buzzing sound, which seems to have been simultaneous with the appearance of the light. This communication is prompted chiefly by a desire to learn if such sounds have been previously reported as being connected with meteoric falls. Several circumstances in the present case indicate that this sound was real, and not psychological. May it have been the indirect result of some form of electric energy? One observer seems to refer this sound to objects attached to the ground.

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AUSTIN, TEXAS,
October 22, 1917

ON THE COLLOID CHEMISTRY OF FEHLING'S TEST

TO THE EDITOR OF SCIENCE: Fischer and Hooker make the following statement in their article "On the Colloid Chemistry of Fehling's Test," page 507, SCIENCE:

> Formaldehyde reduces Fehling's solution not only to the ordinary cuprous oxide, but to the metallic copper. The copper comes down in colloid form, but as this happens, a second reaction ensues in which the metallic copper acts upon the formaldehyde and decomposes it with the liberation of hydrogen. The liberation of hydrogen continues for hours, until either all the formaldehyde has been decomposed or all the copper salt has been reduced.

In a study on the preparation of colloidal gold solutions by Dr. J. H. Black and myself (which is being reported by Dr. Black at the present meeting of the A. M. A. at New York), question arose regarding the probable explanation of the mechanism by which neutral sols are obtained although distinctly alkaline (to alizarine) sols should result from the proportions of reagents employed. I suggested the hypothesis that the colloidal gold acted as a catalytic agent to oxidize the free formaldehyde to formic acid, which latter reacted with the potassium carbonate responsible for the alkalinity.

It occurs to me therefore that it would be better to picture the colloidal copper functioning as a catalytic agent which oxidizes the HCHO in part, the remaining part serving to reduce the copper salt. The idea advanced by them that colloidal copper is produced is certainly reasonable; it is very difficult to understand how formaldehyde would liberate hydrogen.

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SCIENTIFIC BOOKS

The Fundamentals of Botany. By C. S. GAGER. Philadelphia, P. Blakiston's Sons & Co.

We are fortunate in the United States in having a number of excellent elementary botanical text-books, written from different points of view. Professor Coulter has furnished an admirable beginners' book conceived from the standpoint of the head of a botanical department in a large university, who is at the same time an educational expert. From the hands of Mr. Bergen, whose recent demise we all deplore, we have had a succession of well-approved texts, written by one thoroughly in touch with instruction in the secondary schools. Professor Ganong has put forward from time to time books which reflect the outlook of the teacher in college work. The present volume comes from one who is the director of one of the most important botanic gardens in the country and who has, at the same time, made it his business to get into touch with his community, primary and secondary schools as well as the general public, in the closest possible manner. There can be little doubt, particularly at the present juncture, when the general public under the spur of patriotism and necessity, has largely abandoned its usual attitude of indifference toward plants, that Dr. Gager's book will prove extremely useful.

The relation of the author to his subject is admirable, as is shown by the following citation (p. 192).

> . . . In fact, we may say that our ignorance of life-processes greatly exceeds our knowledge. Very much more remains to be ascertained than has already been found out; for example, what is protoplasm? Nobody really knows. We have analyzed the substance chemically, we have carefully examined and tried (but without complete