measured product to be fructose. In the dark reaction α changed to $-9.37°$. These experiments suggest that the main reaction in the photolysis gives the same products as hydrolysis by acids, where the change in α also agreed with the S.-H.-S. estimation of the amount hydrolyzed.

The photochemical efficiency of the measured reaction was independent not only of the light intensity when (5 to 700)10^{16} photons were absorbed per minute by 11 cc. of solution, but also of the *p*H—at least between 3.5 and 6.5. Gross quantum yields were independent of the initial concentration of glycoside but decreased as the liberated alcohol or phenol absorbed a larger fraction of the light incident on the solution.

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THE STRUCTURE OF INSULIN

Sir:

As reported at the Baltimore meeting of the American Chemical Society, I have made an electron density projection of the insulin structure using Crowfoot's $hk \cdot O$ x-ray data [D. Crowfoot, *Proc. Roy. Soc.* (London), **A 164,** 580 (1938)] and assuming (incorrectly) that the true projection has a center of symmetry and that the structure proposed by Wrinch and Langmuir [D. M. Wrinch, THIS JOURNAL, **60,** 2005 (1938); *Science,* **88,** 148 (1938); *Nature,* **143,** 763 (1939); D. M. Wrinch and I. Langmuir, THIS JOURNAL, **60,** 2247 (1938); I. Langmuir and D. Wrinch, *Nature,* **142,** 581 (1938)] is a sufficiently close approximation for the determination of the signs of the structure factors. If the latter assumption is correct, the density at each point of the projection is a sort of average of that at the same point in the true structure and that at another point the same distance on the opposite side of the origin.

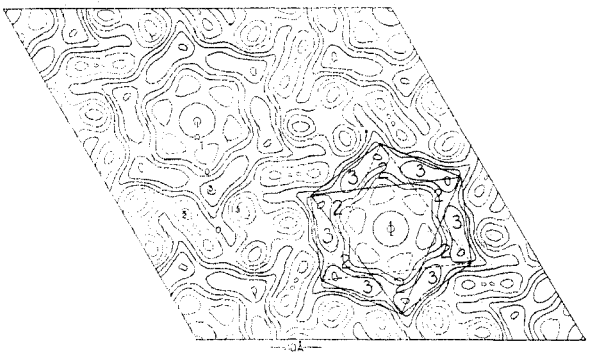

Fig. 1.—Election density projection on (0001), assuming a center of symmetry and that the structure factor signs are as calculated for simplified C_2 octahedron molecules, oriented as indicated.

This projection is here reproduced (Fig. 1), with a projection of Wrinch's "C_2 octahedron," oriented as she has assumed, superimposed. The numbers 1, 2 and 3 designate areas for which one would expect low, medium and high densities, respectively. With a slight change in orientation, the fit is not bad.

It would seem at first that this electron density projection lends support to the hypothesis of a cage or ring molecule or ion of about the size postulated by Wrinch. However, the chief features of the projection depend on the model assumed in deducing the signs of the structure factors. If, for this purpose, one postulates a molecule composed of six point atoms at corners of a regular octahedron, the resultant projection (Fig. 2) shows no indication of a cage structure.

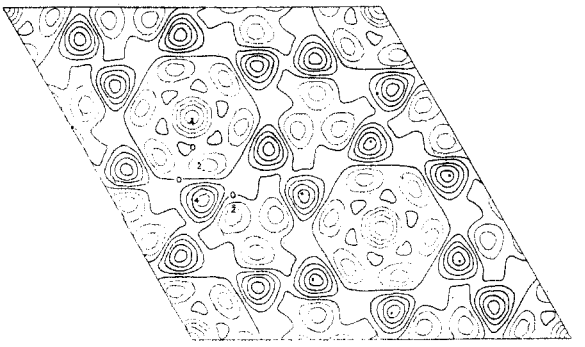

Fig. 2.—Same, except that the structure factor signs are assumed to be as calculated for molecules consisting of six point atoms, distributed as indicated by the dots.

Projections of this sort may prove useful in testing minor features of proposed structures and in suggesting modifications. For example, from Fig. 1 one can deduce that, if the structure contains cage ions even roughly resembling the C_2 cyclol model, the metal ions (Zn) are not at the midpoints of the centerlines joining adjacent cages.

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