Engineering.

This reduces the number somewhat and includes one subject not included in your classification. I believe that the time has come when we must have technical journals in subjects pertaining to agriculture just as they have in all other branches of scientific work.

Professor J. W. Gilmore writes:

This scheme seems to me eminently feasible and I believe is a distinct step in arranging and systematizing our station literature. I would like to hear a discussion, however, along three lines at least:

1. Scheme of classification.

2. Whether station workers might not receive any or all of the series free on request.

3. What may be the attitude of the now-established scientific journals toward the scheme.

Would it be well to invite discussion along these lines?

The methods and means of publication for scientific station matter is a subject in which all experiment-station investigators are vitally interested, and the writer has thought it desirable to publish his thoughts on the subject, hoping to stimulate a general discussion out of which sentiment may crystallize so that some advanced step may soon be taken by the station authorities.

H. J. Webber

Cornell University

On the Effects of Magnesium Sulphate on Plants

In the issue of Science of August 16, Professor William J. Gies publishes a letter, in which my refutation of an unjust attack is subjected to an analysis which I cannot regard as going to the essential point. I must, therefore, once more and more distinctly state that my inferences as to the *poisonous action* of *magnesium sulphate* on plants can, of course, only relate to the conditions of my experiments and that *I nowhere have made the assertion that these poisonous actions would be observed also at still higher dilutions than those I had used,* for I was very well acquainted with the truth that the action of a poisonous substance decreases with the dilution and that beyond a certain dilution even a stimulating action can take place.

I have further pointed out that the poisonous effects of that salt are modified by the lime content of the cells; the more lime there is present in the cells, the more magnesium sulphate will be required to exert a poisonous action. From this standpoint my own observation on the stimulating action of magnesium sulphate[1] under certain conditions, becomes intelligible.

Oscar Loew

Special Articles

The Spark Chronoscope

Eight years ago I published a description of a new chronoscope in a technical monograph. Eight years of continued use, in which the instrument has been tested for convenience, durability, adaptation and accuracy, give such assurance of satisfaction that I am moved to bring the instrument to the attention of a wider circle of scientists through the columns of this journal. I would especially invite comparison with other instruments on the three fundamental qualities of accuracy, economy in operation and adaptability.

The following brief description is essentially an extract from the original account in *The University of Iowa Studies in Psychology,* Vol. II., p. 155 *ff.*

Of the hitherto known forms of apparatus for measuring short intervals of time, the graphic spark apparatus is the most accurate and the pendulum apparatus the most convenient. In the chronoscope that is shown in the accompanying figure, the spark method of recording is combined with the pendulum action.

The cut is reduced to a scale one sixth of the size of the apparatus. The pendulum is shown in the starting position. The lower bob terminates in a knife edge which rests upon the projecting edge of a mechanical release key. The action of this key is soundless and gives the pendulum no impetus in either direction. On the other side of the apparatus is a spring key which catches the pendulum at the

[1] *Cf.* "Flora," 1893; observations on the growth of the roots of *Tradescantia,* in my article on the "Physiological Functions of Lime and Magnesia."