

in an experimental lecture with explanations. The lecture may be made very clear and good; and this will be an attractive and not difficult method of teaching, and will meet most of the requirements. It fails, however, in one. The boy is helped over all the difficulties; he is never brought face to face with nature and her problems; what cost the world centuries of thought is told him in a minute; his attention, clearness of understanding, and memory are all exercised; but the one power which the study of physical science ought preeminently to exercise, and almost to create, the power of bringing the mind into contact with facts, of seizing their relations, of eliminating the irrelevant by experiment and comparison, of groping after ideas and testing them in their adequacy, in a word of exercising all the active faculties which are required for an investigation in any matter—these may lie dormant in the class while the most learned lecturer experiments with facility and explains with clearness.

In what has been said I have dealt only with the most evident of the problems now before the physics teachers—namely, the problem of how to teach so as to leave the pupil with an added power to achieve. I have given it as my frank opinion that we are not oversuccessful in this at present, have urged that scientific experiment in teaching offers the only means of finding out how to become more successful, and have suggested several working hypotheses as possible guides to such experimenting. The subject has, however, only been grazed by what has been said. No mention has been made of the contributions that physics teaching might make to the social efficiency of the community; nor has the problem of making the physics contribute its share to moral education been considered. The questions as to why America does not contribute her just quota to the number of the world's greatest scientists have not been discussed. These larger problems of science will have to be left for future discussion. Their solution, like that of the problem that has occupied our attention, is

waiting for the scientific experiments in education, which alone can lead us to a satisfactory conclusion.

C. R. MANN

THE UNIVERSITY OF CHICAGO

---

#### THE EIGHTH ZOOLOGICAL CONGRESS

THE preliminary announcement of the eighth International Zoological Congress is just issued and of it we make the following abstract. The congress meets at Graz, Austria, on August 15–20, 1910, under the presidency of Hofrat, Professor Ludwig von Graff, who was elected to the position at the Boston Congress in 1907.

At 9 A.M., on Monday, is the registration, followed by a meeting of the permanent committee of the congress and an inspection of the university. At 3 P.M. are the general formalities of opening, with addresses of welcome, presentation of delegates, formation of sections and the like. At the close of the session the members go to the Heimwald, where there will be an informal gathering in the restaurant.

On Tuesday and the following days the general sessions are at 9, with sectional meetings at 2 in the afternoons, and on Tuesday and Wednesday there are lantern lectures on Styria and the Dalmatian coast. From 4:30 on there are small excursions to the beautiful places in the surrounding mountains. On Friday evening the congress proper ends with a banquet to the congress.

On Saturday the congress goes on an excursion to the Erzberg and Leopoldstein See and on Sunday to Trieste, where the Austrian Zoological Station forms the chief object of interest. If possible the beautiful Imperial Castle of Miramar (associated in the minds of Americans with the unfortunate Maximilian of Mexico) will be visited.

From Monday, August 22, to Saturday evening, there will be an excursion in one of the steamers of the Austrian Lloyds down the Dalmatian coast, stopping at Rovigno, Pola, Sebenico, Traù, Spoleto, Lesina, Lissa, Meleda, Ragusa and Cattaro. Ample time will be allowed at the latter place for a trip

to the mountain town of Cettinje, the capital of Montenegro. On this trip the party will have meals and will sleep on the steamer. The cost is estimated at about 200 kronen, about \$40, but this may be reduced, provided sufficient numbers take the excursion. Definite responses concerning it must be in the hands of the committee by June 1, next.

There is also offered a supplementary excursion which is most attractive to those who enjoy the out of the way. It leaves the other on the return trip at Ragusa, and goes into the mountains by rail to Mostar, the capital of Bosnia, and then to Sarajevo, the capital of Herzegovina, and thence to the end of the railway at Jaice. Then comes a carriage ride of about thirty or forty miles to the railroad at Banjaluka, where the train is taken again for Agram, the end of the excursion. On this trip there will be many stops, but the names of the stations mean little to most Americans. This supplementary excursion will occupy a week and the cost will be about \$40 additional. It will be under the charge of the Bosnian-Herzegovinan Landes-Museum, thus guaranteeing the best of introduction to the strange lands of the Balkans.

Anyone interested in zoology is eligible to membership in the congress, the cost being 25 kronen (about \$5.00). The wives and daughters of members may join as participants. Members have all the rights usually associated with membership (the fee being 12 kr.), and are to receive the publications of the congress. None but members and participants are entitled to attend the meetings of the congress or to take part in the excursions.

A second circular, giving full particulars of the sections, a list of hotels and boarding houses and other information will be issued in March, and this with the present circular will be mailed to all who request it. All communications should be addressed to the Praesidium des VIII. Internationalen Zoologenkongress, Universitätsplatz, 2, Graz, Austria. Postal orders or drafts for membership fees should be drawn in favor of the "VIII. International Zoological Congress"

and be sent to the Steiermärkische Escompte-bank at Graz.

Titles of all papers to be presented to the congress must be received before August 1, 1910, in order to have a place on the program; and as soon as the paper is read the manuscript must be handed to the secretary in complete shape, ready for printing.

---

THE DEPARTMENT OF AGRICULTURAL  
EDUCATION OF THE UNIVERSITY  
OF WISCONSIN

PROFESSOR KARL HATCH, who has charge of the newly organized department of agricultural education in the University of Wisconsin College of Agriculture, is formulating plans for assisting rural and high schools in their efforts to give effective instruction in agriculture. A traveling library of lantern slides illustrating various phases of dairying and farming has been provided which will be sent to schools for use. A collection of enlarged photographs of agricultural products and materials has also been prepared. An explanation of the methods of using the bulletins issued by the Experiment Station and the U. S. Department of Agriculture has also been provided, which is designed to make available for instruction the material in these official publications. The college of agriculture has arranged to have a number of its faculty deliver special lectures on teaching agriculture at county teachers' institutes.

A special annual appropriation of \$30,000 for agricultural extension work, made by the last state legislature, has resulted in the expansion of this work until it now includes eleven different branches. The extension work in the department of horticulture includes demonstrations of the spraying of potato fields and of orchards, the distribution of pure-bred tobacco seed, the inspection of orchards and nurseries for destructive insects and fungous growths and assistance in landscape gardening.

Means of control and eradication of weeds are given through the agronomy department, which also disseminates pure-bred grains and seeds of forage plants among the farmers, in-