manufacture oil-immersion objectives of this aperture (0.80 N. A.). With such an objective the worker either in biology or in medicine can get good results even without a very profound knowledge of the optical principles involved. He can also go forward with his work with full confidence that the objective being used will give good results, and every worker knows the importance of confidence in his apparatus for successful accomplishment. Finally, during the past summer and autumn the Bausch and Lomb Optical Company of Rochester, N. Y., undertook the manufacture of the desired medium-apertured oil-immersion objectives. The outcome is all that could be asked; and they have been subjected to the most rigid tests in actual practise in the fields in which dark-field work is applied. These objectives are now available, and the writer feels confident that every one using them will feel grateful for the freedom from worry that was always involved in modifying a high-apertured objective for the dark field.

It is only fair to add that no matter how enthusiastic one may be over the possibilities of dark-field microscopy, much more skill is necessary in it than for the ordinary bright-field microscopy. I think that all who have used the dark-field microscope successfully will agree that the ideal plan for an individual or for a laboratory is to have a microscope devoted to this work alone. If then a proper electric light is available, one can proceed to make examination of specimens with the dark-field microscope with the same certainty and rapidity with which examinations are made with the bright field.

It may be stated in passing with reference to these new objectives, that they have certain advantages for ordinary bright-field work. As ordinarily employed the oil-immersion objectives of high aperture (1.40 to 1.20 N. A.), are used in bright-field work without oil-immersion contact between the under surface of the slide and the top of the bright-field condenser. As light of an aperture greater than 1.00 N. A. can not emerge from the condenser into air, it follows that not nearly all of the available aperture is employed. It was believed therefore that these medium-apertured objectives would serve to give practically as good images for histological, embryological and pathological specimens as the high-apertured objectives as ordinarily used. Actual tests proved the correctness of this supposition. Of course when the resolution of fine details is involved the higher aperture is of great importance, but in order to be fully utilized the microscopic slide must be in immersion contact with the top of the condenser.

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THE INTERNATIONAL GEOLOGICAL CONGRESS COMMITTEE

AT the twelfth session of the International Geological Congress, the president was instructed to nominate a committee to consider the question of a permanent constitution and to submit a proposal thereon to the next session of the Congress. The following committee was appointed: R. W. Brock, President; J. S. Anderson, C. Barrois, A. Karpinsky, A. Renier, Geo. Otis Smith, G. Steinmann and E. Teitze.

The committee met in the rooms of the Geological Society of London on July 20, 1921. There were present: R. W. Brock, President; A. Renier, Geo. Otis Smith and F. D. Adams (ex-officio member).

At a preliminary conference called to obtain for the guidance of the committee the opinion and advice of a wider and more representative body, the following resolution had been passed:

That this meeting is of opinion that the question of the establishment of an International Geological Union should be considered at the next International Geological Congress, and that it is undesirable that any steps should be taken until the question has been so considered at a full and representative gathering of geologists.

A concise proposal with regard to a constitution to submit for the consideration of the next International Geological Congress was drawn up, the main points of which are as follows:

The purpose of the International Geological Congress, it was stated, is to advance scientific investigations relating to the earth from the point of view

of pure geology as well as of its application to the arts and industries.

The sessions of the Congress are called every three or four years, to continue for about one week. At each session, invitations will be received and the meeting place of the next session determined by the Congress. Excursions constitute an important adjunct to the sessions and every possible facility is given to the members to study the geologic structure of the country where they are assembled, and of its mineral resources, at a minimum expense and under the direction of the most competent guides, with guide books specially prepared which serve the double purpose of guiding the excursionists and of presenting a general review of the geology of the country in which the Congress meets.

Standing committees are organized for the purpose of handling questions of general or international interest demanding international collaboration, and the

Congress may award prizes founded for meritorious work within the domain of geologic research.

The organization should be simple and include:

A Committee of Organization, appointed by the host nation, will arrange for that session, its programs and excursions, and its publications.

Officers.—At the first general meeting of the session, the Committee of Organization shall submit nominations for President and Secretary of that session, and the Council shall submit nominations for Vice-President, for elections by duly accredited members.

Council.—The Congress is administered during its sessions by a Council made up of

1. Members of the Committee of Organization for that session.
2. Presidents of Geological Societies.
3. Directors of national and other large geological surveys.
4. Officers elected by the members of the session.

The Council will prepare the order of the day for the meetings.

Standing Committees.—These Committees may be appointed by each Congress to report at the next session, and will be responsible to the Committee of Organization for that next session for the preparation and submission of their reports.

Membership.—Invitations to each session of the Congress are issued by the committees representing the host nation, to recognized geological organizations, universities, and to national governments. Membership in the Congress is generally restricted to geologists of national standing.

Tenure of Office.—The Committee of Organization and officers shall hold office until the close of that session, or until the next committee of organization is formed, to which the documents and files of the Congress shall be transferred. Subcommittees of the local committee shall continue to function until the publications of the session are issued or other business concluded.

The President of the Congress shall, however, preside at the opening meeting of the next session of the Congress, resigning the chair when his successor is elected.

SCIENTIFIC EVENTS

MOLDING SAND RESEARCH

Hundreds of thousands of tons of molding and core sands are used annually in the iron, steel and non-ferrous foundries of America. A little of it is re-used; much more might be. Sands are not always correctly selected for specific purposes. Mixing and other treatment can secure improvement. In what ways can foundry practise as to sands be bettered? What economies can be realized, not only in reduced expenditure for sand, but also in less number of lost castings and higher quality of accepted product?

Last spring, the American Foundrymen's Association decided that thorough study of this subject would be profitable and asked the cooperation of the American Institute of Mining and Metallurgical Engineers. The Institute referred this request to the Division of Engineering of the National Research Council, of which it is a member. Through joint action with the division a valuable digest of the literature has been made by Professor Robert E. Kennedy, of the University of Illinois, and a large committee of foundrymen, engineers and scientific men has been selected, under the general direction of President W. R. Bean, of the Foundrymen's Association and the chairman of the division.

This committee on molding sand research has just been organized with the following officers and executive committee:

Chairman: R. A. Bull, consulting engineer, Sewickley, Pa.