was aroused by Professor W. Heisenberg's lecture, 'Wandlungen der Grundlagen der exakten Naturwissenschaften in jüngster Zeit,' in much the same field as that covered by Sir James Jeans's address at Aberdeen. An exhibition of apparatus, preparations and scientific books was held in the Ausstellungshalle, one of scientific films in the Tierärztliche Hochschule, and another, the traveling exhibition of the Dresden Museum of Hygiene, 'Leben und Gesundheit,' in the Künstlerhaus, while lighter moments were provided for by the Opera House and theater and the usual excursions to neighboring centers of attraction."

DISCUSSION

THE DISTRIBUTION OF FUNDS FOR RESEARCH

MY attention has been called to the possibility of misinterpretation of a phrase in which reference was made to the Land Grant Colleges in my article on "Science and Prosperity" published in the issue of SCIENCE for November 2. I was discussing the possibility of government support of scientific work on a national scale and the particular question of efficient administration of such funds if they were available. In this connection appeared the sentence: "Perhaps the worst way to carry on research is to distribute funds according to some formula such as that followed in the support of Land Grant Colleges, $50,000 to each State in the Union, or so much to every research laboratory."

Being myself an administrative officer of a land grant college, and believing that the land grant colleges are the backbone of our American system of higher education, I certainly did not intend to imply a criticism of the land grant colleges or of the basis on which they receive federal support. This support was intended to stimulate the program of higher education throughout the country, and particular reference was made to agriculture and mechanic arts. It is true that land grant colleges in less populous states receive the same federal aid as do those in the more populous states, but on the other hand their need of such support is generally greater. However this may be, my statement on the subject was not a criticism of the land grant method of supporting the educational programs in land grant colleges, but was a statement of my judgment that a similar basis would not be an efficient one for the support of a research program whose objective is to secure the maximum scientific and technical development for a given expenditure of time and money. The reasons for this are obvious to those acquainted with the geographical distribution of scientifically trained men.

Perhaps the point which I was trying to make would be illustrated by the following example: Suppose the objective were to shoot as many ducks as possible with a given amount of ammunition. The way to proceed would not be to fire so many volleys in each state of the Union or a volley over each lake in the country, but rather would be first to locate the ducks and then fire at them. Similarly, the objectives of a program like that which I was discussing would best be attained by first locating the big ideas wherever they may be, and then allocating the necessary funds to put these ideas to work.

The only reason for mentioning the land grant college situation explicitly was because some corresponding plan of geographical or proportional distribution of funds might be the first thought regarding its administration, and such a procedure would, I believe, be fatal to the success of any plan aimed at quick and efficient stimulation of scientific work.

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THE MOTION OF GLACIERS

IN SCIENCE for November 2, 1934, is a discussion by O. D. von Engeln, entitled "The Motion of Glaciers," to which objection should be raised. Its final paragraph reads:

> The above quotation, together with the one given in a preceding paragraph, are enough to permit appreciation of the correspondence of the two interpretations of glacier motion and of the special significance of the salt solution to the required lubrication for inter-grain shifts. They will also serve to make clear how different this concept is from the shear theory, in which it is postulated that glacier motion is: solid flow by idiomolecular exchange between ice crystals, solid shearing of aggregates of granules, intermittent slip along well-developed thrust planes and sliding of the whole body of ice over the rock beneath. Such shear concept Hess, now, and the present author, earlier, hold to be fundamentally and completely erroneous.

The last sentence contains a rather sweeping statement. Let us consider the four sorts of movement which are held to be "fundamentally and completely erroneous."

(1) Sliding of the whole body of ice over the rock beneath. What else could cause the striation, grooving and fluting found on the underlying rock surface? The length and depth of some of the individual scratches would seem to indicate that the rock frag-