was of extreme purity, in which case this explanation becomes impossible. Further work on this problem is clearly necessary.

E. LAUE

RECEIVED MARCH 2, 1934

THE SOLUBILITY OF Ag_2O IN WATER AND IN ALKALI

Sir:

We regret that Dr. Laue's paper [*Z. anorg. allgem. Chem.*, **165,** 325 (1927)] was accidentally overlooked, especially since his measurements in strong alkali are roughly in agreement with our own and caused him to draw the same conclusion as ourselves respecting the existence of amphoteric properties in silver hydroxide.

We would point out that Dr. Laue's values deviate from ours not only in pure water, but to a somewhat less extent throughout the entire range of alkalinity. For this reason the agreement of his value for the activity product of the ions of argentic acid 1.96×10^{-18} with the value which may be calculated from our dissociation constant for this acid $a_{\mathrm{AgO}^-}a_{\mathrm{H}^+} = K_{\mathrm{A}}a_{\mathrm{AgOH}} = K_{\mathrm{A}}m_{\mathrm{AgOH}} = 7.9 \times 10^{-13} \times 2.5 \times 10^{-6} = 1.97 \times 10^{-18}$ must be considered as fortuitous.

After a careful study of Dr. Laue's paper we still believe that our values are nearer to the true solubilities of silver oxide in the various solutions which we have measured.

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RECEIVED FEBRUARY 5, 1934

PREPARATION OF CRYSTALLINE β-*d*-ALLOSE

Sir:

Levene and Jacobs [*Ber.*, **43,** 3141 (1910)] prepared sirupy *d*-allose and *d*-altrose from *d*-ribose obtained from yeast nucleic acid but were unable to obtain the sugars in crystalline form. Austin and Humoller [THIS JOURNAL, **55,** 2167 (1933)] have recently prepared crystalline β-*l*-allose from synthetic *l*-ribose. We have now prepared crystalline β-*d*-allose from *d*-ribose obtained from nucleic acid.

Application of the cyanohydrin reaction to 50 g. of purified *d*-ribose gave 25.5 g. of crude calcium *d*-altronate and 27.8 g. of crude *d*-allonic lactone. The latter after several recrystallizations was reduced with sodium amalgam. After converting the unchanged allonic lactone to the sodium salt and removing both the sodium sulfate and sodium allonate with alcohol, the *d*-allose crystallized from the alcoholic solution in good yield. The crude product was dissolved in a little water by warming, about three volumes of hot methyl alcohol was added, and the solution filtered through a little carbon. The sugar was allowed to crystallize, and was then filtered and washed with absolute ethyl alcohol. The *d*-allose thus purified gave a melting point (uncorrected) of 128–128.5°. *Rotation:* 1.338 g. in 25 ml. in a 2-decimeter tube at 20.1° gave the following specific rotations: 2 min. after solution, $[\alpha]_{\mathrm{D}}^{20.1}$ 0.58°; 4 min., 2.10°; 10 min., 3.26°; 20 min., 6.03°; 40 min., 9.57°; 120 min., 14.12°; 20 hrs. (constant), 14.41°. Since this sugar is the less dextrorotatory form of a sugar in the *d*-series, according to the nomenclature of Hudson [THIS JOURNAL, **31,** 66 (1909)] it is to be designated as the β-form. It is the eighth of the sixteen possible aldohexoses to be reported in the crystalline state.

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RECEIVED MARCH 30, 1934

THE FORMATION OF CHLORINE HEPTOXIDE ON ILLUMINATION OF MIXTURES OF CHLORINE AND OZONE

Sir:

In a recent communication [THIS JOURNAL, **56,** 364 (1934)] we reported that when mixtures of chlorine and ozone are illuminated with blue light the observed pressure change is not sufficient to account for the amount of oxygen formed. At that time the discrepancy was attributed to the formation of chlorine trioxide which condensed on the walls of the reaction vessel. Further experiments, however, have shown that the discrepancy was much greater than could be accounted for in that manner alone. We have found it possible to isolate from these reaction mixtures a drop of colorless liquid which has been identified as Cl_2O_7. The identification consisted of measuring the vapor pressure of the substance over the range 213–268°K. and comparing the