geologist and the ceramist in the origin of clays and in similar problems.

Geophysics. This subject has developed to the point of receiving recognition by the formal organizations of societies or laboratories such as the Geophysical Union and the Geophysical Laboratory of Washington. Among the major problems of geophysics are those relating to the earth's interior, its composition and the distribution of density, rigidity and temperature. The problem of equilibrium or isostatic adjustment between high- or low-line segments of the outer portions of the earth, and the problems of the mechanics of mountain-making have long demanded attention. Among other equally important problems of geophysics may be mentioned the problem of crystal growing; the physics of yielding mechanisms such as clays and sand.

Fatigue in Metals. This is a field of very great importance, involving not only various branches of chemistry and physics but engineering as well. In spite of many studies, a vast amount of work yet remains to be done, and it is probable that only a concentrated attack by the bringing together of a large number of specialists to collaborate in carrying out a well-organized plan can bring conclusive evidence to bear upon this wide field.

Photogrammetry. There is a rapidly growing literature in this field and there has recently been organized a Photogrammetric Society. The Fourth International Congress on Photogrammetry met in Paris in September, 1934. A limited number of methods have been employed in reducing aerial photographs to a plane surface. There are obviously involved in the solution of this problem both optics and mechanics as well as the distortion of the various materials employed, particularly photographic films, printing paper and the like. The American Geographical Society has for some three years been engaged in research on questions of improving existing techniques. Mathematics, physical and geometric optics, photography, psychology and chemistry all united in providing means for attacking this problem.

CONCLUSIONS

It will be agreed that borderland fields should receive some special stimulation, partly because of the inhibitions mentioned above; partly because of the fact that there are, in general, no scientific societies or journals to provide a common meeting ground for those who by chance become interested.

However, it will also be agreed that undue artificial stimulation, "by the gods on Olympus" deciding what should be done and setting other people to do it, is highly undesirable; and in the long run is likely to prove detrimental. In the fields of pure science at least, specific machinery directed toward the organization and prosecution of research has availed little. Original, enthusiastic, capable investigators are not attracted by such means. The whole history of science shows that progress rests in the main on individual initiative. It is this that must be encouraged, whether in borderlands or in the conventionally recognized subdivisions of science. In this respect promotion of research in borderland fields offers no unique problem. But how can we see to it that the individual is encouraged, and not discouraged?

Surely, no complete formula can be written. But the following suggestions are made:

(1) Steps should be taken to see that no worthy problem falls between two stools. Whenever there is presented a problem or a proposal that lies between two or more sciences, make it by special assignment the joint responsibility of competent representatives of the sciences concerned, so that the problem may be evaluated on its merits and receive suitable support.

(2) Whenever activity in a given borderland field seems to be generally developing, provision should be made under some auspices to stimulate interest by originating joint research committees representative of the fields involved.

(3) Scientific societies should be encouraged to continue to hold borderland symposia. The National Research Council would be glad to cooperate in planning these meetings.

(4) Universities should be encouraged to give special or regular courses in borderland fields; and to break down the water-tight compartments that all too frequently are found in academic circles.

(5) And in general steps should be taken to remove the inhibitions in the way of borderland fields so that they may, along with the recognized sciences, develop naturally and without regimentation.

SCIENTIFIC EVENTS

FEDERAL APPROPRIATIONS

AN Associated Press dispatch printed in *The New York Sun* reports that, according to an official accounting of approved work-relief projects, appropriations for highway and street construction work were calculated at $855,000,000. Other items in the summary of federal allotments for approved enterprises were:

Civilian Conservation Corps, $522,084,000.

School buildings, $174,243,000.

Other public buildings included in the Public Works

Administration and Works Progress Administration programs, $113,475,000.

Parks, athletic fields and similar projects under WPA, $156,610,920.

Water works, sewers, drainage and related work under WPA, $142,603,767.

"Community service" and "miscellaneous" projects under WPA, including clerical and library work and other "white collar" enterprises, $80,931,506.

Bureau of Reclamation, for power plants, dams, drainage projects, mapping, irrigation and the like, $79,650,000.

For projects under the War Department's engineering corps, including flood control, harbor dredging and preliminary work on the Atlantic Gulf canal, $144,716,169.

Resettlement Administration, $38,000,000.

Navy Department, $17,370,470—mostly for improvement of buildings and grounds at yards and docks.

Sanitation projects under WPA, $22,654,540.

Airport work under WPA, $17,399,624.

Erosion surveys and control work, under the Soil Conservation Service, $25,000,000.

National youth movement, $27,056,268.

Projects for unemployed artists, writers, musicians, actors, directors, etc., $27,315,217.

The large amount of approved highway and street projects was shown to be made up of $391,000,000 administered by the Bureau of Public Roads, $100,000,000 to pay for federal highways previously authorized under the Hayden-Cartwright act, $183,729,913 for street work under the jurisdiction of WPA, approximately $164,000,000 of secondary or farm-to-market roads to be handled by WPA and $15,989,743 of PWA grants.

The accounting covered more than $900,000,000 of approved WPA projects, $1,396,966,759 of projects under various federal departments and agencies and PWA grants amounting to approximately $330,000,000. In addition the President has approved PWA loans amounting to $182,095,581.

PWA grants for various utilities—sewers, sewage disposal plants, water systems, electric distribution systems and the like—were placed at $100,197,626.

Other approved allotments made to different government agencies include:

Bureau of Animal Industry, mainly for tick and pest control, $1,682,900.

Game protection, $266,289.

Bureau of Entomology and Plant Quarantine, $16,559,817.

Forest Service, $13,827,500. Census Bureau, for a survey of retail trade, a survey of business and preparation of an alphabetical index of the 1900 census, $9,881,948.

Construction of fish hatcheries and improvement of spawning grounds, $230,996.

Road construction in Alaska, $671,500.

Occupational survey under the United States Employment Service, $900,100.

Boats, telephone systems, repairs and improvements for the Coast Guard, $5,263,995.

Public health inventory, $3,450,000.

Survey of tax collections and tax investigations, $6,313,126.

Improvements and repairs at army posts and national cemeteries, $12,947,766.

Rural Electrification Administration, for power distribution lines, $4,818,267.

Veterans' Administration, for improvement of buildings and grounds at veterans' hospitals and other institutions, $1,234,120.

CALL FOR PAPERS FOR THE ST. LOUIS MEETING OF SECTION I (PSYCHOLOGY)

SECTION I (Psychology) will hold its sessions from Monday, December 30, to Wednesday, January 1. On Monday evening there will be a joint banquet of Sections I and Q at which the retiring vice-presidents of the two sections will give their vice-presidential addresses.

On Monday afternoon there will be a symposium on "Maturation and Learning," in which papers will be read by investigators who are doing active research in this field. This will be a joint meeting of Sections I and Q.

Since the change of the date of the meetings of the American Psychological Association from Christmas to September attendance of those interested in the meetings of Section I has steadily increased. It is hoped that a strong program of general interest to psychologists can be arranged for the St. Louis meeting and that a large number of psychologists will be able to attend. The character of the program must necessarily depend to a very large extent upon the submitted papers, and the members of Section I are urged to send in abstracts. Both theoretical and experimental papers will be acceptable.

All fellows and members of the section who wish to read papers should submit abstracts in duplicate (not more than 300 words in length) of the papers which they wish to present. The time required for the presentation of the paper up to a limit of fifteen minutes should be noted. Abstracts should be sent to the Section Secretary, John A. McGeoch, Department of Psychology, Wesleyan University, Middletown, Connecticut, not later than November 9. Members and fellows are urged to prepare their abstracts promptly. This is the only call for papers which will be issued.

JOHN A. MCGEOCH

THE SIXTH NATIONAL ORGANIC CHEMISTRY SYMPOSIUM

THE sixth National Organic Chemistry Symposium will be held in Rochester on December 30 and 31 and January 1. The arrangements are in charge of Erle M. Billings, of the Eastman Kodak Company.