For two years, beginning in the summer of 1924, the editor's eldest son, Dr. McKeen Cattell, while engaged in physiological teaching and research, assisted in the editing of SCIENCE, thus permitting the editor to attend as president of the American Association the meeting of the Pacific Division and later to spend two months in Europe. Otherwise he has not been absent from the office (though on several occasions it moved with him) for a longer interval than about a week and then only to attend scientific meetings. The editor made up every issue of the journal for thirty years, obtained most of the articles printed, decided on the disposition of every manuscript submitted, and prepared practically all the notes. As there was no possibility of paying for contributions the undertaking has not been easy. The contents of the journal may not always have been as interesting or as timely as would have been desirable, but the editor hopes that they have maintained high scientific standards, freedom of speech with decency of expression and impartial treatment of institutions and individuals. SCIENCE is perhaps the only publication in any country that may be regarded as a professional journal for scientific men as a class. Perhaps the chief satisfaction of the editor is that he has never had the slightest personal controversy or difficulty with any one of the thousands of scientific men with whom there have been relations. He especially appreciates their unanimous support of SCIENCE at a time when his views on war and conscription were not shared by most of them, and when the president and trustees of Columbia University made charges as serious as they were absurd.

The editor of SCIENCE has personally small use for charity or philanthropy. These may be needed as temporary expedients, but it would surely be better if scientific men could conduct their researches, their institutions and their publications as masters of the situation rather than as suppliants for aid. Only enlightened selfishness is involved in the transfer of SCIENCE to the American Association. The father wants his child to be cared for when he can no longer look after it himself. Although the editor of SCIENCE is but one of fourteen thousand members of the American Association, it and its objects have long been one of his chief interests, he being chairman of the executive committee of the council and having been a member of this committee and of its predecessor, the committee on policy, for twenty-five years. He has devoted his life in the main to the objects that the journal and the association are there to promote and he is thus doing the best he can to preserve SCIENCE for his enduring self.

These remarks are printed after hesitation and with reluctance. If there is any one who is familiar with the some 50,000 pages of SCIENCE issued in the course of the past thirty-two years, he can bear witness to the fact that personal references and appeals for aid have been lacking. The only excuse that can now be offered for a departure from this policy is that a psychologist and an editor knows the risk of leaving an obituary notice to others.

However these things may be, we may hope that the contract according to which SCIENCE will be owned and conducted by the American Association for the Advancement of Science will ensure a good journal of science and an influential association of scientific men. Both the journal and the association are means to an end, namely, the advancement of science, which is the most fundamental concern of modern civilization. Under the circumstances it may be reasonable to look not only for the continued cooperation of scientific men, but for their united efforts in the editorial and financial support and betterment of a journal that belongs to them.

J. MCKEEN CATTELL

THE RELATION BETWEEN THE COST OF RESEARCH AND THE COST OF PUBLICATION

As chairman of the sub-committee on publication of the Committee of One Hundred on Research, of the American Association for the Advancement of Science, it has occurred to me that it might be of interest to find out approximately the relation between the amounts spent for research and the cost of the publication of the results. For this purpose I addressed a letter to each author of a paper in the *Journal* of the American Chemical Society or in *Industrial and Engineering Chemistry* for the April issues of the current year, asking for an approximate estimate of the cost of the article, including:

(a) That portion of your salary during the period when you were working on the research, which you think may fairly be charged as a part of the expense of the preparation of the article.

(b) Any special expense incurred for equipment or materials.

(c) The proportional part of the cost of the upkeep of your laboratory which might reasonably be charged as a part of the cost.

The response has been very cordial and general. Twenty authors of papers in each journal gave me their estimates:

For the *Journal* of the American Chemical Society the estimates covered 172 pages, with a total of $26,138. This is $152 per page.

For *Industrial and Engineering Chemistry* the estimates covered 151 columns, with a total of $46,352, or $307 per column.

The estimates varied from $5.50 to $540 per page for the *Journal* of the American Chemical Society and from $20 to $4,000 per column for *Industrial and Engineering Chemistry*.

Evidently such statistics must not be pressed too far, but it seems probable that the totals and averages are rather below than above the actual costs.

From the treasurer's report for 1925, the *Journal* contained 3,190 pages and cost $46,578.50, or about $14.60 per page. *Industrial and Engineering Chemistry* contained 2,636 columns and cost $72,006, or about $27.30 per column.

The inquiry was made whether the space allowed to the author was adequate for the proper presentation of his results. Fourteen authors of articles in the *Journal* of the American Chemical Society desired more space and five authors of articles in *Industrial and Engineering Chemistry*. It is evident that the need of additional funds for publication is felt much more keenly by writers for the former journal. It can scarcely be questioned that articles which will have a far-reaching and permanent effect on the development of our science are more likely to appear in that *Journal* and that the authors, as a class, receive less adequate remuneration for their work.

On the average, an interval of 4.1 months elapsed between the receipt of an article by the editor of the *Journal* of the American Chemical Society and its publication. The interval for *Industrial and Engineering Chemistry* was, on the average, 2.3 months. For the latter journal very few articles were held more than two months, and little improvement could be expected for a monthly journal.

Delays are due chiefly to three causes:

(1) Inadequate funds for the publication of all suitable material submitted. The delay could be remedied during the first eight or nine months of the year by sending to the printers, each month, all articles that are ready and publishing smaller numbers during the last months of the year, if the budget requires this. It costs no more to publish an article at one time of the year than another and every one desires prompt publication.

(2) Necessity of returning articles to authors to be shortened. The remedy for this is partly in the hands of the authors. Undoubtedly some articles are improved by a briefer presentation. There is a very general feeling, however, that the abbreviation has been carried too far. So far as this is true, the only remedy is additional funds for publication. It is very evident that these are urgently needed. In spite of the rigid limits for space set by the editors, our authors evidently prefer the large circulation given to articles published in our journals to the more adequate space permitted by journals of a more limited circulation.

(3) Delay of papers in the hands of associate editors. This has very likely been aggravated by the feeling on the part of these men, all of whom are busy and serve without compensation, that the publication will be delayed for the first reason and prompt return of a paper is unnecessary. Such delays should, of course, be made as short as possible.

We seem justified in the conclusion that contributors to the journals of the American Chemical Society furnish, free gratis, articles which have cost for their preparation at least ten times the sum required for their publication. The prestige of the journals depends on the excellence of the articles contributed to them, and we are in no position to pay for them even a small fraction of what they have cost. In *Industrial and Engineering Chemistry*, especially, authors and firms often hesitate to publish material which may be of value to their competitors, and the public is under great obligation to those who have the wisdom to see the advantages to be gained from cooperation. We certainly owe to these authors and to the institutions and firms which they represent more adequate and prompt publication than they now receive. How can this be secured? It is very poor economy for us to promote research, as we are now doing, and refuse to furnish the means of making the work that is done of value to the world.

WILLIAM ALBERT NOYES

URBANA, ILLINOIS

THE FIRST GREENLAND EXPEDITION OF THE UNIVERSITY OF MICHIGAN

THE expedition has returned safely after spending nearly nine weeks exploring in Southwest Greenland. The *Morrissey*, on which transportation was secured for the expedition both to and from Greenland, is an 83-ton schooner with auxiliary power commanded by Captain Robert A. Bartlett and chartered by the expedition of the American Museum of Natural History directed by George Palmer Putnam.

The *Morrissey* ran upon an uncharted reef near Cape York and sustained very serious injury to her bottom, including the loss of a part of her keel. In a leaking condition the *Morrissey* left Holstenborg with the Michigan party on September 7th and the second day out lost her propeller. Thus badly crippled, after reaching the Straits of Belle Isle she encountered a series of moderate gales from the southwest which continued for five days, during which she made very little advance. These gales were succeeded by a full gale from the northeast before which she ran and reached North Sydney, Nova Scotia, on September 23rd.

The Michigan Expedition was directed by Profes-