

Lecture on polarisation

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1919 Trans. Opt. Soc. 20 293

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LECTURE ON POLARISATION

BY PROFESSOR F. J. CHESHIRE, C.B.E.

Delivered 8th May, 1919

THE lecturer commenced by explaining that polarised wave-motion was the common form of wave-motion noticed in everyday life, such for example, as the passage of ripples over the surface of a pond. The principle of the "polariscope" was illustrated by the action of two barred gratings through which a rope was stretched, and the analogy between this arrangement and the action of a pair of tourmalines pointed out. The production of polarisation effects by heating and mechanical stress was shown. In particular an experiment in which a cube of glass was plunged into a tank of boiling water on the stage of the polariscope, was shown. Double refraction was explained as due to "optical grain." The passage of light through a double-refracting crystal was explained as being analogous to the sound waves passing with different velocities along and across the grain in wood. The subject of the rotation of the plane of polarisation, more especially in quartz, was dealt with and many experiments were performed to illustrate this part of the subject. Finally the examination of crystals in convergent light was dealt with.

The lecture was illustrated throughout by means of projection apparatus invented and designed by the lecturer himself, an important feature of the apparatus being the form of the polariser in which a modified double-image prism was employed instead of the usual Nicol. The lecturer explained that the spar required for this particular prism was only about one eighth of that required for a Nicol prism of the same aperture.