DISCUSSION AND CORRESPONDENCE

NEWTON'S CORPUSCULAR THEORY OF LIGHT

To the Editor of Science: For more than half a century various text-books on physics and other publications dealing with the phenomena of light, contain assertions to the effect that Newton's corpuscular theory of light received a knock-out blow when it was demontrated that light required a longer time to pass through water than through air.

Quoting, for example, from the last (11th) edition of the Encyclopædia Britannica, Vol. XVI., page 618, we read:

> In the earlier part of the 19th century, the corpuscular theory broke down under the weight of experimental evidence, and it received the final blow when J. B. L. Foucault proved by direct experiment that the velocity of light in water is not greater than that in air, as it should be according to formula (1), but less than it, as is required by the wave theory.

The object of this note is to show that the observed data are just as favorable for Newton's theory as they are for the wave theory of light.

Compared with Newton's corpuscle, the hydrogen unit of chemistry must evidently be regarded as a very large mass.

In passing between the molecular masses (H_2O) of which the water is composed, the path of the corpuscle would be much longer than the path in air between the widely separated N_2, O_2, H_2O and other masses. Consequently, if the ratio of the actual length of the path in water to the actual length of the path in air is greater than the ratio of the velocity in water to the velocity in air, the time required for the corpuscle to pass through the water with the greater velocity, will be longer than that required to pass through the air.

J. M. Schaeberle

Ann Arbor,
May 31, 1921

GERMAN SURTAXES ON SCIENTIFIC PUBLICATIONS

To the Editor of Science: I read with interest the letter of M. W. Senstius in Science for April 8, 1921, in which he stated that a publisher in Leipzig had informed him that he had "abolished all foreign surtaxes on journals published by his firm," and that the publisher stated further that it was a "matter of regret to him that he is not (yet?) at liberty, owing to the binding regulations of the Börsenverein, to do the same with his own books."

I at once wrote to the publisher, Wilhelm Englemann, stating that I had read Mr. Senstius's letter in Science, and inquired whether the journal—*Botanische Jahrbücher*—was included in his list of exempt publications, and what the subscription rate of the periodical would be to us. I give below a close English translation of Mr. Engelmann's reply under date of May 2, 1921:

> In answer to your very valued letter of April 12, 1921, may I reply that Mr. Senstius in his article in Science of April 8 emphasizes that all the journals *which appeared from my press after January 1, 1921, would be supplied without the exchange tax (Valuta Aufschlag)!*
>
> On all journals and sets (Sammelwerke) appearing before the end of 1920 there is a publisher's additional charge (surtax, *Verlegerteuerungszuschlag*) of 200 per cent. plus, at the time only, 100 per cent. exchange tax exempt! In accordance with the enclosed circular this publisher's surtax was increased from May 1, 1921, to 300 per cent. of which you will please take note!
>
> With reference to Series I., Botan. Jahrbücher, this 300 per cent. is charged, plus the Valuta additional!

On the back of Engelmann's letter were two notices rubber-stamped, the first stating that his firm would supply all periodicals issued after January 1, 1921, without the Valuta charged, but the second rubber-stamped notice stated that on account of the unusually stringent conditions, there would be added a 300 per cent. publishers' excess charge on all of his publications which appeared previous to the close of 1920, as stated in the letter just quoted. The enclosed circular, to which his