quented and even the more dangerous regions, and yet, in spite of the great distances travelled and all the excessive difficulties encountered, the entire survey has thus far been made without the occurrence of a single fatal accident.

Isostacy and the Size and Shape of the Earth: William Bowie.

The determination of the size and shape of the earth would be a simple matter if its geoid or sea-level surface formed a geometrical figure, but as it does not the actual problem is a difficult one. These deviations, it was shown, are due to differences in the vertical distribution of mass in adjacent isostatic regions. When corrections for the effects of topography and isostatic compensation are applied to the astronomically observed positions the deviation of the geoid from the spheroid surface is largely eliminated.

The shape but not the size of the earth may be determined from the observed values of the force of gravity at stations widely separated in latitude. Here again a correction for topography and isostatic compensation is necessary for the best results. Absolute values of gravity can be obtained only with a long series of observations, and therefore nearly all gravity determinations are made by the relative method. Those of the Coast and Geodetic Survey are based on the absolute value at Potsdam.

Investigations made by the U. S. Coast and Geodetic Survey during recent years show that the area of the United States, taken as a whole, is in a state of perfect isostacy, and that areas of limited extent deviate only slightly from that state. The paper will later appear in full.

Seismology: Otto Klotz.

The most improved seismological apparatus, the data obtained by them and the conclusions logically deduced from this data were all discussed at some length. A full and interesting account, together with many illustrations, was given of a recent installation of seismological apparatus that registers in magnified form even those small vibrations of the earth's crust caused by the passage of ocean waves.

The Factors of Climatic Control: W. J. Humphreys.

It was explained that such things as land elevation, oceanic circulation and volcanic dust in the high atmosphere are among the most important factors of climatic control, assuming of course approximate constancy of atmospheric composition and solar radiation.

Both the direct or primary and the indirect or secondary effects of each of these factors were explained in some detail and illustrated by statistical curves.

It is expected that the paper will later appear in full.

There was also one joint meeting with Section C—Chemistry, at which the following papers were presented:

Geochemical Research: John Johnston.

A general account of some of the main lines of geochemical work which are now being pursued in the geophysical laboratory of the Carnegie Institution.

The Ternary System Lime-Alumina-Silica: G. A. Rankin.

The author discussed the results of an extended investigation of this system, which is important from a geological standpoint as well as from the fact that these three oxides are the essential ingredients in the manufacture of portland cement clinker. The fields of stability of all the substances which may be encountered in this system have now been determined satisfactorily; so that it is now possible to state precisely what happens when any mixture of the above three oxides is heated, and hence incidentally to specify the essential constituents of portland cement clinker.

W. J. Humphreys,
Secretary of Section B

SOCIETIES AND ACADEMIES

ACADEMY OF SCIENCES OF ST. LOUIS

At a meeting held June 1, Professor Nipher gave a brief account of a new method of decomposing water.

A continuous discharge from electrodes in separate beakers was made to pass through a capillary tube, forming a siphon connecting the water in the two beakers, water was decomposed at the electrodes and within the siphon. More than 50 times as much explosive gas was discharged from the siphon as was collected in the tubes around the electrodes. Distilled water which had been freshly boiled was used.

A full account of this result will be given in a volume now in the hands of the publisher, which will give a full account of the results of Professor Nipher's experimental work during the last five years.

C. H. Danforth,
Secretary