

elected to an Isaac Newton Studentship at the University of Cambridge, and F. L. Arnott, research student of Trinity College, has been elected to an additional Isaac Newton Studentship.

In Poland Mme. Cezaria Ehrenkreutz has been appointed professor of ethnography and ethnology at the University of Vilno, and Mme. Helen Wilman professor of Sanskrit at the University of Cracow.

DISCUSSION

A GEOLOGICAL SURVEY OF CALIFORNIA

FOR fifty-five years California was without a state geological survey, but now under the State Division of Mines a new survey known as the Geologic Branch has been established by the legislature and given a modest appropriation to maintain its activities. Though the appropriation is small to begin with (\$20,000 for the biennium), there is every reason to believe that this amount will be materially increased in the future and that California will go to the front as one of the states which recognize the importance of this fundamental science.

The chief function of the Geologic Branch of the State Division of Mines is to be the coordination of the geologic work of various institutions and concerns that have done or are doing geology in California. It is to encourage and promote further scientific work and to act as a clearing-house for unpublished geological data of the state. Furthermore, so far as finances will permit, the Division of Mines will publish detailed reports on the geology of California.

It is encouraging to find that geologists and institutions interested in the geology of California are giving full support and offering much assistance and cooperation to the new undertaking. It is only with this cooperative assistance that the geologic work may be a success.

At present several interesting projects are under way. With small payment for field expenses only, it is found that excellent young men may be encouraged to continue to completion important problems upon which they are at work in connection with the winning of advanced degrees from recognized universities. The work, since it is done under the direction of the university departments, is thus controlled through geologists of highest standing and the younger research workers are thus permitted the opportunity of satisfactorily completing their chosen work and guaranteed a medium for publication.

An extensive bibliography of the geology of California, to contain also a practical working index, will be one of the first publications of this new state survey. This fundamental guide to research is now being prepared by Dr. Solon Shedd, custodian of the Branner Memorial Library at Stanford University.

A geological map of California, on a scale of 1:500,000 (about eight miles to the inch) is another goal to be reached by the new survey. A tremendous

amount of unpublished detail in geology is already available for this map. It comes from many sources—scientific departments of commercial concerns as well as institutions of learning. Here again, coordination is the object, but cooperation is necessary to complete the work.

The great size of California can be appreciated only by persons traveling and working in this state. The complexity of the geology of California can never be adequately visualized by outsiders. This great size, together with the complexity of the stratigraphic and structural problems, makes the work, however, so much the more interesting, and it is little wonder that so many discussions arise regarding the intricate problems in this area.

In order to advance the knowledge of the geology of California, it will be necessary to organize our efforts, to bring to a head problems already commenced but temporarily laid aside and to avoid as much as possible the duplication of work. Thus the Geologic Branch, working under the well-established Division of Mines (formerly known as the California State Mining Bureau) with the state mineralogist, Mr. Walter W. Bradley, as executive head, will serve as a clearing-house for information regarding *work in progress*.

It would thus be advantageous for this new geological survey to know what work is being done now and by whom. Furthermore, if persons desiring to take up new problems in the state would first consult this scientific organization before attempting to spend much time and money in any particular way, it is quite possible that the information available would be of assistance in judging to what extent the area under consideration might already have been studied by others. This state division, therefore, requests further and continuous cooperation in the endeavor to keep informed concerning the geologic activities in California.

OLAF P. JENKINS

CALIFORNIA STATE DIVISION OF MINES

NOTE ON THE HIGHER ALCOHOLS OF FERMENTATION

In the industrial fermentation of molasses for the production of alcohol there is always found a certain quantity of high boiling material which is known as fusel oil and which forms one of the chief by-products of the industry. The commercial product is obtained