

is the difference between the observed value of ρ_u and the anisotropic part of ρ_u , which may, to a first approximation, be considered as equal to $2\rho_v/(1 + \rho_v)$. This is a function of the size of the scattering centre.⁴

From an analysis of these results, the following significant conclusions can be drawn:—

(1) The appreciable departure of ρ_h from the normal value of unity⁵ shows that all these extracts are colloids. This was verified by the fact that coagulation could be brought about in all these extracts by the introduction of a few drops of a suitable electrolyte.

(2) The values of ρ_u and ρ_v are unique in each case and can be relied upon for the identification of the respective timber woods. The experiments were repeated three times under similar conditions with different specimens of the same species of timber wood and the results were found to be substantially the same as above.

(3) $\Delta\rho_u$ and ρ_v , which may respectively be taken as indicative of the size and anisotropy of the elements of optical inhomogeneity, are different for the different extracts.

It is interesting to note from Table I that the scattering elements in rose wood sol, which have the largest relative size, seem to have the least relative anisotropy; while those in the Chittagong wood sol, which have the least relative size, show the maximum relative anisotropy.

Further investigations with non-aqueous and saturated extracts of different timber woods are in progress.

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SELECTIVE EXCITATION OF SPECTRA BY HIGH-FREQUENCY DISCHARGE

A SERIES of interesting observations about the selective excitation of spectra in discharge tubes by the high frequency oscillations have already been reported^{1,2,3} and some of them also explained in terms of the excitation function^{4,5} of the initial levels involved. From a H-type of discharge tube containing helium and mercury it is found that by varying the frequency of oscillations and using internal or external electrodes we may excite either mostly helium or mostly mercury. For certain frequencies of oscillations the glow remains in the broader portion of the tube and is greenish in colour containing mostly mercury and for other frequencies of oscillations the glow passes through the capillary, connecting the two

broader portions and is greyish red containing mostly helium. The high frequency circuit used is of the Hartley type of the range from 200 metres to 500 metres of wavelength of oscillation. The coupling used in this case seems to be of the loose type, so that the maximum glow is obtained for two positions of the variable condenser.

Some other discharge tubes of the straight type, one containing hydrogen, the other helium with a trace of neon and a third containing neon only have been excited by the same circuit and a detailed investigation made within this range in the visible region by the constant deviation spectroscopy. In all these cases separately taken there does not seem to be any relative change of intensity in the lines and the bands of the same spectrum, though there is a general change in the intensity of the spectrum as a whole. In the case of hydrogen the triplet bands seem to be more prominent in intensity at all the frequencies as compared to the singlet system. The energy available in the circuit seems to be of the order of 10 e.v. to 18 e.v.

These phenomena seem to be understandable in terms of the excitation functions of the initial levels and the mechanism of the wireless circuit used. The details will be published elsewhere.

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TAMARIND SEED "PECTIN"

WE read with interest the note on the above subject by Ghose and Krishna (1945);¹ we were particularly interested in the statement that they "have not been able to get *l. arabinose* amongst the products of hydrolysis or repeat the other data reported by Damodaran and Rangachari (1945).²" The "other data" referred to were: (i) tamarind seed when analysed for pectin according to Carré and Haynes (1922)³ gave no calcium pectate; (ii) analysis for methoxyl and uronic acid gave extremely low values compared to genuine pectin; (iii) no galacturonic acid could be isolated from the product after acid hydrolysis; (iv) on the contrary, the hydrolysate consisted of a mixture of pentose and hexose sugars which were quantitatively estimated and in which *glucose* and *arabinose* were identified.

To compare these data with those obtained by Ghose and Krishna (1945)¹: (i) no estimation of pectin by the standard method appears to have been made by them although this would have been the simplest method of