Stanford University, fishes; Josephine Tilden, University of Minnesota, algae; Elda Walker, University of Nebraska, plant morphology; R. B. Wylie, University of Iowa, plant morphology; Charles Zeleny, University of Illinois, embryology.

In 1928 the total number of students was 132, of which forty-two were graduate students doing class work and twenty were graduate students doing research. Besides, there were six teachers doing research.

Expenses are light, but work is strenuous. There are no tourists, even for a single night. Play is encouraged, so that at the end of nine busy weeks one feels that he has had a vacation while he was teaching or doing research.

CHARLES J. CHAMBERLAIN
UNIVERSITY OF CHICAGO

THE AMERICAN MEDICAL ASSOCIATION OF VIENNA

THERE exists in Vienna the American Medical Association of Vienna, which is a well-developed organization founded for the purpose of facilitating post-graduate medical work for English-speaking physicians. All the English medical courses given under the auspices of the University of Vienna are administered through this organization.

Many Americans come to Vienna for post-graduate medical work and apparently profit by so doing. Many others write to professors and business organizations asking for information, indicating a lack of knowledge of our organization.

We have an annual membership of nearly 1,000 new doctors, who come from various parts of the world, and who obtain their work through our organization. It is thoroughly well organized, with four secretaries to orient new members and assist them in obtaining medical courses, housing, money matters, shopping, sightseeing, etc.

For further information, address The American Medical Association of Vienna, Vienna VIII. Alserstrasse 9, Austria.

RALPH A. REYNOLDS

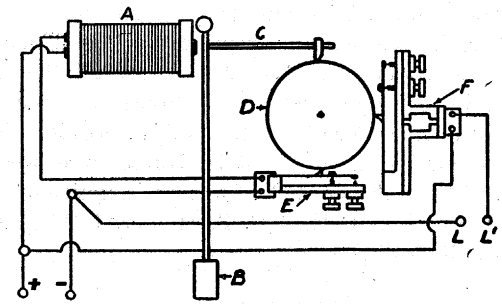
SCIENTIFIC APPARATUS AND LABORATORY METHODS

AN IMPROVED CHRONOGRAPH

A VAST number of instructors in laboratories of experimental physiology have had difficulties with time clocks. For a number of years a Harvard chronograph has been used in the department of physiology and pharmacology of the Michigan State Laboratory. Because of the conditions imposed the results were not at all satisfactory.

Due to a reorganization of the laboratory courses in 1925–26 whereby all students were required to perform a regular series of physiological experiments, the load upon the clock and the consequent annoyances resulting from its malfunctioning became unbearable. In casting about for a remedy the difficulties were casually stated to Mr. Phippeny, at that time operator of WKAR. After making a careful survey of the situation Mr. Phippeny stated that the pendulum-driven Harvard chronograph should satisfactorily meet our conditions provided certain changes were made in the wiring.

The large pendulum-driving magnet (Figure 1 *A*)



was rewound with No. 30 B & S enameled copper wire, and the connecting wires on the chronograph were rearranged in such a manner (see Figure 1) that the pendulum is driven by a shunt from the main source of current. In order to meet our needs for time magnets at fifteen or twenty desks a 24-volt storage battery and a rectifier were installed, and the bobbins of the Harvard signal magnets were rewound with No. 38 B & S enameled copper wire.

Current is supplied to the desk from a line of about 100 feet attached at *L L'* and enclosed in overhead conduits. Readily removable drop cords of proper length extend to the desks. When not in use these cords are removed and stored. When the conduit was installed three wires were placed therein so that two different time intervals would be obtainable at all desks, and a special three-prong plug was used upon the drop cords. To allow for this an extra time bar takeoff *F* was to be placed upon the proper support and suitable connections made. Although this has not been carried to completion the special three-point plug has frequently prevented students from plugging into the 110-volt current which is also carried about the laboratory in conduits.

During the time this chronograph has been in operation there have been two difficulties with which we have had to deal. The small storage batteries originally installed were found to be inadequate and it was necessary to charge them continuously when all the desks were occupied. The variations caused