Photospot' lamp placed 5 cm. below the flask. The reaction was accompanied by the evolution of some hydrobromic acid. After four minutes, 2·55 c.c. of s-collidine was added to the reaction mixture, which was then cooled to room temperature and filtered. The filtrate was concentrated *in vacuo*, and the oily residue dissolved in 30 c.c. of benzene containing 1·5 c.c. of s-collidine. The solution was refluxed for twenty minutes and then cooled and washed successively with ice-cold aqueous solutions of hydrochloric acid and sodium carbonate and with water. Removal of the solvent *in vacuo* afforded a dark oily residue which was dissolved in petroleum ether and chromatographed on a silica gel column. Elution with benzene–petroleum ether (1 : 1) gave 400 mgm. of a yellow material which after two crystallizations from benzene-ethanol melted at 241–244° ; $[\alpha]_D^{25°} = -200°$ (found : C, 88·54 ; H, 11·54 per cent ; molecular weight, 728 ; calculated for $C_{54}H_{82}$: C, 88·70 ; H, 11·30 per cent ; molecular weight, 731). The ultra-violet absorption spectrum of this hydrocarbon in n-hexane shows maxima at 254 ($E = 12·400$), 262 ($E = 13·400$), 350 ($E = 40·200$) and 368 ($E = 44·500$).

It appears most likely that this hydrocarbon is identical with that described by Hafez, and that the mechanism of its