ciples we are studying in our courses; there is abundant evidence of glaciation.

The signs have helped in the instruction of the scientific students, but evidently they had a wider need.

From the standpoint of the people of the city who chance to pass through the park the signs have been a revelation; they have made the cliffs something more than the barrier to their progress across the city. Several letters have come in expressing delight at the offer of a solution to the "riddle of the rocks," and the simple explanation of what had generally been ascribed in a vague way to "an upheaval of some sort."

It was gratifying indeed to see the enthusiasm, almost eagerness, with which the city and college authorities took up the task and carried it through. Great credit is due President Ogilby of Trinity College, Professor Perkins, commissioner for Rocky Ridge Park, and Mr. Parker, chairman of the city park board.

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## SCIENTIFIC EVENTS

### THE ORGANIZATION OF TEACHING IN THE UNIVERSITY OF CAMBRIDGE[1]

THE University Commissioners appointed in accordance with the recommendations of the Royal Commission regarding the organization of teaching in the University of Cambridge have, after considering the representations made to them, sent a memorandum to the vice-chancellor embodying the following scheme:

*Faculties.*—Under the scheme, which it is proposed to bring into force on October 1, 1926, there would be faculties, faculty boards and a general board of studies. All fees for lectures announced by the general board of studies would be paid to the university.

There would be eighteen faculties, arranged in two groups—arts and science. In the arts group there would be eleven faculties and in the science group seven. In the latter, however, the faculty of biological studies would be divided into two departments, the one containing four sections and the other six. The departments in the second section of the faculty of biological studies would be biochemistry, experimental psychology, human anatomy, parasitology, pathology and physiology. The faculties would be composed of professors, readers, university lecturers, fellows of colleges giving lectures or demonstrations and a certain proportion of other persons appointed by the board of the faculty.

Medicine would be one of the faculties in the science group. It would consist of teachers who come within one of the classes above mentioned, and give instruction in medicine, surgery, pharmacology, anatomy, biochemistry, physiology or pathology, or give courses in physics, chemistry or biology for medical students.

The faculty boards would consist of the professors, a certain number of members of the faculty elected by it for a period of four years, a certain number of persons nominated by the council of the senate for a period of two years, a certain number nominated by the board, and in certain cases representatives of cognate studies.

The Faculty Board of Medicine would consist of the Regius professor of physics, the Downing professor of medicine, the professors of anatomy, biochemistry, pathology and physiology, four members of the faculty elected by it, and two persons nominated by the council.

*General Board of Studies.*—The suggestion of the commissioners is that the general board of studies should consist of the vice-chancellor, of four members each of the groups of arts and science faculties, respectively, four members of the council of the senate and two persons not members of the council of the senate elected by the university for four years. It is proposed to transfer the present duties of the general board in regard to the awarding of the higher degrees to the board of research studies.

*University Lectureships.*—The commissioners suggest certain regulations for university lectureships (including demonstratorships). Lecturers would be appointed by a standing committee separately constituted for the faculty or department. This committee would consist of the vice-chancellor, the head of the department, three members of the board of the faculty and two persons nominated by the general board.

*Tenure.*—Appointments would, as a rule, be made in the first place for three years, but on reappointment tenure would be for so long as the lecturer continued satisfactorily to perform the duties of his office until the retiring age. The faculty board is to ensure that professors, readers and lecturers continue to perform the duties of their office satisfactorily.

*Work and Salaries.*—The passage from the report under this head is as follows: "The Commissioners think it will be impossible to ensure absolute equality between the conditions of work and remuneration in the various faculties. Their present opinion is that there should be a basic amount of teaching work obligatory upon a university lecturer—namely, not fewer than thirty-two or more than forty-eight hours of lecturing during the year. That the initial basic salary given in respect of such amount of work be not less than £160. That the general board should have authority to vary in specific cases the requirements as to the basic amount of teaching work. That each faculty should have a scale of increments in the basic salary to be approved by the general board, and that other payments in addition to the basic salary should be made in consideration of work done in addition to the basic amount of work. That boards of faculties should have power to make a maximum additional payment of £250 a year to a university lecturer who is not a fellow of a college. That the payments to be made to university lecturers in addition to the basic salary should be deter-

[1] From the *British Medical Journal.*

mined by the faculty board concerned and made from faculty or departmental funds. These funds will consist of (1) fees for lectures, including lectures given by professors and readers, (2) contributions from the chest."

*Retiring Age.*—The commissioners recommend that the retiring age for all members of the university teaching and administrative staffs shall be 65, but contemplate that the general board would have power to continue a professor in office for a period not exceeding five years—that is, until he attains the age of 70.

*Position of Women in Relation to Teaching.*—The commissioners contemplate that the statutes will be so framed as to render women eligible for professorships, readerships, university lectureships and examinerships, subject to the reservations made by the Royal Commission. Fellows of women's colleges will be eligible to become members of faculties.

## CANADA'S WATER POWER AND MINING INDUSTRIES

A BULLETIN has been issued by the water power branch of the Canadian government on the effect of the plentiful water power on the future developments of the mining industry which states that the theory is often advanced that Canada is likely to become the leading mineral-producing country of the world, and considerable ground for this assumption is found in the fact that the Dominion contains 16 per cent. of the world's known coal resources, has greater asbestos, nickel and cobalt deposits than any other country and ranks third in the production of gold, while the diversity of her mineral endowment is indicated by the fact that the three main divisions—metallic, non-metallic and structural and clay products—include some sixty principal items, seventeen of which had a production value of $1,000,000 or over for each in 1923.

The best conception of the value of the output may be given by stating that the lowest since 1910 was $103,221,000 for 1911, and the highest was in 1920, when the valuation of $227,860,000 was reached, the average value being $194,957,000 for the five-year period. As the commodity prices reached a peak in 1920, and have since receded, production computed in terms of value is not a fair basis for comparison. An index showing the volume of production by weight would undoubtedly mark 1923 as the banner year in Canada's mineral industry, since new output records were established last year for coal, lead, zinc, asbestos and for the value of cobalt produced.

The principal uses of power in mining are for compressed air for drilling, driving motors for hoisting, haulage of ore above and below ground, driving ore crushers and conveyers, pumping water for the water supply and removing it when it accumulates below ground, lighting, heating, ventilating, signaling, for machine shops and for various electrical-metallurgical processes. Even in the comparatively simple method employed in the recovery of coal as much as 10 per cent. of the product may be consumed in generating the necessary power.

The bulletin states that the Dominion Water Power Branch has computed that on January 1 last the hydraulic installation for mining purpose in the Dominion had reached a total of 277,600 horsepower, of which 233,200 horsepower was purchased from central electric stations. It is estimated that the capital investment necessary to develop this power was £74,000,000.

From the point of view of minerals and the development of mining Canada is divided into five main areas, which consist of the Maritime Provinces, Quebec, Ontario, the Prairie Provinces and British Columbia and the Yukon. Each of these possesses large resources for water power, already developed or available. With the exception of some of the coal fields of the central plain there is no area for which ample water power can not be supplied.

The department's latest table of available and developed water power in Canada, dated February 1, shows there is a total available twenty-four-hour power, at 80 per cent. efficiency, of 18,225,316 horsepower at ordinary minimum flow and 32,075,998 horsepower at ordinary six months flow, and a total turbine installation in Canada of 3,227,414 horsepower. The table shows the fortunate distribution of water power throughout the Dominion. The two provinces without native coal, Ontario and Quebec, lead in the possession and utilization of water power, followed closely by Manitoba, where only lignite coal is found.

## LOWELL INSTITUTE LECTURES FOR 1924–25

NINE courses of free public lectures treating upon diverse subjects, including politics, history, meteorology, geology and science, are announced by the Lowell Institute of Boston, for the season which will begin about the middle of October and continue through March.

Of the lecturers four are from Harvard, one from Princeton and four from England. The British visitors are to be Rt. Hon. Herbert Fisher, M.P., former minister of education and British delegate to the first three assemblies of the League of Nations, who will speak on "The aftermath of war"; Dr. A. J. Carlysle, of Oxford, on "The medieval political theory and the principles of modern political organization"; General Sir Frederick Maurice on "Robert Lee, the soldier," and Professor William George Stewart Adams, of Oxford University, on "Idealism and realism in politics." Dr. Dana Carleton Munro, pro-