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An Investigation of the Formation and Excitation of the Mercury Hydride Molecule through Resonance Radiation

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THE LIMITATIONS OF PRESENT COMPUTATIVE METHODS OF STUDYING LIQUID STRUCTURE

GEORGE A. BOYD

The inadequacy of the approximate method of x-ray diffraction intensity computation in the case of liquids is illustrated by computations relative to n-paraffins. Warren apparently proved, by using Zernike and Prins theory, that the structure of the liquids is hexagonal parallel packing. These computations have been repeated and extended to larger scattering angles. Similar calculations were made for the parallel packing. Conclusive proof for either array was not found. Preference, however, due to peak position, should be given to the former. The work emphasizes the need for a better theoretical approach to the problem of liquid structure in explaining the scattering of x-rays.

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AN INVESTIGATION OF THE FORMATION AND EXCITATION OF THE MERCURY HYDRIDE MOLECULE THROUGH RESONANCE RADIATION

LEONARD O. OLSEN

A weak excitation by collisions of several of the HgH bands belonging to the electronic system $^2\pi \rightarrow {}^2\Sigma$ was detected. It was found that HgH was formed in the $^2\pi_{\frac{1}{2}}$ and $^2\pi_{\frac{3}{2}}$ (excited) states through a collision process involving Hg 6^3P and the H_2 molecule, one Hg 6^3P atom dissociating the H_2 molecule and a second Hg 6^3 atom uniting with an H atom to form the excited HgH molecule.

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AN UNUSUAL APPEARANCE OF THE CYANOGEN BANDS

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A unique formation and excitation of the CN molecule occurred in the resonance tube. (Observed in connection with the investiga-