observer were calculated for each night and a standard deviation σ_m for each star was computed by adopting the formula

$$\sigma_m = \sqrt{\frac{\Sigma\delta^2}{N}}, \qquad (1)$$

where $\Sigma\delta^2$ is the sum of the squares of the deviations, and N the total number of observations made. Due to the uncertainty of the colour indices of long-period variables the Orthoff colour scale[2] used on A.A.V.S.O. charts was employed.

In Table I, the results are given.

TABLE I

No.	Design	Name of Star	Colour	σ_m
1	*053005a*	T. Orj.	0·0	0·36
2	123307	R. Vir	1·3	0·18
3	103769	R. Uma	1·6	0·27
4	115158	Z. Uma	2·0	0·24
5	123160	T. Uma	2·0	0·23
6	181176	W. Lyr	3·0	0·32
7	123961	S. Uma	3·2	0·30
8	142539*a*	V. Boo	3·6	0·22
9	*233815*	R. Aqr	4·3	0·27
10	024356	W. Per	4·9	0·30
11	*021403*	O Cet	5·0	0·27
12	021558	S. Per	5·0	0·22
13	193449	R Cyg	6·0	0·29
14	162119	U. Her	6·5	0·29
15	*162112*	V. Oph	6·6	0·24
16	094211	R. Leo	6·9	0·28
17	054 20*a*	U. Ori	7·0	0·32
18	001755	T. Cas	7·3	0·32
19	201647	U. Cyg	8·4	0·32
20	200938	RS. Cyg	10·0	0·31

Fig. 1 shows the correlation between colour and σ_m for which a relation

$$\sigma_m = 0{\cdot}0124\,C + 0{\cdot}2157 \qquad (2)$$

was derived.

Ford's relation

$$\sigma_m = 0{\cdot}0205\,C + 0{\cdot}176 \qquad (3)$$

can be seen to differ considerably from the new relations derived. The notation σ_m in equation (2) indicates a standard deviation in magnitudes, and C is the colour on the Orthoff scale.

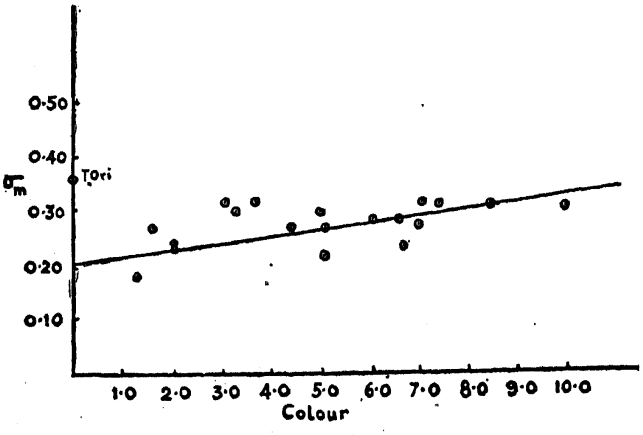

FIG. 1.

It can be seen from Fig. 1, that T. Orionis 053005 *a* has an unusually high error which can be explained as due to the Dove effect.[3]

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1. *Pop. Astr.*, **48**, 9. 2. *A. N.*, 1900, **153**, 141 1912, **192**, p. 85. 3. Furness, *Introduction to the study of Variable Stars.*

LIGHT-SCATTERING IN AQUEOUS TIMBER WOOD EXTRACTS

THERE are immense possibilities, as one of the authors has pointed out some time ago,[1] for the application of the method of light-scattering to the solution of problems in several fields of scientific investigation. One such problem is that of Identification of Timber Woods. The only optical work so far carried out in this connection is by Shah and Singh,[2] who have recently studied the absorption spectra of some aqueous timber wood extracts. They arrive at the qualitative result that the spectra for the different extracts they investigated are very dissimilar. A study of the factors of depolarisation of the light transversely scattered in aqueous timber wood extracts is capable of yielding reproducible and characteristic values for each specimen and would also throw valuable light on the state of dispersion in the medium of the scattering elements.

Five important timber woods from amongst those commonly used to make furniture were chosen for the present work. They are: (1) Teak wood (*Tectona grandis*), (2) Red cedar (*Eugenia manogynum*), (3) Chittagong wood (*Chikrassia tabularis*), (4) Moulmein cedar (*Cedrella toona*) and (5) Rose wood (*Dalbergia latifolia*). Fine shavings of these specimens were obtained by planing and kept inside a desiccator for three days. The extracts were prepared by boiling 2 gms. of the dried shavings with 150 c.c. of pure distilled water for ten minutes. They were then rendered mote-free by filtration through a few layers ash-free filter-paper and transferred into spherical resistance glass flasks. The depolarisation factors ρ_u, ρ_v and ρ_h, with the incident light respectvely unpolarised and vertically and horizontally polarised,[3] were determined by the usual Cornu method. Suitable precautions were taken to eliminate or minimise all the incidental sources of error.

The results of the investigation are given in Table I. $\Delta\rho_u$ in the last column of this table

TABLE I

Extract	ρ_h %		ρ_u %	ρ_v %	$\Delta\rho_u$ %
	Observed	Calculated			
Rose wood	11	15	7·1	0·95	5·2
Red ceder	36	33	8·6	2·2	5·2
Teak wood	32	37	6·2	1·7	2·8
Moulmein cedar	39	41	5·1	1·5	2·2
Chittagong wood	59	63	8·2	3·3	1·8