# SCIENCE

FRIDAY, JANUARY 5, 1917

CONTENTS



**MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.**

## THE NEW YORK CONVOCATION

THE meeting of the American Association for the Advancement of Science and the affiliated national scientific societies held in New York City during the last week of the year was the largest and most important gathering of scientific men hitherto held in this country or elsewhere. The association met in twelve sections and there were fifty-two separate societies in session, not counting the four great engineering societies, which held one general meeting with the association. It is difficult to estimate the attendance. The registration of members of the association was in the neighborhood of 2,100, but it is impossible to state the percentage of members of the association who register, or the percentage of those in attendance at the meeting who are members of the association. Casual observation seemed to indicate that about one in four or five attending the meetings wore the badge of the association and this would give an attendance of over 8,000, but naturally very little weight can be laid on such an estimate. In spite of the magnitude of the meeting, Columbia University and the other places in which sessions were held did not appear

to be overcrowded, the university and the other educational and scientific institutions of the city having grown in proportion to the increase of scientific men since the meeting in New York ten years ago. There was no delay in registration and no difficulty in obtaining rooms at the hotels or elsewhere. There was a very great conflict, in so far as there were nearly always a number of different meetings or other events which members would have been glad to attend. This conflict may make a greater impression than if the meetings were being held in fifty different places throughout the country, but obviously the real interference is much less.

The plan of holding the greater convocation week meetings once in four years seems to have been justified by the event. The meeting four years hence will be in Chicago, that of eight years hence in Washington, and in twelve years there will be a return to New York. It may be that ultimately two events in the same year, the presidential election and the convocation of our scientific societies, will be recognized as of comparable national importance. It is hoped that at these greater convocation week meetings the societies devoted to the natural and exact sciences will meet with all national organizations concerned with science in its widest sense, not only engineering and medicine, but also education, economics, history, philology and indeed all the subjects falling within the curriculum of the modern university, subjects which can be advanced by research. A meeting of such magnitude would have great advantages in bringing together men working in diverse directions but none the less having common objects, and would serve the purpose of impressing on the general public the magnitude and importance of the work accomplished in this country for scholarship and science.

The American Association of University Professors and the American Congress of Internal Medicine met this year for the first time in convocation week, and there is no reason why all national societies should not do so when the meeting is in New York, Chicago or Washington. The arrangements for affiliation with the association are very simple, and apparently to the advantage of all. The affiliated society has the privilege of meeting with the association when it sees fit and of electing one or two members of the council of the association. The association has no control of any kind over the affiliated society. Even when the affiliated society does not meet at the same time and place as the association, it is desirable that there be held once a year a congress representing all the scientific societies and scientific interests of the country, and it seems that the council of the association can serve this purpose better than any other body. The National Academy of Sciences, a small self-perpetuating body, consisting of men elected for eminence in science at the average age of about fifty years, may be of use as a roll of honor, but it can scarcely be expected to be an efficient working body, and it is not so well in accord with democratic conditions as a body of delegates elected to represent the scientific societies and the scientific men of the country.

The executive, legislative and judicial functions of government are recognized, but it is scarcely yet appreciated that there should be a scientific or expert department coordinate with these. As the courts theoretically interpret legislation and the executive carries it into effect, so there is needed a body which will provide the impartial advice and scientific knowledge on which legislation should be based. This need is being gradually recognized by the creation of scientific bureaus of the departments and the different government commissions. Its adequate appreciation may, however, be hastened by the formation of a body representing the scientific interests of the country and competent to speak for them.

The various scientific events of the meeting are in part recorded in the report of the general secretary printed in this issue of SCIENCE and in the programs that were published in advance. They will also be somewhat fully represented by the various addresses and papers and by the proceedings of the different societies and sections to be printed in SCIENCE. A few of them, however, may be recorded here. At the opening general session, after the admirable address of the retiring president, Dr. W. W. Campbell, director of the Lick Observatory, there was a largely attended reception given by the president and trustees of the museum and the honorary reception committee. The two public lectures to the citizens of the city could hardly have been better from the point of view of subject-matter or of lecturer. Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute, lectured at Columbia University on "Infantile Paralysis and the Public Health," and Dr. A. A. Noyes, professor of physical chemistry in the Massachusetts Institute of Technology, lectured at the American Museum of Natural History on "Nitrogen and Preparedness." In each case the lecture concerned a subject of vital public interest and was given by the man most competent to survey it.

There was held at the United Engineering Societies Building a meeting under the auspices of the four engineering societies which have their headquarters in New York to discuss the interrelations of engineering and pure science. Dr. Henry M. Howe, the distinguished metallurgist, professor emeritus in Columbia University, the chairman of the section, presided, and Dr. Bion J. Arnold, the retiring vice-president and past-president of the American Institute of Electrical Engineers, gave his address, which was followed by addresses by Mr. Clemens Herschel, president of the American Society of Civil Engineers, and Dr. Ira D. Hollis, president of the American Society of Mechanical Engineers. The scientific session was followed by a reception.

The addresses given by the other retiring chairmen of the sections are noted in the report of the general secretary and may be looked for in SCIENCE. Other addresses by the presidents of the societies and papers presented before them will also be printed here. Of the latter, it is only possible to mention several of the symposiums and general-interest sessions. These included "Biology and National Existence" before the American Society of Naturalists; "The

Structure of Matter'' before the sections of physics and chemistry; ''The Relations of Chemistry to Botany'' before the section of botany; ''The Adjustment of Science to Practise in Agriculture'' before the section of agriculture; ''Cancer and its Control'' before the section of physiology and experimental medicine; ''Highway Engineering'' before the section of engineering; Reports of State Geologists before the section of geology and geography; the Metric Conference before the section of social and economic science; and the celebration of the twenty-fifth anniversary of the American Psychological Association.

There was held at Columbia University a scientific exhibit and conversazione arranged under the auspices of seventeen committees, representing the principal sciences. This not only showed in an interesting way some of the more recent scientific developments, but also served as an excellent place for people working in different departments to meet. There was also held at the American Museum of Natural History an exhibit of chemical ''preparedness,'' and one on the work of Pasteur. In addition there were numerous exhibits arranged by the special societies.

There were many dinners and social events. Tea was served daily by the Columbia University Ladies Committee. The smoker given by the New York Zoological Society in the Aquarium to visitors working in the natural sciences was especially attractive, but every society and group had its smokers and dinners. Among them may be specially mentioned the dinner in honor of Professor Edmund B. Wilson, of Columbia University, a former president of the association, given by his students and colleagues.

The meeting of the Committee of One Hundred on Scientific Research, in spite of the fact that it was held the day after Christmas, was attended by about fifty members and was notable for important reports and discussions. The report of the committee on industrial research was presented by Dr. Raymond Bacon, director of the Mellon Institute for Industrial Research, and the discussion was opened by Dr. J. J. Carty, chairman of a similar committee of the National Research Council, and by Dr. F. K. Richtmyer, chairman of a similar committee of the American Physical Society. Preliminary reports were made by eleven of the chairmen of the twelve sub-committees on the different sciences, all of whom were present. Arrangements were adopted for cooperation with the National Research Council.

The meeting was much better reported in the press than ever before. It is true that on one day when from two to three hundred scientific papers were presented, many of them of general interest if properly interpreted for the public, there were selected for head lines one that referred to birth control and one that referred to the Rev. Billy Sunday, but for the first time adequate attention was paid to the meeting, which obtained a position on the front page and was suitably discussed in editorial articles. This circumstance is of course accounted for by the increased interest now taken in science throughout the world, and it is much to be hoped that for the welfare

of the world this interest may be maintained. A meeting such as this should have as one of its principal functions to impress on the general public the importance of scientific research, for it is only from the people at large that new recruits for science can be obtained and means provided for the support of research.

The council discussed business of importance. Two general resolutions were adopted. One advocated a greater use of the metric system of weights and measures in the United States, "so as to increase the usefulness of our publications and to aid our foreign relations with the many countries where these units are official and in use." The other extended to the secretaries and bureau chiefs of the United States government the appreciation of the association of the fact that through their encouragement the important scientific work under their direction has been well represented at the meetings of the association. "This representation has greatly promoted the influence and usefulness of the bureaus, both by making their work more widely known, and by the stimulus imparted to and gained from other workers in similar fields. The association is so keenly interested in the work of the government bureaus that it ventures to express the hope that members of their staffs who are engaged in research be given all practicable encouragement to attend the meetings of the association and other national and international organizations devoted to the advancement of science."

Thanks to the Colburn bequest, the research funds of the Association have been greatly increased and now amount to about $110,000. During the year careful investments have been made by a committee consisting of the treasurer, Dr. R. S. Woodward, president of the Carnegie Institution, Mr. A. S. Frissell, president of the Fifth Avenue Bank, and Mr. John Tatlock, of New York City. Some part of this fund is reserved for specific purposes, but the balance of the income, amounting to about $4,000, was appropriated for allotment for scientific research, and a committee on grants of seven was appointed, representing the principal sciences and groups of sciences. This committee consists of Professor E. C. Pickering, chairman, mathematics and astronomy, Professor Henry Crew, physics, Professor E. C. Franklin, chemistry, Professor W. B. Cannon, zoology and physiology, Professor N. L. Britton, botany, and Professor J. McKeen Cattell, anthropology and psychology, leaving one vacancy to be filled by a geologist. The committee plans to make a careful study of the conditions in order to determine how the money can be expended to best advantage. Applications for grants will, however, be welcomed; these can be made to the chairman of the committee or to the member in charge of the subject concerned.

An appropriation was made for the work of the Pacific branch of the association, amounting to the entire dues paid by the members within the division except that required to pay for the journals that the members receive. The entrance fees collected by the branch were also allotted to it. There was recently established through

the initiative of Professor H. L. Fairchild, a local branch at Rochester, and it is hoped that other branches will be established wherever they will serve to unite and advance the scientific interests of a city or locality. To such local branches, a sum not to exceed fifty cents for each member of the branch was allowed, together with the entrance fees secured through the efforts of the branch.

The council had pleasure in acknowledging gifts for the research fund of the association of $1,000 from Mr. E. D. Adams, and of $500 from Mr. Cleveland H. Dodge. In accordance with the provisions of the constitution, Mr. Adams was elected a patron of the association. If a hundred or a thousand men of means in this country whose wealth is in large measure due to the efforts of scientific men made more efficient by their national societies would become patrons of the association there would be provided a productive fund for research administered by scientific men themselves, and the relations of science to industry would be promoted. At the meeting about three hundred citizens of the city became members of the association, and of these a considerable number became life members, including Mr. Henry C. Frick, Mr. Stuyvesant Fish, Mr. Felix M. Warburg, Mr. James W. Ellsworth, Mr. Francis L. Stetson and others prominent in the professional and business life of the city.

The committee on policy was instructed to prepare a revision of the constitution, with by-laws, and to report to the council at its next stated meeting. The committee on policy was instructed in this revision especially to redefine the duties of the permanent secretary and of the general secretary. An amendment to the constitution was introduced, which will be voted on next year, making the term of office of the general secretary five years, and it is planned that the general secretary shall be active in the work of the organization of the association in its relation to the affiliated societies and the general scientific activity of the country. Professor J. McKeen Cattell was elected to this office, to which no salary is attached.

During the present year in order to recognize the cooperation that exists between the American Association and the affiliated societies, members of these societies who joined the association during the year were admitted without payment of the entrance fee. The results were particularly gratifying in demonstrating the cordial relations existing between the association and the national societies, as about 5,000 members of these societies took advantage of this offer and were elected to membership during the year. We hope to publish later a statement showing the number of scientific men from each of the affiliated societies who joined the association, for it is a remarkable exhibit of the number of men in this country engaged in scientific work. When the association met in New York City in 1900, there were about 1,700 members; when it met there in 1906, there were about 5,000 members, there are now about 12,000 members. The entrance fee of $5 prevents some of the younger scientific men of limited means from joining the association, but it seems necessary to retain it to provide an income in addition to the very small annual dues

of $3, and also because it makes the membership more permanent, members hesitating to withdraw for a short time when such a fee must be paid to resume their membership. The council, however, passed a resolution providing that those becoming members of the national affiliated societies might be elected to membership in the American Association without payment of the entrance fee, if they join the association within one year of becoming a member of the affiliated society. This offer should give assistance to the affiliated societies as well as the association, and should serve to unite in the association almost without exception the younger scientific men of the country.

The nation should be proud of its scientific men when it regards the three presidents of the association, the retiring president, the president of the meeting and the president elect. Dr. W. W. Campbell, director of the Lick Observatory, who has twice crossed the continent to attend the meetings and has devoted his invaluable time to the organization of the Pacific Division, gave the address as retiring president, which in content and in form of presentation set a model which any similar officer anywhere in the world will find it hard to meet. This address will be printed in SCIENCE as soon as arrangements can be made for the illustrations. Dr. Charles R. Van Hise, president of the University of Wisconsin, in the front rank of geologists in a country which leads in geology, and equally a leader in university education and in movements for the public welfare, made an admirable presiding officer, both in the general sessions and at the meetings of the council. Dr. Theodore W. Richards, director of the Wolcott Gibbs Memorial Laboratory, Harvard University, distinguished wherever chemical research is undertaken, the only native-born American to whom a Nobel prize in science has been awarded, was elected to preside at the meeting to be held next year at Pittsburgh and to give the address the following year in Boston.

## PRODUCTIVE SCIENTIFIC SCHOLARSHIP[1]

I WARMLY sympathize with the ambition expressed in your annual report to have this musem more than a mere zoologic or scientific museum. It should be a museum of arts and letters as well as a museum of natural history. The ethnology and archeology of the Indians of New York make up a subject peculiarly apparent for treatment in a museum of this character. There should be here a representation of all our colonial and revolutionary life. There should be in this museum, for the instruction and inspiration of our people, a full representation of American history since the time when New York cast off its provincial character and became an integral portion of the American republic. Finally there should be here all the representation possible of the great arts and great literatures of the nations of the past, and the nations of the present; so that, enriched by the knowledge of what has been done elsewhere, in time and in space, our own people shall be better equipped to work in the fields of original productive scholarship.

All this lies in the future. At present we have only to do with biology.

A museum of this character has more than one function to fulfil. It must pre-

[1] Address delivered at the opening of the New York State Museum in the State Education Building, Albany, N. Y., on the evening of December 29, 1916.