culate the relative amounts of photosynthesis in any two portions of the spectrum. These values calculated from the rough physical measurements agree within a few per cent. with the experimentally determined values in all cases. Thus these primary absorption curves may be considered as representing the relative amounts of photosynthesis at equal incident quantum intensity.

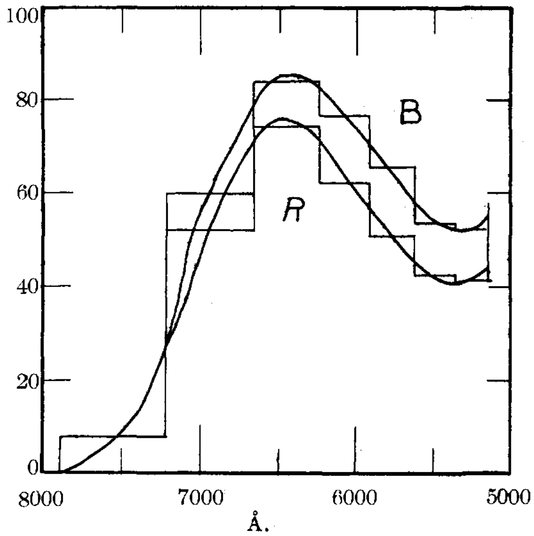

Fig. 1.

The fact that the amount of photosynthesis depends on the primary absorption spectrum seems fairly well established since the relationship holds for a large number of experiments with different ranges of wave lengths and different colors of trees as well as with experiments with semi-monochromatic radiation from filtered sodium and mercury sources. It offers a quantitative explanation of all our experimental results, published in botanical journals from 1933 on. Just why the amount of photosynthesis should agree with this arbitrary value rather than with the true absorption is still a matter of speculation.

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Received January 25, 1937

Diazo Coupling of 5-Hydroxy-6-methylhydrindene

By Louis F. Fieser and Warren C. Lothrop

In a previous report [This Journal, **58**, 2050 (1936)] we stated that the above compound (I) failed to couple with diazotized *p*-nitroaniline in alkaline solution, whereas in parallel tests 5-hydroxy-4,7-dimethylhydrindene and 6-hydroxy-5,8-dimethyltetralin coupled readily under the same conditions. On preparing a further quantity of I in order to investigate its behavior with other coupling agents, we first tried to effect a coupling with diazotized *p*-nitroaniline under other conditions and found that this indeed can be accomplished. Each of seven solutions containing 0.1 g. of I in 10.5- to 20-cc. portions of sodium hydroxide solutions of concentrations varying from 0.119 to 2.49 *N* was treated at 0° with 2.5 cc. of an aqueous solution containing approximately one equivalent of the diazo compound and 0.000021 mole of hydrochloric acid, and after ten minutes the mixtures were boiled and the precipitate collected. The crude *p*-nitrobenzeneazo derivative of I (m. p. 210–215°) was obtained in yields decreasing steadily from 36% in the most weakly alkaline medium to a negligible amount (*ca.* 1%) in the most alkaline solution. The purified azo compound formed brown-red needles, m. p. 230–232° (calcd.: C, 64.63; H, 5.08. Found: C, 64.32; H, 5.34). Similar results were obtained even with aniline, the benzeneazo compound forming red needles, m. p. 141–143° (calcd.: C, 76.16; H, 6.39. Found: C, 75.97; H, 6.60).

We are investigating the conditions of the couplings more fully and making a further comparison with related compounds; but it seems desirable to correct at once the impression given in the earlier report that the hydrindene derivative I departs entirely from the behavior characteristic of a phenol having a free ortho position.

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Received March 29, 1937

Allomucic Acid

By Fred L. Humoller and Wm. F. McManus

Recently we published a paper on the preparation of new derivatives of *l*-allonic and *l*-altronic acids. While we were mainly concerned in this paper with the interesting behavior of allonic acid and its lactones, we also described briefly several new compounds related to the above two acids, among them allomucic acid. Dr. Th. Posternak has been kind enough to point out to us that in 1935 he had published an account of the preparation of allomucic acid from *d*-allonolactone. Unfortunately we had over-