of the two particles, not only must ν and λ and their first derivatives be continuous, but λ must vanish everywhere for $x_1=0$ except at the two mass-points. The latter condition is necessary in order that an infinitesimal circle in the plane $x_2=$const., $x_4=$const. with center at $x_1=0$ shall have the ratio of circumference to diameter, each measured in natural length (integral of ds), equal to π. One can show that the solution in question does not satisfy these conditions as far as the funcion λ is concerned.

For this purpose we put the expression (10) into a more convenient form by introducing the angle α formed by the two radii-vectors r_1 and r_2. This satisfies the relation

$$r_1 r_2 \sin\alpha = D x_1.$$

The bracketed expression in (10) can now be written

$$[\ ] = \pm\cos\alpha - 1,$$

where the double sign comes from the square root. According to Silberstein the square root is always to be taken positive, so that one should therefore write

$$[\ ] = |\cos\alpha| - 1.$$

This obviously leads to discontinuous derivatives for λ on the surface $\alpha=\pi/2$, in violation of the conditions for regularity.

As a matter of fact, a closer investigation shows that the calculation can be carried through without the introduction of the square root and the resultant ambiguity in sign. One then finds that in the correct solution

$$[\ ] = \cos\alpha - 1.$$

This, however, also fails to satisfy the regularity conditions, for λ is nonvanishing on the axis ($x_1=0$) between the two mass-points.

We should like to remark that, as shown in a letter to one of us, Professor C. Lanczos of Purdue University has independently recognized the error in Silberstein's paper.

A. Einstein
N. Rosen

Institute for Advanced Study,
Princeton, New Jersey,
February 17, 1936.

[1] Silberstein, Phys. Rev. **49**, 268 (1936).
[2] Einstein and Rosen, Phys. Rev. **48**, 73 (1935).

A Correction to "On the Structure and Interpretation of the Infrared Absorption of Crystals"[1]

R. B. Barnes, R. R. Brattain and the author would like to express their thanks to Dr. M. A. Durand for calling their attention to a typographical error in their paper of the foregoing title. In Table I on page 590, the columns C_{12} and C_{44} were interchanged. The discussion in the text is not to be altered.

Frederick Seitz

University of Rochester,
Rochester, New York,
February 10, 1936.

[1] Barnes, Brattain and Seitz, Phys. Rev. **48**, 582 (1935).

Infrared Absorption of Hydrogen Chloride in Nonionizing Solvents

The appearance of the interesting paper of E. K. Plyler and D. Williams on the infrared absorption spectrum of hydrogen chloride in benzene at about 3.4μ[1] has suggested to us the propriety of recounting our observations on the infrared absorption of that substance in various solvents, made in continuance of work on the Raman spectra of these solutions.[2] The work has been performed on the harmonic at about 1.76μ by means of a prism-grating spectrometer employing an echelette grating of 3600 lines to the inch. The results are in general agreement with those obtained from Raman spectra—the absorption band is displaced to lower frequencies by an amount increasing with the dipole moment of the solvent, the displacement reaching a limiting value beyond which further increase in moment is without effect. As is perhaps to be expected, there is no trace of rotational structure, though solutions in PCl_3, $POCl_3$, CCl_4, SO_2, show either very distinctly, or at least clear signs of a division into two bands with maxima separated by an amount, in PCl_3 and CCl_4, about the same as the P–R doublet separation in the incompletely resolved gaseous absorption, while in $POCl_3$ and in SO_2 the separation is distinctly greater than in the gas (about 220 cm^{-1} in SO_2, solution, against 120 cm^{-1} for the gas). Moreover the intensity of the low frequency branch is much greater than that of the other, in contradistinction to the intensity relations in the P and R branches in the gas. Diminishing the temperature in PCl_3 solutions makes the division into two bands less pronounced and also causes a relatively small diminution in the frequency of maximum absorption.

The absorption coefficient in these solutions, judged from a comparison of cell lengths required for about the same absorption in the gas and in solution, seems to be only slightly greater than in the gas.

W. West
R. T. Edwards

Chemistry Department,
Washington Square College, New York University,
February 8, 1936.

[1] Plyler and Williams, Phys. Rev. **49**, 215 (1936).
[2] West and Arthur, J. Chem. Phys. **2**, 215 (1934).

Ultraviolet Absorption in Hydrogen Fluoride. A Correction

An ultraviolet absorption spectrum in hydrogen fluoride was recently reported in a letter by K. Siga and H. Plumley.[1] It has since been demonstrated by the second author that the observed spectrum must be attributed to the presence in the hydrogen fluoride of a trace of sulfur dioxide as an impurity. It is concluded that hydrogen fluoride at atmospheric pressure, and with a path length of 30 cm, shows no absorption in the ultraviolet region above 2000A.

H. J. Plumley

Ryerson Physical Laboratory,
University of Chicago,
February 4, 1936.

[1] K. Siga and H. Plumley, Phys. Rev. **48**, 105 (1935).