

### The Velocity of Light.

AT the end of the year 1928, when Michelson had finished his classical experiments, my attention was diverted to the experimental results obtained about the Velocity of Light, that seemed to show a kind of regular decrement.

I have given below the results of the determination of the velocity of light as given by De Bray (*Nature*, page 522, April 4, 1931):—

Year	Authority	Velocity
1902-4	Perrotin	299,901 ± 84 K.M./Sec.
1924-6	Michelson	299,802 ± 30 K.M./Sec.
1926	Michelson	299,796 ± 4 K.M./Sec. <sup>1</sup>
1928	Karolus & Mittelstaedt	299,778 ± 20 K.M./Sec. <sup>2</sup>

De Bray pointed out in *Nature* (April 4, 1931) that the results obtained by different observers show a decrement in the velocity of light. The graph of the results obtained by Michelson also seems to show a similar variation.

Vrkljan (*Zeit. f. Phys.*, **63**, 688, 1930) has proved that according to the General Theory of Relativity of Einstein the decrement in the velocity of light is possible.

On the basis of the experimental results and some theoretical considerations based on the General Theory of Relativity and the Theories of the Expanding Universe, that has been up to this time neglected, *it seems most probable that the velocity of light in the Universe is decreasing*. It seems strange that up till now no attempt has been made to reconcile the results obtained by different investigators as regards the decrement in the velocity of light. The considerations of the Theory of Lemaitre and the General Theory of Einstein lead us to this inevitable conclusion that the Velocity of Light is decreasing from day to day, although very slightly, and this is the property introduced owing to the Expansion of the Universe. A detailed Mathematical account will be published in the *Indian Journal of Physics* and the *Physical Review*.

Lyceum,  
Arrah, B. & O..  
November 12, 1933.

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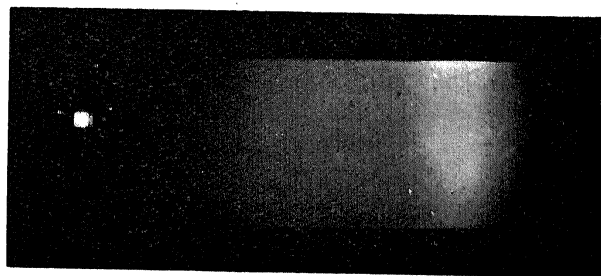
<sup>1</sup> Mt. Wilson Contr., 1928.

<sup>2</sup> *Phys. Zeit.*, **29**, 698, 1928.

### Incoherent Nature of Phosphorescent Radiation.

IN a recent communication<sup>1</sup> we reported about the incoherent nature of the fluorescent radiation. It is perhaps of interest to enquire as to whether the phosphorescent radiation is incoherent like the fluorescent radiation or not.

So we recently repeated the experiment using a zinc sulphide screen in place of the cell containing the fluorescent solution and  $\lambda$  3650 group of lines filtered out of the mercury arc with a "Corning glass filter". The screen was prepared in the following way—a glass plate was coated on one side with a thin film of water-glass. Over this film fine powder of zinc sulphide was spread till there was an uniform layer of the sulphide. We reproduce here the print (slightly enlarged) of the spectrogram we



obtained. This shows the *incoherent* nature of the radiation.

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### Studies on the Chromosomes of Indian Orthoptera.

#### IV :—The Idiochromosomes of *Hierodula* species (?) (*Mantidæ*).

SEVERAL interesting forms representing the families Mantidæ and Phasmidæ are not uncommonly met with in the vicinity of the Ismail College, Jogeshwari, situated in the Salsette district about 20 miles north of the City of Bombay. So far as the writer is

<sup>1</sup> *Cur. Sci.*, **2**, 126, 1933.