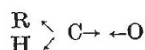


c. 2300 Å. and extending towards higher frequencies. The first region becomes continuous at pressures above c. 60 mm. These results agree essentially with the earlier work of Lüthy¹. The first region corresponds to absorption by the carbonyl group. Saturated ketones have also been found to give banded absorption below c. 2100 Å., so that the second region found here might also involve absorption by the carbonyl group. On the other hand, some facts suggest that the continuous absorption is really to be attributed to a primary excitation of the C = C link. In consequence of the conjugated grouping this may be displaced towards the red as compared with that usually found.

The main feature of the first absorption region is a series of relatively intense pairs of narrow bands. The intervals between the intense pairs are each c. 1260 cm.⁻¹, and this is also true of the weaker pairs. This frequency is probably to be associated with a vibration of the molecule



agreeing with the values found for other aldehydes. At lower pressures the bands at the long-wave end are fairly sharp but become less sharp at wave-

lengths shorter than c. 3500 Å.; the point at which the diffuseness begins to be noticed varies with the pressure. At the long-wave end some of the bands show under higher dispersion (Hilger E 1 spectrograph) a distinct fine structure, the nature and magnitude of which is such that it may imply a rotation of the hydrogen atoms and the oxygen atom around an axis close to that of the C-C-C chain. These bands appear to have been analysed by Snow and Eastwood under still higher dispersion².

The illumination of acrolein vapour at room temperatures with light of frequencies corresponding to the first region of absorption leads predominantly to a polymerisation, which may imply a long life of the excited state and a much delayed dissociation. The experiments are being extended to propiolic aldehyde, the spectrum of which may show certain simplifications.

H. W. THOMPSON.
J. W. LINNETT.

Old Chemistry Department,
University Museum,
Oxford.
Nov. 6.

¹ *Z. phys. Chem.*, **107**, 285; 1923.

² *NATURE*, **133**, 908, June 16, 1934.

Points from Foregoing Letters

THE widespread infestation of potato leaves, especially of the Kerr's Pink variety, with early blight, is indicated by Dr. R. N. Salaman and Miss O'Connor, who describe its occurrence and dangers and indicate methods of checking its ravages.

The chemical combination of the carbon dioxide obtained from the air, with water, in order to form finally sugar, starch and other carbohydrates, occurs in green plants in several stages. Prof. E. C. C. Baly invokes three steps: (1) reaction of chlorophyll with carbon dioxide; (2) further reaction in presence of light to form carbohydrate; (3) Blackman reaction in darkness when chlorophyll goes back to original state.

Sevag and Maiweg's claim to have found a new substance, belonging to the oxime-group, which poisons the enzyme catalase (which increases the rate of liberation of oxygen from peroxides) is disputed by Prof. Keilin and Mr. E. F. Hartree, who find that the oxime solution of Sevag and Maiweg contains hydroxylamine, an already known poison for catalase.

Certain gases are adsorbed by given metals or metallic oxides and are thereby rendered more active in specific chemical reactions (activated adsorption). Prof. S. Roginsky discusses the rate at which such adsorption takes place and maintains that it does not agree with Taylor's theory of the phenomenon.

Prof. Dhar and others have shown that reacting gases absorb more light than the same gases separately. Prof. R. W. Ditchburn and Dr. H. J. J. Braddick find that the simple admixture of two non-reacting gases affects their light-absorbing power. Certain photochemical and astrophysical calculations may need revision in view of these results.

Dr. W. Sucksmith has measured the angle through which certain nickel alloys turn when submitted to

varying magnetic fields (gyromagnetic effect). Nickel-copper alloys were chosen, the magnetic susceptibility of which at temperatures above -14°, -9° and -2° C. varies inversely as the absolute temperature (that is, they are paramagnetic). Below these temperatures (Curie points) their susceptibility varies irregularly (that is, they become ferromagnetic). From his measurements Dr. Sucksmith infers that the paramagnetic behaviour of nickel alloys, like the behaviour of ferromagnetic substances in general, is due solely to the spin of the electrons and not to their orbital motion.

The increase in electrical conductivity shown upon drying, which he has measured in certain carbon-coated organic materials, is explained by Dr. Lars A. Welø as being due to the closer contact of the carbon particles when the materials shrink.

The bright-red colour which the wood of flowering plants gives upon chlorination (Maïle reaction) can be used as additional evidence that the family of Gnetales (of which the species *Ephedra*, growing on the sand-dunes of the Mediterranean, is the chief European representative), really belongs to the flowering plants, in spite of their cone-like flowers that have led botanists to include them among the non-flowering cone-bearing plants (Gymnosperms). Prof. R. C. McLean and Miss Myfanwy Evans find, in fact, that all three known genera of Gnetales give the Maïle reaction.

Dr. H. W. Thompson and Mr. J. W. Linnett have measured the light absorption of acrolein in the visible and ultra-violet and discuss the relation of the two absorption bands observed to the molecular structure of that compound. They find that illumination of acrolein vapour with light corresponding to one of the absorption bands leads to molecular aggregation (polymerisation).