for others the fundamental operation of the roster involves only the use of the cards to a certain point. As soon as the appropriate cards are sorted out the questionnaires from which they were made are once again taken from the files. The agent of the defense agency which has asked for some particular group of individuals is then allowed to go through the basic questionnaires of the individuals who fit his needs.

Actually in completed form each individual is allotted five 80-column punch cards in the catalog. These cards are used to record the basic information of the questionnaire and the special information secured from the technical checklists. The large number of cards is necessary because the individual's special skills are punched not only in the order in which he gives them but also with what the individual characterized as his second skill punched as the first skill, and so on. The last card of the five is used to provide the full name of the individual in alphabetical rather than numerical code, his roster number, and some other identifying characteristics. By the use of this last card it is possible to print automatically a list of names of those selected. For example, if a request comes to the roster for physicists who have specialized in the study of ultra high frequency radio circuits, of a certain age, in a special army corps area, it is possible to set the selecting machine in such a way that a list will be printed of these individuals and of no others.

Those connected with the administration of the roster are increasingly impressed by the fact that the list that is being developed not only is invaluable in the present emergency period, especially in those fields in which real shortages of trained personnel have already developed, but also that it has potentialities for normal periods as well. If Civil Service procedures are a little modified the recruitment of technical personnel for the government might well involve the use of the roster to the real advantage of the government. That is, if mailing lists could be secured of properly trained physicists when an opening occurred in this field at the Bureau of Standards it would be possible by sending out a card of information to tell all individuals in this field in the country that an examination was about to be held. Similarly, after the present emergency is over slight adaptation would be required to make the roster available as an agency to assist in the proper recruitment of college faculties, personnel of industrial research organizations and the like. For these reasons every effort has been made to plan the roster so that it can be kept up to date as a continuing census of America's specialists.

Those concerned in the development of the roster have been strikingly impressed by the patriotism of America's scientists as displayed in the practical work of developing the roster. Busy men engaged in important work have almost without exception been willing to undertake the difficult problem of assisting in the development of the particular segment of the roster related to their own special fields. There is no doubt in the minds of those who have been associated with this project from the first that America's scientists are actively willing to serve the nation. Above all there seems to be little doubt that America's greatest resource in the difficult period that lies ahead is the brain power—if a non-psychological term may be used—of its highly trained scientists and other specialists. It seems impossible to the present writer as he views the growing lists of the roster that the rest of the world together could provide a register of highly trained men comparable to this list of citizens of the United States.

REPORT OF THE PRESIDENT TO COUNCIL OF AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE[1]

By Dr. ALBERT FRANCIS BLAKESLEE

CARNEGIE INSTITUTION OF WASHINGTON, DEPARTMENT OF GENETICS, COLD SPRING HARBOR, N. Y.

TO-DAY is the first opportunity to express my appreciation to the council for their confidence in electing me president of the American Association for the Advancement of Science. I realize that responsibilities go with any office and have tried therefore to do some thinking about the problems of the association. Perhaps the chief value, if any, of this report which I have prepared will lie in its offering a precedent with expectation that some future president will give birth in *his* report to a bright idea, and bright ideas are precious. In considering what might be said concerning the state of the association I began to realize that the American Association for the Advancement of Science occupies a unique position. Organizations with restricted membership like the National Academy of Sciences with its related National Research Council serve a purpose, as do also the various societies devoted to special fields of science. There is no other democratic organization in the world, however, covering the whole field of science which compares with the American Association in the number of scientists which it serves. The present membership is slightly over 21,000. The first table of the Appendix shows the

[1] Philadelphia, December 27, 1940.

distribution of members in the different sections. The percentages may furnish a rough criterion of the relative proportion of potent scientists in the different groups in this country, if we make the natural assumption that potent scientists will in large measure be members of the association.

The 179 affiliated and associated societies have a total membership, including duplicates, of over 900,000. Most of these societies are affiliated with the association and are entitled to elect representatives to the council.

Its democratic organization and wide representation give to the association great and peculiar opportunities, I believe, in the way of synthesis and integration. Its aim should certainly emphasize service to science, broadly considered, not only to its own members and to American science but to science throughout the world. At the present time it has a special obligation to uphold the traditions of freedom of thought and untrammeled search for truth, which in a large part of the world are no longer possible. With the Association for Advancement of Science in Britain, which is so valiantly leading in the present struggle for freedom, our association has established friendly relations and under a reciprocal arrangement the principal executive officers of each association are elected honorary members of the other association. I believe these bonds with the British Association should be strengthened and something more material than an honorary listing of names should be done by our organization. Corresponding and foreign members of many organizations automatically receive their official publications. I believe we should be similarly generous with our publications to our honorary members, the number of which from foreign countries might well be increased. In 1939 there were twenty-nine officers and members of the Council of the British Association listed in our summarized "Proceedings" as honorary members. For 1940 there were also twenty-nine, all but six of whom were duplicates of the 1939 listing. I suggest that SCIENCE, for example, be presented to these honorary members from the British Association during their term of office, as well as to all their past presidents. The expense involved should not be great in comparison with the service rendered. It should be possible to make arrangements with The Science Press to provide these complimentary subscriptions at the cost of running off extra copies after the composition and printing overhead expense had been cared for. Such extra copies could be furnished for not over two dollars each, from estimates of the editor of SCIENCE. If the British Association has the same number of past presidents as does our association (fourteen) the total cost of sending SCIENCE to the principal officers and past presidents of the British Association should not be over $86. Later, if the scheme suggested proved of sufficient service, similar though perhaps less extensive arrangements might be made with science associations in other countries when freedom of intercourse throughout the world has been restored.

The association has done a service in its relations with academies of science, and has cooperated with the work of junior academies and junior science groups. This year the association elected to honorary junior membership for the one year twenty-seven young people nominated by affiliated academies. I suggest the desirability of the association giving each junior honorary member a year's subscription to one of the association's journals, if arrangements can be made with the editor of The Science Press to provide them at the cost of running off extra copies. Such a plan might turn out to be of ultimate financial profit to the association in training up new members, but its primary object should be the advancement of science. The great problem in the advancement of science, I believe, is to catch the exceptional man young and to give him encouragement and exceptional opportunities to exercise his exceptional talents in research, education or administration of science. The relations established between the association and junior academies and science groups is a step in the right direction, but the problem appears to need continuing study on the part of the association.

I have suggested some perhaps minor ways in which the influence and service of the American Association might be increased here and abroad. Its influence depends in large measure upon the size and quality of its membership and upon its financial stability.

The publication problem is a serious one with almost all organizations. It is becoming increasingly so in this country, due to the present world war, and if we become more deeply involved in the conflict the problem may become critical. During the recent depression in this country membership in the association dropped from a peak of, roughly, 20,000 in 1931 to around 18,000 in 1935 and 1936, although it has gradually increased since the latter date. This fact shows that the membership is influenced by the economic conditions of the country. If the membership should be cut in half, or even suffer a greater reduction that might readily be brought about by an unfavorable change in world conditions, the association would be in an extremely unfortunate financial situation. A number of members of the association have called my attention to arrangements which they understood had been made for the ultimate disposition of SCIENCE and *The Scientific Monthly* and have expressed concern as to the effect which these arrangements might have upon the association's finances. I believe I should state the situation from the standpoint of the association as I understand it. The association is under serious obligations for an uncertain future since it

is bound by a contract with the editors of The Science Press to pay them or their estate an annuity upon their death or relinquishment of the journals. The annuity, which is to be continued for a ten-year period, is one half the net average income of the five years preceding such relinquishment. The probable total amount that the association will be obligated to pay during the ten-year period is estimated to be approximately $150,000. The contract has no release clause and the association would have to depend upon its invested capital to pay the annuity if the membership and subscriptions should decrease to a point where they would not suffice to pay the annuity plus the editorial costs of the journals. Tabulations regarding the journals and the annuity contract are given in the adjoining Appendix.

From the vantage point of more than fourscore years Dr. Cattell can look back on a long and fruitful career of activity in scientific management and publication. He has been a member of the executive committee of the association, or its earlier equivalent the committee on policy, for about forty years and has been chairman of the executive committee since the beginning of 1925. He has been owner and editor of SCIENCE for forty-five years. He has thus had much to do in guiding the policies of the association and has controlled the policies of its official journals since before their connection with the association. He has rendered the association a great service, especially in the early stages of the publication of SCIENCE when initiative and even daring made his venture in taking over a financially unprofitable journal successful. As an editor he has been resourceful in securing a high grade of material for the journals and discriminating in accepting the manuscripts which have been submitted. The association will probably find it extremely difficult, if not impossible, to secure in one man and his wife the equal to Dr. and Mrs. Cattell in efficient business management and editorial control of its publications. But this is a problem the association must face when Dr. Cattell feels it necessary to relinquish his control of SCIENCE and *The Scientific Monthly*. Not only must the association secure outstanding editorial ability but it also must determine publication policies.

It is the living active mind of Cattell as editor which has been an asset to the journals, and the association could afford to pay generously for his editorial services, but when these services terminate it is questionable how much will be left in the way of assets which the association does not already possess in its own membership. Since nearly 90 per cent. of the combined circulation of the journals is due to member subscriptions it is a question how much value to the association there will be in the names of the journals and the so-called good-will that goes with them when the present editor can no longer guide them.

I am presenting to the council, by means of tabulations in the Appendix, some facts perhaps not generally known and am presenting a problem, for which I admit I do not have the answer. I am suggesting that it would be appropriate to have a resolution from the council for the appointment of a committee which would give careful and sympathetic study of the problem of the journals of the association, including existing contracts, editorial management and the whole policy of publishing journals from the association's standpoint.

(The above resolution was passed upon recommendation of the executive committee, and the president was authorized by the council to appoint the committee. At the request of the presiding president the council later voted that the committee be appointed by the incoming president in consultation with the executive committee.)

I should like to see tried out in an experimental way a plan of having from time to time a general central theme for the annual meeting of the association about which symposia, invitation papers, exhibits and other activities could be grouped. A few such central themes may be suggested.

It is obvious that "Evolution" as a theme would not need to be confined to organic and cosmological evolution, but would prove a fruitful topic of discusssion in all the sections, including evolution of physical and chemical systems, sociology, economics, education, history and philogeny.

"Time" is another central theme which in different ways could be discussed with profit. It could be considered in respect to life span and the effect of aging upon structural and physiological responses in plants and animals as well as upon the composition of human populations and resultant economic conditions. Reaction time, geologic time and time scales in astronomy and geology are only some of the expressions containing the word time which suggest subjects for discussion.

"Sources of Energy" as a central theme might not only interest the physicists and chemists but also the student of plants and animals. Its meaning could be broadened to include social and political systems.

"Temperature" is also a topic of general interest.

"Individuality" is a topic which has interested me personally and about which I may have something to say in my retiring address at next year's meeting. The biologist realizes that no two individual plants or animals are exactly alike and attempts to evaluate the relative rôle of heredity and environmental factors responsible for the differences between individuals. To what extent heredity and environment are factors in

bringing about differences in human behavior is a question of vital importance in education, sociology and other humanistic studies. The anthropologists would be in position to give information regarding the range of variability in the human skeleton and to tell to what extent there are racial types so far as physical form is concerned. The psychologists could discuss tests for intellectual, moral and other mental differences involved in personality; the sociologists and economists, the adjustment of social and economic practice to different personalities. The historical and philological sciences might discuss the relative role of the individual as opposed to the group in history. In the engineering section might come the adaptability tests such as those for motorists and aeroplane pilots. The medical sciences could have something to say about individual differences in susceptibility to disease, response to drugs, color blindness, blood groups and allergy. In agriculture the significance of the exceptional individuals in different systems of breeding, biological races of host and parasite, and the relative importance of genetic methods in comparison with favorable environment in increasing yield in different economic forms are some of the subjects which suggest themselves. In education, subjects which might be worth discussing are the relative emphasis to be placed on method and subject-matter and the relation of mental tests to the educational curriculum. Individual differences may be swamped in averages. The mathematician may give us reliable statistical measurements of individuality. If we change the term heredity without changing greatly its meaning we have in physical and chemical systems a similar conflict of influence between innate characteristics, such as structural arrangement of molecules and the environment, such as temperature. Chemical personality problems are therefore of interest to the chemist.

Such central themes as I have suggested could be developed in symposia, invitation papers and demonstrations in the association's exhibition, and might lead to profitable joint discussions taken part in by different sections, which the association might find it of advantage to publish.

Since "Individuality" is the kernel of democracy, it has been suggested that no better contribution could be made by the American Association than presenting as convincingly as possible the great amount of information available on the occurrence and importance of the individual. The topic of "Individuality" is therefore suggested as a general theme for the Dallas meeting to which the various sections and affiliated societies may make whatever contributions they see fit.

APPENDIX

GROWTH OF A_3S IN RELATION TO ITS OFFICIAL JOURNALS

1881. SCIENCE founded by Thomas A. Edison

1883. SCIENCE purchased by Alexander Graham Bell

1894. SCIENCE purchased by Dr. Cattell

1895–1920. SCIENCE was printed by New Era Printing Company, who "maintained the same rates for SCIENCE for 25 years."

1896–1907. SCIENCE was published by Macmillan Company, "who assumed the cost in view of the value to them of the advertising space."

In 1900 SCIENCE was made official organ of association.

In 1909 members could receive in place of SCIENCE, *Popular Science Monthly*, name of which was changed to *The Scientific Monthly* in 1915.

From 1900 to 1920 dues were $3.00, and $2.00 was paid by association for each member subscription to SCIENCE or *The Scientific Monthly*.

Since January, 1920, dues have been $5.00 and association has paid $3.00 for each member subscription.

1927. Members allowed to receive a second journal (SCIENCE or *The Scientific Monthly*) at $3.00 rate.

July 28, 1925. Contract signed regarding transfer of SCIENCE to the association at some future date; *cf.* SCIENCE, 64: 342–347, 1926.

December 12, 1938. Contract signed for both SCIENCE and *The Scientific Monthly*. Copy of contract appended.

MEMBERS AND FELLOWS OF THE ASSOCIATION DISTRIBUTED BY SECTIONS
September 1, 1939
(A member may be listed in several sections)

	Members	Fellows	Totals in Sections	Percentages in Sections
Mathematics (A)	650	872	1522	4.24
Physics (B)	1517	1732	3249	9.05
Chemistry (C)	2473	2391	4864	13.56
Astronomy (D)	346	455	801	2.23
Geology and Geography (E)	927	988	1915	5.34
Zoological Sciences (F)	1790	2073	3863	10.77
Botanical Sciences (G)	1236	1975	3211	8.95
Anthropology (H)	556	392	948	2.64
Psychology (I)	977	792	1769	4.93
Social and Econ. Sc. (K)	783	423	1206	3.36
Historical and Philological Sciences (L)	240	168	408	1.14
Engineering (M)	1482	1064	2546	7.10
Medical Sciences (N)	2856	2402	5258	14.65
Agriculture (O)	655	1122	1777	4.95
Industrial (P)	232	41	273	0.76
Education (Q)	938	865	1803	5.02
No Section	464	4	468	1.30
Totals	**17,658**	**17,755**	**35,881**	**99.99**

Membership on September 30, 1940, was 21,067.

CIRCULARIZATION COST AND MEMBERSHIP STATISTICS FOR THE YEAR ENDING SEPTEMBER 30, 1940

Circularization

Total circularization cost	$3,808.00
Number of new members	1,618
Cost per new member	2.36

(Each new member secured by circularization in 1940 cost that year thirty-six cents more than the $2 share which the association received from the $5 dues. Since the average duration of a membership is about seven years the circularization of last year should ultimately yield a net profit.)

Membership

Gain in memberships		
Reinstatements		27
New Members		
From circularization	1,618	
At winter and summer meetings	47	
Office correspondence and other sources	363	
From circularization prior years	140	2,168
Total gain		2,195
Loss in memberships		
Dropped for non-payment of dues		470

Resignations	611
Deaths	242
Total loss	1,323
Net gain for fiscal year 1940	872

Total circularization cost for five years ending September 30, 1940 ..... $19,490.00

Note: Memberships are expressed in even thousands and include some names in arrears.

Year	Memberships	Extra membership above number in 1900	Year	Memberships	Extra membership above number in 1920
1881–92 each year	2,000				
1893	2,000				
1894	2,000				
1895	2,000				
1896	2,000				
1897	2,000				
1898	2,000				
1899	2,000		1920	11,000	....
1900	2,000	....	1921	12,000	1,000
1901	3,000	1,000	1922	12,000	1,000
1902	4,000	2,000	1923	12,000	1,000
1903	4,000	2,000	1924	13,000	2,000
1904	4,000	2,000	1925	14,000	2,000
1905	4,000	2,000	1926	14,000	3,000
1906	4,000	2,000	1927	15,000	4,000
1907	5,000	3,000	1928	16,000	5,000
1908	6,000	4,000	1929	18,000	7,000
1909	8,000	6,000	1930	19,000	8,000
1910	8,000	6,000	1931	20,000	9,000
1911	8,000	6,000	1932	19,000	8,000
1912	8,000	6,000	1933	19,000	8,000
1913	8,000	6,000	1934	19,000	8,000
1914	8,000	6,000	1935	18,000	7,000
1915	9,000	7,000	1936	18,000	7,000
1916 Est.	10,000	8,000	1937	19,000	8,000
1917	10,000	8,000	1938	19,000	8,000
1918	11,000	9,000	1939	20,000	9,000
1919	11,000	9,000	1940	21,000	10,000
Approximate total annual memberships above number in 1900 for period (1901–1919)		95,000	Approximate total annual memberships above number in 1920 for period (1921–1940) ..		117,000

STATISTICS REGARDING ANNUITY FOR SCIENCE AND SCIENTIFIC MONTHLY ON BASIS OF CONTRACT GOING INTO EFFECT AT END OF 1940

Estimated Total net income for past 5 years	approximately $150,000*
Estimated Average annual net income to publishers for past 5 years on which annuity will be based	approximately $ 30,000
Yearly annuity to be paid by Association for 10 years	approximately $ 15,000
Total annuity for 10 years	approximately $150,000

* From statement of the editor of The Science Press, the total income for the four years, 1936 to 1939, was $120,507.94 for SCIENCE and $7,831.23 for *The Scientific Monthly* making a yearly average of $32,084.80 for the two journals for the four year period.

CIRCULATION DATA FOR SCIENCE AND THE SCIENTIFIC MONTHLY FROM AMERICAN NEWSPAPER ANNUAL AND DIRECTORY—N. W. AYER AND SONS—AND AUDIT BUREAU OF CIRCULATIONS

Year of Circulation	SCIENCE	*Scientific Monthly*	Ratio of SCIENCE to *Scientific Monthly*
1926	10,392	7,466	1.4
1927	10,757	....	..
1928	11,851	....	..
1929	13,150	....	..
1930	13,337	9,208	1.4
1931	13,801	8,939	1.5
1932	13,337	8,415	1.6
1933	12,202	7,397	1.6
1934	12,465	7,231	1.7
1935	12,606	7,323	1.7
1936	13,044	7,679	1.7
1937	13,252	7,927	1.7
1938	13,558	8,133	1.7
1939	14,081	8,559	1.6
1940	14,423	8,972	1.6

MEMBER AND NON-MEMBER SUBSCRIPTIONS TO SCIENCE AND THE SCIENTIFIC MONTHLY. 1940

	Circulation June 30, 1940 (A.B.C. Record)	Member subscriptions Sept. 30, 1940 (AAS office record)	Non-member circulation	Per cent. of circulation going to AAS members
SCIENCE	14,423	13,100	1,323	90.83
Scientific Monthly .	8,972	7,600	1,372	84.71
Combined	23,395	20,700	2,695	88.48

On September 30, 1940, paid membership was 19,815; members taking both journals was 883 (4.5 per cent.).

CONTRACT REGARDING SCIENCE AND THE SCIENTIFIC MONTHLY

THIS INDENTURE made this twelfth day of December, 1938, between JAMES MCKEEN CATTELL and JOSEPHINE OWEN CATTELL, his wife, co-partners trading under the registered trade name THE SCIENCE PRESS, both residing at Garrison, New York, grantors, and THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE (a corporation organized and existing under the laws of the Commonwealth of Massachusetts), hereinafter referred to as the Association, witnesseth:

WHEREAS on July 25, 1925, the said J. McKeen Cattell, acting on behalf of said partnership, entered into an agreement with said Association providing that the journal "Science" should become the property of the Association under certain conditions; and

WHEREAS, subsequently, on December 25, 1936, said James McKeen Cattell, acting on behalf of said partnership, made an offer for the sale and transfer to the Association of the journal, "The Scientific Monthly," which offer was accepted by said Association on June 25, 1937; and

WHEREAS the parties hereto have agreed to modify the terms of said agreements so as to provide for the present transfer of title to both of said journals to the Association, and to provide for a somewhat different method of payment for said journals by the Association;

NOW THEREFORE THIS INDENTURE WITNESSETH that the grantors, in consideration of the agreements herein contained, and for and in consideration of the sum of ten dollars ($10.00), receipt of which is hereby acknowledged, hereby sell, transfer and convey the absolute and unencumbered ownership of said journals "Science" and "The Scientific Monthly," together with their good will and all things appertaining to them to said Association, its successors and assigns forever.

In consideration of such conveyance said Association agrees to pay, in equal shares, to said James McKeen Cattell and Josephine Owen Cattell (or to her estate in case of her death) a total sum of three dollars ($3.00) per year for every annual member of said Association whose annual dues are paid and for every

fifty-year member and for every life member, so long as said grantors continue to control the editing and publication of said journals.

Upon the death of said James McKeen Cattell, in which event the control of the editing and publication of said journals by the grantors shall terminate, or upon the voluntary relinquishment by the grantors to the Association of such control of either or both of said journals, said Association shall pay each year in equal quarterly installments for a period of ten years to said James McKeen Cattell and said Josephine Owen Cattell, in equal shares, or upon the decease of either of them to his or her estate, a total sum equal to one-half of the average of the annual excess of receipts over costs in the conduct of each said journals so relinquished for the five calendar years immediately preceding the date of such death or voluntary relinquishment of control. For the purpose of determining the amount of the payments to be made for each of said journals so relinquished, the receipts from and costs of the editing and publication of it shall be determined from the books of account kept and used in conducting the business of the editing and publication of said journals, to which books the representative of said Association shall have access at any time. Said receipts shall include the payments made by said Association to said James McKeen Cattell and Josephine Owen Cattell for the purchase of said journals and in addition receipts from all subscriptions, advertisements and all other income incident to the publication of each of said journals. The cost of editing and publication of said journals shall not include any payment for services rendered to said journals by said James McKeen Cattell or Josephine Owen Cattell. In arriving at the cost of editing and publication, the outlays of the said grantors for office rent, business management and like overhead expenses shall be prorated in proportion to the expense of the several publications published by them, and the proportion thereof chargeable on that basis to each of said "Science" and "The Scientific Monthly" shall be deemed part of the cost of the editing and publication thereof.

Complete and absolute control of all problems and policies of the editing and publication of each of said journals shall remain with said grantors until the decease of James McKeen Cattell, in which event such control shall terminate, or until the voluntary relinquishment by said grantors of the control of each of said journals to the Association, and during that time said grantors shall retain all receipts from every source incident to the publication of such journals, and the said grantors do hereby agree to edit and publish each of said journals and to pay all costs of such editing and publication. Said grantors further agree that during such period they will cause to be furnished to each member of the Association in good standing and to each fifty-year member and to each life member a copy of each issue of either said "Science" or "The Scientific Monthly," as shall be designated by said Association; or a copy of each issue of both journals to any member of said Association for any year upon the payment by said Association to the grantors of an additional sum of $3.00.

Upon the death of said James McKeen Cattell or upon the voluntary relinquishment of control of the editing and publication of either or both of said journals by said grantors, the Association shall be entitled to all outstanding accounts not yet due to each of said journals so relinquished and shall be liable for all outstanding obligations of each of said journals so relinquished that are not yet due. Any accounts receivable and past due at the time of the relinquishment of control of the editing and publication of either or both of said journals so relinquished shall be retained by said grantors, who shall also retain any personal property used in the editing and publication of said journals.

Upon the death of said James McKeen Cattell or upon the voluntary relinquishment of control of the editing and publication of either or both of said journals by said grantors, the said grantors shall retain all sums received by them from the Association and all sums representing subscriptions to said journals paid in advance, provided however that an adjustment shall be made as if the death of the said J. McKeen Cattell or the voluntary relinquishment of the management and control of said journals, as the case may be, had occurred on July 1 of the year in which such death or relinquishment shall actually occur. Copies in stock of back issues of said journals shall belong to said Association. Said grantors agree that in case they decide to relinquish control of the editing and publication of said journals during the lifetime of said James McKeen Cattell, they will give to the Association three months' written notice of their intention to do so.

The Association agrees that upon the voluntary relinquishment of the control of the editing and publication of said journals by said grantors, or upon the death of said James McKeen Cattell, it will continue the then existing arrangements for editing, publishing and printing said journals for three months or for such longer period as may be agreed upon after such relinquishment or death, and so long and in so far thereafter as is consonant with the interests of said Association.

Should the average purchasing value of the dollar during any calendar year decrease by as much as 10 per cent. from its value in the year 1938, as determined by standard indices, an adjustment shall be made increasing in equal ratio the payments provided

for in this agreement, the increase to continue so long as the purchasing value of the dollar shall remain by as much as 10 per cent. below that in the year 1938.

In case the parties hereto disagree in respect to the meaning, intent or execution of any of the provisions of this indenture, the question at issue shall be submitted to three arbitrators to be appointed within three months of the date of such disagreement, one to be appointed by said grantors or their personal representatives, one by said Association and a third by the arbitrators so chosen. In case one of the parties hereto fails to appoint an arbitrator within the three months' time limit and the other party does appoint such an arbitarator, then the arbitrator so appointed shall appoint another arbitrator, and the two shall proceed as if one of them had been appointed by each of the parties hereto. The decision of such arbitrators or a majority of them shall be final and binding upon the parties hereto.

The American Association for the Advancement of Science hereby constitutes and appoints Forest Ray Moulton to be its attorney, for it and in its name, and as for its corporate act and deed, to acknowledge this indenture before any person having authority to take such acknowledgment, to the intent that the same may be duly recorded. This indenture is executed by the association pursuant to action taken by the executive committee of the council of said association at a meeting of said committee duly called and held on October 22, 1938.

IN WITNESS WHEREOF said grantors, James McKeen Cattell and Josephine Owen Cattell, have signed and sealed these presents and said association has caused these presents to be signed by its president and attested by its permanent secretary and has caused its corporate seal to be hereunto affixed the day and year first above written. Executed in duplicate.

MINUTES OF EXECUTIVE COMMITTEE AND COUNCIL REFERRING TO EXECUTION OF INDENTURE

The executive committee at its regular meeting on October 22, 1938, took actions as expressed in the following items which were later approved in writing by all members who attended the meeting:

"A copy of the proposed indenture by which Dr. Cattell and Mrs. Josephine Owen Cattell propose to transfer to the association titles to SCIENCE and *The Scientific Monthly* was given by Dr. Cattell to each member of the Executive Committee."

"The members of the Executive Committee were requested to send their copies of the indenture to the Permanent Secretary with such changes in the wording of the indenture, without changing its meaning, as they might wish to suggest."

"The Permanent Secretary was requested to prepare revised copies of the indenture and to send one to each member of the Executive Committee."

"The Executive Committee approved and authorized the President and the Permanent Secretary to execute the indenture, subject to such changes in wording, without changing its meaning, as might be desirable."

On recommendation of the Executive Committee, the Council on December 30, 1938, adopted the following resolution:

"Resolved that the Council, having accepted [by action of the Executive Committee under authority of the By-Laws Art. IV., Sec. 1: "The Executive Committee shall have full power to act for the Council when the Council is not in session."] on October 22, 1938, the offer of J. McKeen Cattell and Josephine Owen Cattell to sell and transfer to the A. A. A. S. the journals SCIENCE and *The Scientific Monthly,* and having directed the Executive Committee to complete the details of the purchase and transfer, hereby approves and ratifies the action of the President and Permanent Secretary in executing on December 12, 1938, by direction of the Executive Committee, the contract on behalf of the A. A. A. S."

Thereupon the Council initiated and passed the following motion:

"The Council again expresses to Dr. Cattell and Mrs. Cattell its appreciation of the work they have carried on for many years in editing and publishing the journals, and for transferring them to the A. A. A. S. under most generous terms."

MEMBERSHIP OF THE AMERICAN ASSOCIATION

By Dr. F. R. MOULTON
PERMANENT SECRETARY

SINCE the sections of the American Association for the Advancement of Science and its affiliated and associated societies cover rather comprehensively all the natural and social sciences, its record of membership is at least a rough measure of the progress of science. Since the association is truly national in scope, the geographical distribution of its membership measures approximately the distribution of interest in science in the United States.

For the purposes of this discussion it will be sufficient to present the membership of the association and the population of the United States by decades, except