SPECIAL AMERICAN ASSOCIATION ISSUE CONTAINING THE REPORTS OF THE FIFTH WASHINGTON MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. EDITED BY BURTON E. LIVINGSTON, PERMANENT SECRETARY

SCIENCE

VOL. LXI FEBRUARY 6, 1925 No. 1571

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SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

Lancaster, Pa. Garrison, N. Y.

New York City: Grand Central Terminal.

Annual Subscription, $6.00. Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE PERMANENT SECRETARY'S REPORT ON THE FIFTH WASHINGTON MEETING

GENERAL FEATURES

The fifth Washington meeting of the American Association for the Advancement of Science closed on Saturday, January 3rd. This was the seventy-ninth meeting of the association and the annual meeting for the association year 1924–25. Meeting with the association at Washington were 35 associated societies, of which number 24 are officially affiliated, and also 11 other societies that met with the association by invitation. All the fifteen sections of the association itself were well represented in the programs.

The meeting was by far the largest in the history of the association and it excelled in many other ways. It is probably safe to assert that it was the largest gathering of all kinds of scientists in the history of the whole world. The total registration was 4,206. The largest registration record for earlier meetings was 2,413 (the last quadrennial meeting, at Chicago, 1920–21), and the registration for the meeting just ended was consequently 74 per cent. larger than the previous maximum record. The registration record for the fifth Washington meeting is probably not nearly complete, nor is it presumably as complete as are the records for the preceding meetings mentioned above. It is safe to estimate that the actual attendance was over 4,700. The Washington registration is shown in column 3 of Table 2.

A full week was fortunately available for this meeting. The first session of the executive committee of the association council and the secretaries' conference were held on Sunday, December 28th, a large number of societies held regular sessions on the following Monday and numerous sessions occurred every day throughout the week, the meeting not really closing till Saturday afternoon. Altogether, there were 252 sessions for the reading of papers and addresses. These sessions were distributed in the week as shown in second line of Table 1, which also presents a variety of comparative data on the fourth Washington meeting (December, 1911) and on the last five annual meetings. The first column gives the registration figures, the second the total membership at the close of each meeting, the third the total number of sessions in each meeting and the fourth the total number of

TABLE 1

Meeting	Registration	Membership on Dec. 31	No. of Sessions	No. of Papers	Sessions each day
Fourth Washington (Dec., 1911)	1,306	8,041	163	979	
Fifth Washington (Dec., 1924)	4,206	13,695	252	1,781	Mon. Tu. Wed. Th. Fri. Sat. 49 71 69 42 16 5
Third Cincinnati (Dec., 1923)	2,211	12,015	190	1,140	Wed. Th. Fri. Sat. Sun. Mon. Tu. Wed. 2 29 62 56 4 22 11 4
Fourth Boston (Dec., 1922)	2,339	11,537	159	1,019	Tu. Wed. Th. Fri. Sat. 2 45 54 52 6
Second Toronto (Dec., 1921)	1,832	11,414	123	——	Tu. Wed. Th. Fri. Sat. 13 34 44 30 2
Third Chicago (Dec., 1920)	2,413		184	——	Mon. Tu. Wed. Th. Fri. Sat. 9 53 59 53 8 2

papers read in each case. The distribution of sessions throughout the period of each of the last five meetings, shown at the right of the tabulation, is set forth here largely as a matter of record. They have been brought together by Dr. Francis D. Murnaghan, assistant secretary.

Perhaps the number of scientific papers presented at the Washington convention may be a better index of its magnitude and importance than is the number of persons in attendance. There were approximately 1,781 papers and addresses given. The residential distribution of the authors of these is of considerable interest and it is shown in Table 2, along with some other interesting numerical data, which have been supplied by Dr. Murnaghan. It is interesting to note that the registration in the District of Columbia was markedly larger than the membership and that the number of papers presented from the district was 36 per cent. of the membership and 33 per cent. of the registration. Other suggestive or significant points may be noted, but they can not be considered here.

Most of the sessions were held either in the George Washington University or in the Central High School Building, though a goodly number were held elsewhere. The biological groups were all cared for in the Central High School Building.

The hotel accommodations at Washington are excellent and were easily adequate for this enormous gathering. The hotel headquarters of the American Association were in the New Willard Hotel, which placed a number of complimentary rooms at the disposal of the association. The registration and publicity offices, respectively in charge of Mr. Sam Woodley, executive assistant, and Mr. Austin H. Clark, chairman of the subcommittee on publicity, were in that hotel. To the management of the New Willard Hotel the association is very grateful indeed. The various societies had their headquarters at different hotels, mostly not far from the New Willard.

The lanterns used at the sessions were supplied gratis, mainly by the Bausch and Lomb Optical Company, who thus loaned twenty-five of their balopticons. The Trans-lux Daylight Picture Screen Company loaned 18 of their excellent daylight screens. The Spencer Lens Company and the Scientific Cinema and Supply Company also loaned projection apparatus and screens. The Bausch and Lomb Optical Company also furnished gratis twenty-five microscopes for demonstrations. To these firms the association is deeply and appreciatively grateful. This was the first association meeting at which daylight screens were generally used in the session rooms and they proved wonderfully satisfactory.

The arrangements for the fifth Washington meeting were made by the local committee and the local representatives for the sections, to each member of which the association and the societies owe a debt of gratitude. The preliminary preparations, which are always difficult enough, were doubly so this year, because of the lack in Washington of any group of buildings suitable for housing such a meeting. Those

in attendance spoke very highly of the efficiency with which the difficult task had been accomplished. The membership of the local committees and the local section representatives are shown below.

The Local Committee for the Meeting

William Mather Lewis, *chairman*, president of the George Washington University.

C. G. Abbot, assistant secretary of the Smithsonian Institution.

Gilbert H. Grosvenor, president of the National Geographic Society.

Vernon Kellogg, permanent secretary of the National Research Council.

John C. Merriam, president of the Carnegie Institution of Washington.

TABLE 2

State	Total Membership	Registration		Papers presented		
		Actual	Percentage of Membership	Actual	Percentage of Membership	Percentage of Registration
Alabama	58	10	17	2	3.5	20.0
Alaska	4	0	0	0	0.0	—
Arizona	78	10	13	4	5.1	40.0
Arkansas	41	12	29	5	6.2	41.7
California	1,036	54	5	56	5.4	103.7
Colorado	136	11	8	8	5.9	72.7
Connecticut	283	115	40	50	21.2	43.5
Delaware	44	24	54	1	2.3	4.2
District of Columbia	666	740	111	242	36.3	32.7
Florida	65	16	25	3	4.6	18.8
Georgia	96	23	23	5	5.2	21.7
Idaho	32	2	1	1	3.1	50.0
Illinois	919	178	19	95	10.3	53.4
Indiana	212	54	25	19	9.0	35.2
Iowa	263	47	18	23	8.8	48.9
Kansas	146	41	28	45	30.8	109.8
Kentucky	110	25	23	6	5.5	24.0
Louisiana	111	20	18	8	7.2	40.0
Maine	71	29	41	15	21.1	51.7
Maryland	343	238	69	79	23.0	33.2
Massachusetts	896	276	31	135	15.1	48.9
Michigan	379	136	36	63	16.6	46.3
Minnesota	260	64	25	48	18.5	71.2
Mississippi	30	8	27	4	13.3	50.0
Missouri	288	52	18	37	12.9	71.2
Montana	45	3	7	7	16.0	233.3
Nebraska	126	17	13	18	14.3	105.9
Nevada	25	1	4	0	0.0	0.0
New Hampshire	66	29	44	17	25.8	58.6
New Jersey	419	135	32	48	11.5	35.6
New Mexico	24	0	0	0	0.0	—
New York	2,365	684	29	243	10.2	35.5
North Carolina	120	58	48	15	12.5	25.9
North Dakota	35	6	17	6	17.1	100.0
Ohio	700	194	28	82	11.7	42.3
Oklahoma	89	11	12	5	5.6	45.5
Oregon	96	5	5	4	4.2	80.0
Pennsylvania	976	371	38	92	9.4	24.8
Rhode Island	83	32	39	8	9.6	25.0
South Carolina	53	17	32	2	3.8	11.8
South Dakota	40	5	12	1	2.5	20.0
Tennessee	67	33	49	8	11.9	24.2
Texas	227	18	8	23	10.1	127.8
Utah	66	6	9	3	4.5	50.0
Vermont	49	13	27	4	8.1	30.8
Virginia	169	121	71	32	18.9	26.4
Washington	138	7	5	5	3.6	71.4
West Virginia	81	48	59	10	12.4	20.8
Wisconsin	277	78	28	63	22.7	80.8
Wyoming	23	4	17	3	13.0	75.0
Canada	327	84	25	41	12.5	48.8
Porto Rico	24	2	8	4	16.7	200.0
Other countries	292	33	11	12	4.1	36.4
Total	13,509	4,200	31	—	—	

David White, home secretary of the National Academy of Sciences, and senior geologist, Geological Survey, U. S. Department of the Interior.

The Committee on Special Arrangements

Walter M. Gilbert, *chairman,* Carnegie Institution of Washington.

Albert L. Barrows, National Research Council.

Paul Brockett, National Academy of Sciences.

Austin H. Clark, U. S. National Museum.

Hugh Miller, George Washington University.

W. J. Showalter, National Geographic Society.

Henry F. Haasé, *committee secretary,* Carnegie Institution of Washington.

The Subcommittees

Finances: Walter M. Gilbert, *chairman;* John L. Wirt, E. A. Varela (all of the Carnegie Institution of Washington).

Meeting Places: Hugh Miller, *chairman;* Arthur F. Johnson (George Washington University); W. E. Tisdale (National Research Council).

Hotels: Albert L. Barrows, *chairman;* Effie A. Reed, W. L. Schmidt (all of the National Research Council).

Transportation: Paul Brockett, *chairman* (National Academy of Sciences).

Exhibition: W. J. Showalter, *chairman;* W. D. Bondwell, Arthur H. Bumstead, George Diffenderfer, Jr. (all of the National Geographic Society).

Publicity: Austin H. Clark, *chairman;* W. N. Mann, W. P. True (all of the Smithsonian Institution).

The Local Representatives for Sections

Section A (*Mathematics*), Howard L. Hodgkins (George Washington University); *Section B.* (*Physics*), Lyman J. Briggs (U. S. Bureau of Standards); *Section C* (*Chemistry*), R. S. McBride (Chemical Engineer, Colorado Building); *Section D* (*Astronomy*), W. S. Eichelberger (U. S. Naval Observatory); *Section E* (*Geology and Geography*), W. C. Mendenhall (U. S. Geological Survey); *Section F* (*Zoological Sciences*), Paul Bartsch (U. S. National Museum); *Section G* (*Botanical Sciences*), R. F. Griggs (George Washington University); *Section H* (*Anthropology*), J. Walter Fewkes (Smithsonian Institution); *Section I* (*Psychology*), William C. Ruediger (George Washington University); *Section K* (*Social and Economic Sciences*), Frederick L. Hoffman (Babson Institute, Wellesley Hills, Mass.); *Section L* (*Historical and Philological Sciences*), Frederick E. Brasch (Smithsonian Division, Library of Congress); *Section M* (*Engineering*), William Bowie (U. S. Coast and Geodetic Survey); *Section N* (*Medical Sciences*), M. X. Sullivan and Carl Voegtlin (Hygienic Laboratory); *Section O* (*Agriculture*), Karl F. Kellerman (Bureau of Plant Industry); *Section Q* (*Education*), C. R. Mann (American Council of Education).

The preliminary announcement of the Washington meeting was somewhat larger than ever before, containing 90 pages. It was sent to all members of the association December 1. The General Program, a book of 247 pages, including a summary of events by days, was printed, as has to be done, within the last ten days before the opening of the meeting. It was ably edited by Dr. Sam F. Trelease, secretary of the council, who was assisted by Mrs. Trelease. This very difficult job of printing was efficiently carried out by the Williams and Wilkins Co., of Baltimore. To the society and section secretaries the permanent secretary wishes to express his thanks, for their fine spirit of cooperation in furnishing the program manuscripts in time to be printed. Programs of all the organizations taking part in the Washington convention were included in the General Program; none had to be omitted because received too late.

Two program supplements were printed and made available on Tuesday and Wednesday mornings, respectively. Supplement No. 1 consisted mainly of a very useful catalog of the exhibitions, which was very kindly prepared by Dr. Earl S. Johnston, of the University of Maryland.

Probably the most disappointing feature of this meeting was the fact that not nearly enough programs had been printed, as became evident Monday. The supply was exhausted early Tuesday forenoon and those who registered on Tuesday or later in the week could not be supplied. To care, in a measure, for this unforeseen difficulty, the summary of events was reprinted Tuesday night and given out as Supplement No. 2.

THE SECOND ANNUAL PRIZE OF ONE THOUSAND DOLLARS

The same member who made it possible for the American Association to award the prize at Cincinnati has given the sum of five thousand dollars to be devoted to five annual thousand-dollar prizes, one to be awarded at each of the five annual meetings beginning with the meeting just closed. The donor wishes his name withheld. According to the terms of the gift and the rules adopted by the association council, the prize is to be awarded to some person presenting at the annual meeting a notable contribution to the advancement of science. All papers presented on the programs of the Washington meeting were eligible for consideration, whether or not their authors were members of the association. The secretary of each section and society that met at Washington was asked to consult others and submit titles of papers presented in the sessions of his organization, for consideration in the making of the award. These nominations are being thoroughly investigated by the special Committee on Prize Award and the name of the winner will be announced in due time.

THE WASHINGTON FUND

To care for the extra expenses of the fifth Washington meeting, a Washington Fund was established.

This was partly made up by collecting a fee of fifty cents from each person who had a railway certificate to be endorsed and validated, about $1,200 being collected in that way. Also, requests were sent early in the fall to all association members resident in or near Washington, asking that they make contributions to the Washington Fund. Two renewals of this request were sent out later. About 700 local members were thus asked to make contributions and about 450 responded to one or another of the requests. Altogether about $2,700 was given by the local members. In addition, nearly $300 was contributed by Washington societies and friends of the association. The total amount received for the Washington Fund was $4,140.90, which sufficed to cover perhaps two thirds of the extra expense connected with the meeting. The balance was covered by disbursements from the current funds in the permanent secretary's hands, derived from membership dues and the entrance fees of new members.

The fifth Washington meeting was naturally the most expensive meeting the association has ever held, and the portion of its cost paid from the current funds was larger than ever before. The association is to be congratulated on the fine and helpful spirit evidenced by so many of the local members in this connection, and the permanent secretary wishes here to express the cordial and appreciative thanks of the organization to all who made donations to the Washington Fund, including friends of the association and the Washington societies that made appropriations for the fund. Those who attended the meeting from away are also to be heartily thanked for the fine spirit with which the payment of the fifty-cent validation fee was received. Only two or three out of several thousand who had railway certificates validated expressed any disapproval of the validation fee.

THE EXHIBITION AT WASHINGTON

The Washington exhibition of research apparatus, scientific books and laboratory supplies was the most extensive ever held by the American Association, and the most successful. The preliminary work of arranging for exhibits was very ably carried out by Dr. Charles A. Shull, of the University of Chicago, manager of the exhibition, who began by sending out several hundred letters of invitation to as many firms, asking them to enter exhibits. Dr. Shull carried on for weeks prior to the meeting a voluminous correspondence in this connection. As soon as general arrangements for each exhibit had been completed, data thereon were sent to the local subcommittee on exhibits, who took full charge of the local arrangements. This subcommittee consisted of W. J. Showalter (*chairman*), W. D. Bondwell, Albert H. Bumstead and George M. Diffenderfer, Jr., all of the National Geographic Society. The actual work of installing the numerous exhibits had almost entirely to be accomplished in two or three days, for the exhibition rooms did not become available till the Saturday preceding the meeting. The general exhibition opened on Tuesday afternoon and a supply of the catalog of the exhibitions was available at that time and throughout the rest of the week.

Exhibits by firms and some of the prominent society exhibits were housed in the gymnasium of the George Washington University, where there were also a few exhibits by individuals and some very striking ones from branches of the government service. The exhibits of individual scientists and some of the society exhibits were in other places, near the meeting places of the various societies. The biological groups were housed in the Central High School Building. This unavoidable scattering of exhibits was necessitated by the lack of any single group of buildings in Washington adequate for arranging the meetings all in one place. The subcommittee on exhibits is to be greatly complimented on securing an excellent and generally satisfactory arrangement under very difficult circumstances. The exhibiting firms contributed almost the whole of the expense connected with the general exhibition. A few of the exhibitors found the separation of the general exhibition hall from the meeting places of great disadvantage, but most of them were pleased, even in spite of the isolation of the general exhibition.

The following statements are excerpts from a report prepared by Mr. Showalter, chairman of the Subcommittee on Exhibits.

In spite of the bad weather, with the attendant snow, and further in spite of the two miles that separated the general exhibition from the meeting places of all the biological, and some of the other societies, we had excellent attendance. On Tuesday afternoon and evening there were about a thousand visitors. On Wednesday the attendance was even larger. On Thursday, New Year's Day, it was about 500, and on Friday as many more. Most of the visitors were local and visiting scientists. A single organization, the E. Leitz Company, set up a $30,000 exhibit. The Bausch and Lomb Optical Company's exhibit, and those of the Eastman Kodak Company, James G. Biddle, the Cambridge Instrument Company, the Spencer Lens Company, the Leeds and Northrup Company and the General Biological Supply House were also specially notable. It is estimated that the total value of the materials exhibited ran well beyond $100,000. How successful the exhibition was from the standpoint of the average exhibitor may be gathered from the fact that one man exhibiting a little scientific novelty booked more than 500 orders during his stay. With some 12,000 square feet of space asked for, there was less than 7,000 square feet to assign, and yet every exhibitor was pleased with his

allotment, his location and the plans for routing the visitors through the exhibition hall. One of the interesting sidelights on the exhibition was the interest the visitors took in the book exhibits. I found that these exhibits were a constant source of interest.

The catalog of the exhibitions was prepared by Dr. Earl S. Johnston, of the University of Maryland, who thus gave a very valuable service to the association and the assembled scientists. The catalog was published as a supplement to the general program, being printed Monday night. Dr. Sam F. Trelease and Mrs. Trelease edited the manuscript and cared for the proofreading, which had to be done in the small hours of Tuesday morning.

Besides the general exhibition and the society exhibitions, there were a number of important exhibitions in the laboratories and offices of the various branches of the government service, and the elaborate exhibition of recent researches by the Carnegie Institution of Washington, installed in the Administration Building of the institution, was a very important feature of this aspect of the Washington meeting.

A fuller account of the Washington Exhibitions, prepared by Dr. Charles A. Shull, appears on page 159 of this issue of SCIENCE.

SOCIAL AND ENTERTAINMENT FEATURES AT WASHINGTON

(Report by Francis D. Murnaghan)

On Wednesday, December 31st, at 12:30 o'clock, President Coolidge received members and guests of the association at the East Entrance of the White House and gave a short address of welcome, in which he spoke highly of the scientific progress at present being achieved in the United States. President Coolidge's address appears in full on page 23 of the issue of SCIENCE for January 9. About fifteen hundred persons attended this reception and two panoramic photographs were taken of the group. One of these shows President Coolidge in front of the group and the other is a side view showing the President delivering his address from the steps of the White House. Copies of the photographs may be obtained from F. A. Schutz, Photographer, 1405 F St., N. W., Washington, D. C., the prices being $2.00 and $1.50, respectively.

On Monday evening, December 29th, the annual reception of the association, given by the local members, was held in the New National Museum immediately after the opening session. Over fifteen hundred members and guests attended this reception. The United States Marine Band furnished inspiring music, refreshments were served and the entire museum was open. In the same building and at the same time was held the annual biological smoker under the joint auspices of the association and the Union of American Biological Societies.

On Tuesday evening, December 30th, at 9 o'clock, a very enjoyable reception and dance was given by the Columbian Women of George Washington University to President and Mrs. Lewis of the university and to the visiting scientists and their guests. The reception was held at the Washington Club and was well attended.

A concert and dance was given by the Cornell Musical Clubs at the New Willard Hotel on the evening of January 1st at 8:30. All those in attendance at the meeting of the association were cordially invited to attend.

The National Geographic Society entertained about two hundred geographers, geologists and teachers of geography at the Hubbard Memorial Building, the headquarters of the society. A very enjoyable luncheon was provided on Monday, Tuesday, Wednesday and Thursday and the hospitality of the society was much appreciated.

On the afternoon of Monday, December 29th, the College Women's Club was at home to women attending the meeting. Dr. Emmeline Moore gave a most interesting talk on her experiences in South Africa as an exchange professor from Cornell University. Dr. Moore, whose specialty is fish culture, is a member of the State Conservation Committee, of Albany, N. Y.

To those in attendance at the meeting was extended the hospitality of the American Association of University Women through its national headquarters and club at 1634 I St., N. W. Many of the women visitors enjoyed the use of the public rooms of the club and enjoyed many courtesies from the national officers of the association. The club held a reception on the afternoon of New Year's day and this was well attended by the visiting women of science.

On Tuesday evening, December 30th, the Washington section of the Society of American Foresters entertained informally at the Cosmos Club at 8:30 o'clock.

LUNCHEONS AND DINNERS

The various luncheons and dinners of the meeting were generally very well attended and were unusually successful. A list of these follows.

Monday noon, December 29:

Luncheon of the Phi Sigma Biological Research Society.

Monday evening, December 29:

Dinner of the Pi Mu Epsilon Mathematical Fraternity.

Dinner of the American Physical Society.

Dinner of the National Council of Geography Teachers.

Dinner session of the American Society of Zoologists.

Tuesday evening, December 30:

Dinner for geologists and geographers.

Dinner for all botanists.

Dinner of the American Psychological Association.

Dinner of the Metric Association.

Dinner of the Society of American Bacteriologists.

Dinner of the American Physiological Society.

Sigma Xi dinner.

Wednesday morning, December 31:

Luncheon of the American Astronomical Society.

Breakfast of the Sigma Delta Epsilon Graduate Women's Scientific Fraternity.

Wednesday evening, December 31:

Dinner for all zoologists.

Dinner for all physiologists.

Dinner for Section O (Agriculture).

Dinner of the Crop Protection Institute.

Dinner of Section Q (Education) and the Phi Delta Kappa Fraternity.

Thursday noon, January 1:

Luncheon of the Ecological Society of America.

Thursday evening, January 1:

Dinner for all mathematicians.

Dinner of the American Astronomical Society.

Dinner of the American Phytopathological Society.

Dinner of the American Society of Naturalists.

Dinner of the Association of Official Seed Analysts.

Dinner of the Gamma Alpha Graduate Scientific Fraternity.

Friday noon, January 2:

Luncheon for all philologists.

Friday evening, January 2:

Entomologists' dinner.

Anthropologists' dinner.

ARRANGEMENTS FOR NEWSPAPER PUBLICITY AT THE WASHINGTON MEETING

A special effort was made this year to provide improved facilities by which the scientific material presented at the sessions might be made readily available to the representatives of the daily press. One of the prime aims of the association is to aid in the popularization and humanization of science, and the newspapers have become exceedingly helpful in this direction. The Washington meeting was given a large and a very widespread publicity of a very satisfactory character.

The press representatives are nowadays very glad to make good use of any scientific material that can be made understandable to the non-technical mind and there is a growing willingness on the part of our scientific workers to meet these representatives at least half way. In the long run, and especially from now on, the main burden of bringing science to the people at large rests on the shoulders of the scientists themselves. Some of the manuscripts sent in for this purpose were adversely criticized because they dwelt too exclusively on minor details of research results or because they presented merely topics that would be considered in the papers, without giving information as to what would be said on these topics. Scientific workers need to be reminded that the intelligent public, which is to be addressed in our efforts at publicity, are naturally lacking in background of scientific knowledge. Each presentation needs to begin with elementary considerations and such considerations are necessarily as far as it is possible to go in many instances.

The publicity arrangements at the meeting were in charge of the local subcommittee on publicity, which included Austin H. Clark as chairman, William M. Mann and Webster P. True. They served the association and the public very well indeed. As the manuscripts for the program came in at the Washington office, the permanent secretary sent a request to each person who was to give a paper, asking him to send an abstract and, if possible, a complete copy of his paper to the chairman of the subcommittee, and a duplicate of each to Science Service. About 1,200 abstracts, many accompanied by complete copies of the papers to be read, were received, the first coming in early in December. By the middle of the month so much material was coming in that from that time until the end of the meeting the chairman of the subcommittee had to devote all his time to the work of preparing it for presentation to the representatives of the press.

As soon as the abstracts began to arrive in large numbers contacts were established with the local newspapers and the press agencies, and their representatives were allowed to examine the material as it came in, so that they might form in advance definite ideas of what was to take place at the meeting. All the material was made available to Science Service and to the press representatives, and the responsibility of passing over such papers as contained matter that might possibly prejudice the public against science in any way was placed upon the shoulders of the latter. Those who have had the privilege of association with the Washington newspaper fraternity well understand that in covering a meeting of this character these men would keep constantly in mind the high mission of science and the prestige of the association, releasing for publication only material dignified in tone and devoid of purely sensational appeal.

It had been intended to prepare mimeographed press releases of many of the papers not accompanied by abstracts; but so much material came in that this was not practicable. It would have occupied the full time of several expert writers for several weeks. About seventy-five of the abstracts and a few of the complete addresses were mimeographed, and the remainder were classified according to the date upon which they were to be delivered and were then made available for examination by the representatives of the press. Most of this material had already been gone over and studied by them before the meetings began. This enabled them to spend the week of the meeting in securing interviews and in attending sessions which promised something of special interest.

Science Service cooperated cordially with the subcommittee on publicity, as in previous years. The material came in so well that Science Service was able to issue more complete and more timely reports than at any earlier meeting. In the *Daily Science News Bulletin,* sent to about 60 newspapers in all parts of the country and reaching some three million readers daily, there were 131 advance news stories about the meeting, of about 40,000 words in all. Many manuscripts received too late for use in that way are being used as the basis for later articles. Heretofore Science Service has never had more than two wire services for the association meeting, but this year five wire services were used. The daily wire stories were used more consistently and in better positions than ever before. The staff of Science Service covering the meeting numbered seven.

The publicity given to the Washington meeting by the newspapers, both of Washington and throughout the country, was very great and of a very high type. The association is very grateful to Mr. Clark and the other members of the publicity committee for their very great service in this connection. It is also very grateful to the staff of Science Service and the newspaper men for their very efficient and cordial help in this prime educational work.

ARRANGEMENTS FOR RADIO PUBLICITY AT WASHINGTON

A new departure was this year made in the publicity service of the association. Those who attended the last Chicago meeting, in December, 1920, will remember that an important feature of that meeting was an exhibit of apparatus showing the principles and operation of radio-telephony, the exhibit having been installed in the Chicago Art Institute for the period of the meeting, through the helpful cooperation of the National Research Council, the American Telephone and Telegraph Company, and the Western Electric Company. During the four years that have elapsed since the Chicago meeting, the science and art of radio broadcasting and receiving have grown by leaps and bounds, as every one knows, and the radio now furnishes a very feasible and satisfactory way for bringing information to a vast number of people not otherwise easily reached. It was very fitting that the systematic use of radio broadcasting should be first introduced as an integral part of the publicity work of the association at the Fifth Washington Meeting, the next quadrennial meeting to follow the Chicago meeting of 1920–21.

In June the Smithsonian Institution, which had been presenting a weekly program of scientific talks through the Radio Corporation of America, Station WRC, discussed with that station the practicability of giving a talk on each day the station was in operation during the Washington meeting. The Radio Corporation not only agreed to this but further suggested that, when practicable, these talks be broadcasted simultaneously from its Washington station and from its station in New York. Four talks in all were broadcasted by the Radio Corporation, three under the joint auspices of the American Association and the Smithsonian Institution and one under the special auspices of the Metric Association.

Through the fine cooperation of Dr. W. E. Tisdale, representing the National Research Council and Science Service, the Chesapeake and Potomac Telephone Company also agreed to broadcast from its Washington station a scientific talk on each of the evenings when that station was in operation, during the week of the meeting.

There were in all seven scientific talks sent out from the meeting by radio. These represented very well the broad field of science and, given by prominent scientists, they attracted much attention. Many gratifying responses of approval, by means of long-distance telephone and by mail, were received by the stations and speakers and these radio talks also aided distant newspaper publicity regarding the meeting.

The radio talks broadcasted from the Fifth Washington Meeting are listed below.

Monday evening, December 29, Station WCAP (Washington). Subject, "Scientific discoveries," by Dr. Ernest Merritt, Cornell University.

Tuesday evening, December 30, Stations WRC (Washington) and WJY (New York). Subject, "How trees grow," by Dr. D. T. MacDougal, Desert Laboratory of the Carnegie Institution of Washington.

Tuesday evening, December 30, Station WRC (Washington). Subject, "Metric weights and measures," by Dr. A. E. Kennelly, Massachusetts Institute of Technology and Harvard University.

Wednesday evening, December 31, Station WRC (Washington). Subject, "Why the earth is a magnet," by Professor W. F. G. Swann, Yale University.

Thursday evening, January 1, Station WCAP (Wash-

ington). Subject, "Is the universe finite," by Dr. Archibald Henderson, University of North Carolina.

Friday evening, January 2, Station WCAP (Washington). Subject, "The evolution of the stars," by Dr. Henry N. Russell, Princeton University.

Saturday evening, January 3, Stations WRC (Washington) and WJZ (New York). Subject, "Tree rings and climate," by Dr. A. E. Douglass, University of Arizona.

For the great and far-reaching success of the Washington radio program the association owes a debt of gratitude to Mr. Clark and Dr. Tisdale, to the Smithsonian Institution, the National Research Council, Science Service and the Metric Association, and to the National Radio Corporation and the Chesapeake and Potomic Telephone Company.

It is hoped that radio talks on scientific subjects may be arranged for future meetings of the association and that this feature of its work, introduced this year at Washington, may become increasingly important and influential.

THE WASHINGTON GENERAL SESSIONS

There were eight general sessions of the association at Washington. The meeting was formally opened on the evening of Monday, December 29th, in Memorial Continental Hall. The president of the association, Dr. J. McKeen Cattell, presided at the opening session and introduced President W. M. Lewis, of George Washington University, and Charles Evans Hughes, Secretary of State. President Lewis, on behalf of the Washington scientific institutions, extended a cordial welcome to the association and Secretary Hughes spoke on "Some aspects of international cooperation." This address appeared in SCIENCE for January 9. President Cattell then introduced Dr. Charles D. Walcott, the retiring president of the association, who chose as the subject of his address "Science and service." Dr. Walcott's address has already appeared in full in the issue of SCIENCE for January 2, 1925. The opening session was very well attended, with about 1,850 members and guests of the association present.

The second general session of the meeting was held in the auditorium of the New National Museum on the afternoon of Tuesday, December 30th. At this session Mr. Austin H. Clark, of the Smithsonian Institution, spoke on the Navy's oceanographic program. Mr. Clark described the work done by the United States Navy in investigating tides and currents, erosion of shore lines and the relationships between the plants and animals of the sea, ever since the first American achievement in oceanographic research, a chart by Benjamin Franklin, published in 1770, which showed the course of the Gulf Stream. The recent development of H. C. Hayes's ingenious sounding device, by which the depth of water underneath a ship is found by means of a sound wave echoed from the ocean bottom, has greatly facilitated oceanographic research. A general conference on oceanography was held in the Navy Department on July 1st, 1924, and a comprehensive program of research was unanimously adopted. Results of much practical and scientific value are confidently expected. An audience of over 300 showed great interest in Mr. Clark's address, which was finely illustrated.

The third general session at Washington was held in Memorial Continental Hall on the evening of Tuesday, December 30th. This session was under the joint auspices of the Society of Sigma Xi and the American Association. The address of the evening was the third annual Sigma Xi lecture, given by Dr. F. F. Russell, general director of the International Health Board, whose subject was "War on diseases, with special reference to malaria and yellow fever." Dr. Russell described the successful work of the International Health Board Commission in practically driving yellow fever out of existence. He explained how the source of the infection was discovered and how the disease itself soon disappeared, once the source was removed. A description was given of the war now being waged, along similar lines, against malaria. The third general session was attended by over 350 persons.

The fourth general session of the meeting was held in the auditorium of the New National Museum on the afternoon of Wednesday, December 31st. Dr. Charles D. Walcott, retiring president of the association, gave a lecture on "Geological explorations in the Canadian Rockies," beautifully illustrated by ninety colored lantern slides. This session proved very popular and the large auditorium was filled to overflowing. Dr. Walcott told of the formation, millions of years ago, of the great Cordilleran Trough extending, with a breadth of from 100 to 200 miles, from the Arctic Ocean to Southern California. In this trough the animal life of both the Arctic and Pacific oceans mingled and as ages passed there was a deposit of sediment which in the deeper sections of the trough reached a thickness of over 18 miles. In later ages the sandstones, shales and limestone formations of the Cordilleran Trough were folded, broken and often pushed up into mountain ridges in which may be studied the records of the development of the plant and animal life from the tree ferns to the great sequoias and from the cold-blooded fishes and reptiles to the warm-blooded mammals and finally man.

The fifth general session of the meeting was held in the auditorium of the New National Museum on the evening of Wednesday, December 31st. Dr. Ed-

win E. Slosson, director of Science Service, described the meeting of the British Association for the Advancement of Science that took place in Toronto last August and gave a very enjoyable running comment on a series of motion pictures taken on the western trip that immediately followed that meeting. Despite the unfavorable weather an audience of about 550 heartily enjoyed this session. Dr. Slosson commented on the differences between the meetings of the British Association and those of the American Association, one of the most striking of which is the smaller number of scientific sessions and papers and the greater number of popular and instructive yet entertaining sessions at the meetings of the British organization. Another point brought out was the keen desire of the local community to have the British Association meet with them as evidenced by the generous provisions made by the government and city, as well as by private contributions, towards the expenses of the meeting.

At the sixth general session, held in the New National Museum on Thursday afternoon, Professor A. E. Douglass, director of the Observatory of the University of Arizona, gave an interesting and inspiring account of the "University of Arizona eclipse expedition of September, 1923." He showed a number of striking lantern slides made from photographs. The interest of the large audience was divided between the difficult arrangements that were made for precise scientific work in the desert and the astronomical results themselves.

The seventh general session was held in the New National Museum on the evening of Thursday, January 1st, with Dr. Willis T. Lee, of the U. S. Geological Survey, as the speaker. Dr. Lee showed a series of truly wonderful photographs and motion pictures from the Carlsbad Caverns of New Mexico. Dr. Gilbert H. Grosvenor, president of the National Geographic Society, under the auspices of which this first exploration of these great caverns was carried out, introduced the speaker. These are the largest and most interesting and instructive caves thus far known anywhere in the world.

The eighth general session was also held in the New National Museum, on the afternoon of Friday, January 2nd. The speaker was Dr. John Mills, of the Western Electric Company, who showed several reels of motion pictures specially prepared to illustrate the principles and operation of the telephone, human speech and audition. On account of the snow, this lecture was attended by only a small audience, but those who were present were amply repaid for their trouble and were very grateful to Dr. Mills for his clear and interesting explanations of these common but not generally understood phenomena.

THE COMMITTEE ON THE STATE OF THE SCIENCES IN EDUCATION

The American Association has undertaken a thorough study of the rôle played and to be played by the sciences in education in general, this project having been authorized at the last annual meeting, at Cincinnati. A special committee on this very important work has been organized with Dr. Otis W. Caldwell, of Columbia University, as chairman and with about twenty members. Financial support for the work has been given to the association by the Commonwealth Fund, of New York City. The proposed plans have been discussed in a preliminary way in SCIENCE for December 12, 1924.

A meeting of the committee was held in Washington on January 1st, taking advantage of the great gathering of men of science. The committee chairman had presented the project in an address given at the Phi Delta Kappa Educational Fraternity's dinner on Wednesday evening, December 31st. Dr. Caldwell reports that the plans, as thus far worked out, include the following lines of activity: (1) The committee is to collect data on science instruction in all grades of educational institutions, numerous workers being asked to cooperate in this large task. (2) The committee is to secure as truthful and representative a summary as is possible of present thought on the nature and functions of the sciences in educational programs and on the philosophy of science in education. (3) The committee is to make suggestions and render assistance whenever possible in the carrying out of specific researches on the use of the sciences in general education. (4) The committee is to cooperate with others interested in having new types of subject-matter tried out in educational institutions, with careful studies of the results. (5) The committee is to aid and encourage the proper public presentation of real science knowledge and its interpretation. (6) The committee adopted a general plan for holding local conferences at education centers, and it invited all who are interested in this whole subject to write to the chairman, making constructive suggestions.

Real progress and tangible results should eventually come from the work of this special committee. It is inevitable that scientific knowledge should play a constantly increasing part in the life of civilized communities and in the social philosophy of individuals, and the time is ripe for a more serious study than has yet been made of the part the sciences should take in general education. The organization of this special committee of the American Association for the Advancement of Science may well mark a very great forward step toward bringing the true aims

of science and its methods of thought into the lives of the people.

THE SECRETARIES' CONFERENCE

(Report by Francis D. Murnaghan)

The members of the executive committee of the association council and the secretaries of the various sections of the association assembled for a conference at the Cosmos Club on Sunday evening, December 28th. They dined together at 6:30 and many aspects of the affairs of the association were informally discussed during and after the dinner. In particular, the question of fellowship was considered in some detail and it is felt that the discussion provoked will be of great help to the section secretaries in passing upon fellowship nominations. These conferences, which have been held at recent annual meetings of the association, are proving to be very helpful and stimulating. With the continual growth of the association's activities close cooperation among the section secretaries and the members of the executive committee is becoming increasingly necessary. Gatherings of this kind help greatly in furthering this kind of cooperation.

GENERAL OFFICERS FOR THE WASHINGTON MEETING

President

J. McKeen Cattell, Garrison-on-Hudson, N. Y.

Retiring President

Charles D. Walcott, Smithsonian Institution, Washington, D. C.

Permanent Secretary

Burton E. Livingston, Johns Hopkins University, Baltimore, Md. (Association mail address: Smithsonian Institution Building, Washington, D. C.)

General Secretary

D. T. MacDougal, Desert Laboratory, Tucson, Arizona.

Treasurer

R. S. Woodward, *deceased.*

Assistant Secretary

Francis D. Murnaghan, Johns Hopkins University, Baltimore, Md.

Assistant Treasurer

John L. Wirt, Carnegie Institution of Washington, Washington, D. C.

Secretary of the Council

Sam F. Trelease, University of Louisville, Louisville, Kentucky.

Executive Assistant

Sam Woodley, Smithsonian Institution Building, Washington, D. C.

Auditor

R. B. Sosman, Geophysical Laboratory, Washington, D. C.

Members of the Executive Committee

(Parenthesis indicates year at end of which member's term expires.)

Simon Flexner (1925), *Chairman;* Rockefeller Institute for Medical Research, New York, N. Y.

J. McKeen Cattell (1924), *President of the Association;* Garrison-on-Hudson, N. Y.

D. T. MacDougal (1924), *General Secretary of the Association;* Desert Laboratory, Tucson, Ariz.

Burton E. Livingston (1924), *Permanent Secretary of the Association;* Johns Hopkins University, Baltimore, Maryland.

H. L. Fairchild (1927); University of Rochester, Rochester, N. Y.

L. O. Howard (1924); Bureau of Entomology, U. S. Department of Agriculture, Washington, D. C.

W. J. Humphreys (1925); U. S. Weather Bureau, Washington, D. C.

G. A. Miller (1924); University of Illinois, Urbana, Ill.

W. A. Noyes (1927); University of Illinois, Urbana, Ill.

Herbert Osborn (1924); Ohio State University, Columbus, Ohio.

Henry B. Ward (1926); University of Illinois, Urbana, Ill.

THE COUNCIL ROLL AT WASHINGTON

The affairs of the association are wholly in the charge of the council, which consists of the president, the vice-presidents, the treasurer, the secretaries, the council representatives of the affiliated societies and academies and eight members elected by the council itself. The list of council members for the seventy-ninth meeting is shown below, arranged alphabetically. Each member's name is followed by an italic phrase, showing his status in the council. Past presidents and the presidents of the divisions and local branch are officially invited to attend council sessions. Members of the executive committee who are not otherwise council members are *ex-officio* members. The attendance at the five Washington sessions is shown by the numerals that precede the members' names, the five numerals corresponding to the five sessions, respectively, on Monday, Tuesday, Wednesday, Thursday and Friday, December 29 to January 2. Thus, the numerals 2 and 3 before a name indicate that the member whose name is so marked was present at the Tuesday and Wednesday sessions but was absent from the other sessions.

Every council member receives an official notice calling his attention to his responsibility, just before each annual meeting, with the urgent request that he attend the council sessions and take part in the direc-