

Hodges to assume the entire charge of SCIENCE for a fixed annual sum. For three years M. Hodges had charge of the paper, under the advice of the Board of Directors. Mr. Hodges made large reduction in expenses of publication, but unfortunately made a larger reduction in the subscription price, from five dollars to three dollars and fifty cents a year.

It was never the intention of Messrs. Bell and Hubbard to make a profit from the publication of SCIENCE, but they did expect its establishment to make a contribution to science.

The circulation of the journal, under the management of Mr. Hodges, largely increased, and the changes made by him and his associate editors, Messrs. D. G. Brinton, of Philadelphia, and Charles Platt, of Baltimore, whose services were given gratuitously were of great value. It was originally supposed that advertisements would contribute largely to its support, but they were not obtained, partly on account of the limited circulation, and more largely because advertisers preferred to publish in special journals rather than in one intended to meet the wants of the scientific public.

The publication of SCIENCE was stopped for a time a year ago, although its circulation was then larger than it ever had been, the stringency of the times preventing many from paying their subscriptions.

At the meeting of the American Association for the Advancement of Science, at Brooklyn in 1894, the renewal of the publication of SCIENCE was brought before the Association. A large committee was chosen to consider its usefulness, and the propriety of contributing towards its support. Mr. Hodges appeared and stated fully his views and plans; the Association then voted that a contribution of fifteen hundred dollars should be made for the purpose of enabling Mr. Hodges to continue its publication. Immediately after Mr. Hodges decided that

he could not continue the publication, and therefore this arrangement fell through.

Subsequently the reorganization of SCIENCE was undertaken by Professor Cattell, of Columbia College, who will, we trust, make it a success.

It would not be proper to close this article without an acknowledgment of the great ability, untiring zeal and never flagging interest shown by Mr. Hodges in his connection with SCIENCE.

CORRESPONDENCE.

A CATALOGUE OF SCIENTIFIC LITERATURE.

EDITOR OF SCIENCE:—The admirable plan for a card catalogue of scientific literature recommended to the Royal Society by the Harvard University Council (reprinted in the current volume of SCIENCE, pages 184–186) strongly commends itself to users of scientific literature, and has already been adopted with minor modification by at least one national scientific society. A slight extension of the plan in one respect would seem, however, to be advantageous.

The body of scientific literature is vast and constantly increasing, and scientific authorship and publication are rapidly extending from country to country and from point to point in each country throughout the world. Population is increasing, and with it writing and printing increase; civilization is spreading, and with it literature is expanding in an increasing ratio; science is becoming increasingly important as a directing and controlling force in civilization; and so the growth of scientific writing outstrips that of non-scientific scripture; the domain of science is widening rapidly as research concerning every conceivable subject pushes into and illumines the penumbra of half-knowledge; and thus the subject-matter of scientific literature is differentiated. Moreover, the fashion of scientific publication is changing; few recent investigators

spend years on a book, the masterpiece of a decade or a lifetime; most keep pace with the rapid progress of the times by issuing their chapters or sections as completed from time to time in the form of articles or brochures; and thus the average number of titles to be credited to individual authors is increasing. So the augmentation in scientific literature is many-branched and cumulative, and its rate is constantly augmenting. With the multiplication of scientific literature the need for comprehensive cataloguing is multiplied; yet with the multiplication the difficulty of measuring the teeming flood from the scientific press is increased in still larger measure. The task before the Royal Society is one of great magnitude.

It would seem that the success of the scheme for cataloguing scientific literature will depend largely on the intimacy of the relations to be established between the Royal Society, on the one hand, and (1) trade publishers, (2) non-commercial publishers, and (3) individual authors, on the other hand. Now, the basis for the relations between the central organization and trade publishers, and through them with the authors, is the simple one of financial interest; it is set forth in a satisfactory manner in the report of the University Council, who point out that it would be to the interest of the writers, as it would be also to that of the publishers, to prepare summaries suitable for carding by the central organization. In the case of this class of publishers, perhaps the leading interest would be that of the publishers themselves, who might accordingly be trusted to induce negligent authors to prepare the requisite summaries.

The non-commercial publishers include those issuing (a) periodicals put forth without hope of profit and often at individual sacrifice, which it would be useless to advertise in the ordinary way by reason of the

limited number of possible subscribers; (b) proceedings, transactions and related serials published in limited editions by many scientific societies; (c) reports of official bureaus, like the U. S. Geological Survey and various State institutions, to whom increased distribution means no profit, but some loss in time, if not money; and (d) privately printed and irregularly published brochures, booklets and leaflets, commonly issued by the authors themselves. All of these classes of publications are important in this and several other countries; collectively, in this country at the present time, at least, they probably contain the major part of the material which should be catalogued by the Royal Society. To bring their contents within reach of a central organization would involve a wide-reaching and constant co-operation, which manifestly cannot be brought about through the ordinary financial stimulus, since the publication is not made on a commercial basis; it can be brought about, if at all, only through the inspiration of creative genius and authorial ambition. There are few scientific writers who would not be willing, indeed glad, to prepare summaries of their writings for the sake of securing wider publicity and more permanent record of their discoveries and ideas; for it is the laudable ambition for publicity and permanent record, for the good of men, that inspires the original writing, if not indeed the research itself. Many of the non-commercial publishers themselves are actuated by similar motives, and would be willing to incur the small tax of periodically sending summaries to the central organization, while others would doubtless be stimulated thereto by the authors themselves; yet, it is probable that so far as the non-commercial publications are concerned, the stronger bond of connection would be that between the central organization and the authors; and since the more natural relation is the hierarchic one, first

from central body to the less numerous class and from this in turn to the more numerous, any device that would strengthen the relation between the central body and the publishers would be useful. Thus, it might be well for the Royal Society to furnish sets of cards pertaining to the specialty represented by the non-commercial publication, either in exchange simply for the periodical transmission of summaries or in return for such summaries and for printing in the advertising pages or elsewhere a standing notice of the Royal Society catalogue. The coöperation of the publishers in securing, and indeed in editing, the summaries would be highly desirable, partly because with most writers summaries or abstracts need editorial scrutiny more sadly than their ordinary writing. It may be noted also that in these days of the making of many bibliographies there is a special need for abstracts and summaries for a wide variety of purposes, and the recognition of this need will make easier the way of the Royal Society in putting its plans into execution. Partly for this reason there would seem to be a certain desirability in printing the brief summaries, perhaps in a distinctive type, in conjunction with scientific articles.

The Geological Society of America recently concurred in a report to the Royal Society conforming to that of the Harvard University Council, with a brief addition designed to facilitate obtaining summaries of articles from non-commercial publishers of scientific literature, this addition having been suggested by the writer as one of the committee on the subject.

W J McGEE.

TEACHING BOTANY ONE TOPIC AT A TIME,
ILLUSTRATED BY SUITABLE MATERIALS
AT ANY SEASON OF THE YEAR.

EDITOR OF SCIENCE—*Sir*: The recent papers in SCIENCE concerning the manage-

ment of classes in botany prompt the following. In these times, of course, every true teacher of botany insists that his pupils shall study the objects before receiving much, if any, instruction from books or persons. I take it for granted that any teacher of a class beginning subjects that are treated in *Gray's Lessons* would prefer to take them up in about the sequence there given, but he will find it impossible to procure at any season of the year enough suitable material that is fresh to fully illustrate many of the sections of the book. For example, he cannot procure at any one time suitable materials to illustrate the section on stamens. The varieties there illustrated appear at different dates some weeks apart. So of the forms of pistils, the torus, fruits, etc. My plan has been to collect quantities of stamens of the barberry, sassafras, lobelia, cypripedium, mallow, locust, dandelion, lily, tulip tree, blueberry, sage, milkweed, and in most cases preserve each kind by itself in twenty-five per cent. alcohol, or in formalin one hundred of water to one of formalin. These are ready when we want to study stamens. A specimen or more of each kind of the preserved objects for illustrating any section of this subject can be placed in a small dish before each pupil in case fresh specimens cannot be procured. In many instances, when not allowed to dry, these can be gathered up and used for several successive classes.

In like manner, it is very satisfactory to be able, when fruits are to be studied, to have a good many kinds to illustrate the various sorts, such as half grown plums or cherries, the mandrake, bloodroot, violet, mulberry, winter-green, etc. Lessons in morphology can, in this way, be made more impressive than when some of the illustrations are used in one day and others in a week or a month.

W. J. BEAL.

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