

The Saguenay Fjord, sixty miles long, river-like in its nearly uniform width and its somewhat winding course, with a depth from nearly 500 to 900 feet beneath the sea level, continuously enclosed on each side by steep or precipitous bluffs and cliffs 500 to 1,500 feet high, is regarded as a very typical fjord of the Norwegian type.

Both the fjords of Puget Sound and of the Saguenay have been eroded alike by river channeling before the Ice Age, showing, with the other fjords farther north, that this continent was greatly uplifted during a considerable time preceding the continental glaciation. Such high land elevation the author believes to have caused the cold climate and the accumulation of snow and ice which characterized the Glacial Period.

W. S. BAYLEY,
Secretary pro tem.

THE HANOVER MEETING

Section E, Geology and Geography, proposes to give a series of excursions to various points in Vermont and New Hampshire in connection with the meeting of the American Association for the Advancement of Science at Hanover this summer.

A tentative plan is the following:

1. The first excursion to be under Dr. Wolff, of Harvard University, starting from Bellows Falls, Vt., Friday, June 26. This will be a trip across the Green Mountains, arriving at Rutland, Vt., some time on Saturday.

2. An excursion with Professor G. H. Perkins, state geologist of Vermont, to some of the marble quarries.

3. An excursion to Ascutney Mountain, Vermont, under Dr. R. A. Daly.

4. A trip to the Quechee River local glacier under Professor Hitchcock, of Dartmouth.

5. A study of the terraces of the Connecticut River.

6. A day in the Corbin Park to see the buffaloes, etc.

7. A trip of one to three days around Littleton, N. H.

8. A trip to Mt. Monadnock, if enough care to go.

9. A trip to one of the points of interest for economic geology.

10. The final excursion will be made to the Summit House on Mt. Washington, where greatly reduced rates have been secured for a stay of from a day to a week.

It will greatly assist in making arrangements for the meeting if all those who have any thought of taking part in these excursions will send word as soon as possible to

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A PLAN FOR AN EXCHANGE OF TEACHERS BETWEEN PRUSSIA AND THE UNITED STATES¹

ON behalf of the Department of Ecclesiastical Affairs, Instruction and Medical Affairs of Prussia, Geheimer Ober-Regierungsrat, Dr. Karl Reinhardt, addressed the Carnegie Foundation for the Advancement of Teaching in the summer of 1907 and laid before it a plan for an exchange of teachers between Prussia and the United States. An exchange similar to the one proposed is now in effect between Prussia on the one side, and France and England on the other; and in view of the usefulness of this work, not only in the school systems of the respective countries, but also in the better feeling and understanding of the countries, Dr. Reinhardt urged the extension.

¹Bulletin issued by the Carnegie Foundation for the Advancement of Teaching. The committee of arrangements consists of Dr. Henry S. Pritchett, president of the foundation, Professors Julius Sachs and Calvin Thomas, Columbia University, and Headmaster James G. Croswell, Brearley School, New York.

sion of the plan to America. He requested that the foundation act in an official capacity with the royal government of Prussia and that it arrange all details of the exchange for this side of the ocean.

Upon receipt of the communication from the Prussian minister, the president of the Carnegie Foundation brought the matter to the attention of the trustees, and at the meeting of the trustees in November, 1907, it was voted that the president of the foundation should undertake the supervision, on the American side, of the exchange with Prussia. This bulletin is prepared, therefore, in order, first, to suggest the general nature and value of the system, and, second, to give the details by which it is to be put into operation. It is addressed especially to presidents of colleges, universities and normal schools, to superintendents of schools and members of school boards, and to teachers who may wish to consider spending a year or a half year in Prussia under the conditions offered by the Prussian government.

GENERAL NATURE OF THE SYSTEM

The plan for this exchange of teachers is to effect a permanent arrangement by which teachers of the United States shall be assigned for a year or half year to schools in Prussia, and *vice versa*. The instruction to be given in Prussia will be the teaching of English in a conversational way. It is not, however, necessary that the teacher should be a teacher of language in this country, but that he should be a cultured man able to conduct such exercises in an interesting manner.

The significance of the interchange of teachers between countries in Europe has greatly increased during the last two years. The immediate end gained by the exchange of teachers of language is the vitalizing of the instruction in foreign languages and

the correction of defects in the system of instruction in one country or the other. But the indirect products of the exchange are far more important. A teacher transplanted for a year to a school in a foreign country has the opportunity to improve his whole view of educational methods. He returns to his regular work with increased efficiency and with freshened ability to teach.

By such an exchange students at an impressionable age learn of the social customs and gain the point of view of the people of the other country, and this under an arrangement which is stimulating and interesting in comparison with the formal language study.

The exchange is, therefore, one that ministers not only to the improvement of the teaching of modern languages, but to general educational efficiency, to a broader understanding of other countries and a betterment of international relations.

From the point of view of the young, ambitious American teacher, the opportunity to spend a year in Prussia is an attractive one and should be considered in about the same way as a fellowship in a good American university. In either case the remuneration is slight. The American teacher who goes to Prussia for a year will receive from the Prussian government from one hundred to one hundred and ten marks a month (\$25 to \$27.50). It is estimated that this is equivalent to about \$40 to \$45 a month in a small town in the United States, and that it will meet the actual living expenses of the teacher during the year.

The remuneration is a secondary consideration. Teachers, especially those who are now serving their apprenticeships as scholars or fellows in colleges and universities, preparing themselves for the profession of teaching, will recognize the benefit which a

year of study and conversational teaching in Prussia would bring them. The opportunity is virtually that of a traveling fellowship. The teachers have the right to attend instruction in all classes of the institution so far as it is beneficial to their work. Many teachers in the United States who consider the plan may not welcome the idea that they are to remain at one particular institution during their official connection with the school system in Prussia; and that, further, they are under the direct guidance of the director of the institution to which they are assigned. These restrictions, however, have their advantages. The privilege of becoming acquainted with the school system of Germany in all its working details and the fact that this privilege is accorded the visiting teachers under most dignified and agreeable circumstances are worthy of emphasis. The director of an institution to which a teacher is assigned will, with his colleagues, take a personal interest in introducing the teacher into the social life of the community. Good-fellowship is extended to him, and with this the opportunity to gain an intimate knowledge of German ideals in teaching and to observe German methods in practise. In the United States such an opportunity is usually accorded a visitor who gives evidence of sincerity in his desire for the privilege, but in Prussia the privilege is rarely granted to any one except through formal application to the Royal Minister of Instruction.

In no case are teachers to take part in the formal instruction of the institution which they visit. They do not do the work, or even part of the work, of a regular teacher. This would impose too heavy a burden upon the visitors and would render their relationship with the students too didactic. The plan is for the visiting teacher to teach conversation in his own language in an informal manner for not

more than two hours each day, his classes being small groups of upper classmen who wish to perfect themselves in the language of the teacher. The students and the teacher discuss the manners and customs of the teacher's home, the school arrangements, the family life, the conditions of public life, the social usages, etc. Work of this nature will not interfere with the teacher's leisure for study and observation, and for short trips to communities other than his own.

DETAILS OF THE SYSTEM

All matters of business connected with the exchange of teachers are transacted either through the Prussian Minister, whose address is Berlin W, 64, Wilhelmstrasse 68, or through the Carnegie Foundation for the Advancement of Teaching, 576 Fifth Avenue, New York City. All communications from those interested in the matter in the United States should be addressed to the president of the Carnegie Foundation for the Advancement of Teaching.

All applications from institutions for teachers from Prussia and for appointments of individuals to go to Prussia should be filed at the office of the foundation not later than June 15, to go into effect in October. In making application a teacher should give his full name, address, date and place of birth, citizenship, religious faith, academic preparation for teaching and information concerning his fitness for the work, and preference in regard to situation in Prussia. Formal application blanks for this purpose may be had upon request from the offices of the foundation.

The candidate for appointment to a position in Prussia should be a graduate of a college which requires for admission the usual four-year high school course. He must have been for at least one year a teacher, though not necessarily a teacher

of languages, and must have reasonable facility in the German language. The teacher who goes to Prussia will enter a *gymnasium* or a *real-gymnasium*. His work will be the informal teaching of the English language by means of conversation. As stated in the general discussion, the remuneration is one hundred to one hundred and ten marks a month paid by the Prussian government in monthly instalments.

A teacher coming to the United States from Prussia may enter a college or a high school of good standing. His work, similar to that of the American teacher assigned to a post in Prussia, will be the teaching of the German language by means of conversation. The Prussian teacher for appointment in the United States must be a graduate of a German university and must have served for at least a year as a probationary teacher under the director of a *gymnasium*.

Any educational institution or city school board which makes application for a Prussian teacher must agree to pay the visiting teacher a sufficient sum to meet modest living expenses such as board, room, laundry, etc. In no case should this amount be less than the monthly allowance which the Prussian government pays to an American teacher in Prussia. An amount of approximately fifty dollars a month for a period of eight months will usually meet the requirement. The amount will vary according to location.

Many colleges, universities and normal schools which have departments of German will probably be glad not only to select a representative to go to Prussia, but also to receive in return a Prussian teacher who would doubtless stimulate a new interest in the work of the department. It is not necessary, however, that an institution which receives a Prussian teacher should

also nominate a teacher to go to Prussia; nor that if an institution sends a teacher to Prussia it receive a foreign teacher in return.

The Prussian government pays all the necessary traveling expenses of the teachers selected to come to America. While many of the American teachers will probably be willing to pay their own traveling expenses to Prussia, it is hoped that institutions which nominate the individual teacher will also pay the transportation to Prussia, thus making the appointment one of distinction and honor as well as an educational opportunity.

All appointments are made either for one academic year or for one half of the academic year. The year begins at Easter and is divided into two terms, the second term beginning about October 1. There are generally two weeks vacation at Easter, two weeks at Christmas, one week at Whitsuntide, and about four weeks in June or August, according to the arrangement of the ministry.

In accepting an appointment from either country, teachers pledge themselves not to publish anything concerning the institutions with which they are connected except with the permission of the proper authorities. This restriction is a nominal one. It is understood that there will be no objection to any serious and well-informed publication on the part of the visiting teacher.

At the present time women are not eligible to appointments as exchange teachers with Prussia.

American teachers who take these appointments are expected to render a report at the end of their service to the president of the Carnegie Foundation concerning such matters as seem to them important or to have educational value.

The Carnegie Foundation assumes no

financial responsibility in acting as an agent in this exchange of teachers.

SCIENTIFIC BOOKS

Comparative Anatomy of Vertebrates. Adapted from the German of Dr. Robert Wiedersheim, Professor of Anatomy in Freiburg, by W. N. PARKER, Professor of Zoology in the University of Wales. Royal octavo, pp. 576, 372 figures. Macmillan and Co., 1907. Third edition, founded on the sixth German edition (pp. 800, 416 figures).

As indicated in the preface and upon the title-page, this is not a literal translation, but a reduced "adaptation," a more difficult task which also throws a greater responsibility upon the adapter. Although former editions have been—and this will doubtless be—consulted by investigators and teachers, that it was prepared chiefly for students is stated upon the title-page of the original and in the preface of the adaptation; its substance and form, therefore, may fairly be judged from the standpoint of those who seek information and who expect a text-book or reference-book to be not merely correct, but well arranged, clear, consistent and approximately complete. Furthermore, while the fact that a technical work of this size has reached a sixth edition in one language and a third in another constitutes a presumption of its general acceptability, it is likewise warrant for what, under other conditions, might seem hypercriticism. The reviewer takes the ground that there is no excuse whatever for lack of clearness or co-ordination, and that for inaccuracy the only valid excuse is the advance of knowledge since the volume went to press. He holds, also, that rigid and unsparing criticism of works like the present is required if biology is to compete educationally with the more exact sciences and with the languages. Recognizing his own limitations, the reviewer hopes that others may contribute, to the end that future editions in both languages may be beyond criticism in all respects.¹

¹ Some suggestions as to the improvement of the previous edition were made by the reviewer in *The Nation* for October 28, 1886, and an indica-

Like its predecessors in both languages, this volume excludes the Tunicates and the other lower Chordata; students would welcome some account of these comparatively recent recruits from the "invertebrate mob," or at least references to their treatment elsewhere.

The preface states that "this edition has been almost entirely rewritten." That the changes have not always been for the better is exemplified in the omission of the essential qualification mentioned later in connection with the brain of *Amphioxus*. Careful revision would have averted the need of the following comment. The discussion of the nature and origin of the limbs opens with a paragraph in which the problem is said in the original to have been "seit einer Reihe von Jahren im Vordergrund." In the second English edition this was rendered "attacked vigorously during the last thirty years." In the present edition the entire paragraph is reproduced, *verbatim*; its literal interpretation would eliminate the first third of the period named in its predecessor. The paper and press-work are creditable to the publishers; many of the cuts are original and most of them, whether pictures (Fig. 134), schemas (Fig. 339) or colored diagrams (Fig. 306), are artistic, clear and correct. The least commendable purports to represent the "placoid scales" (Fig. 30). Admittedly "semi-diagrammatic," it need not so nearly resemble a segment of a rather roughly constructed harrow. Among figures in the original that are omitted from the adaptation are the skeletons of the pterodactyl (Fig. 37), *Archæopteryx* (Fig. 19) and *Stegosaurus* (Fig. 30). Among those added to the original are the meroblastic ovum (Fig. 4) and the "diagrammatic longitudinal section of a vertebrate" (Fig. 11).

Respecting this last, criticism is mainly from the pedagogic standpoint, bearing in mind that it occurs at the threshold of a work intended primarily for students. It faces the original's "diagrammatic transverse section." This is very simple and purely schematic,

tion of his disappointment may be found in the same periodical for February 13, 1908.