

PLANT SCIENCE BULLETIN

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The Challenge to Botanists

Sydney S. Greenfield

Chairman, Committee on Education
The Botanical Society of America

American education is continually beset with problems resulting from its transitional nature, and from conflict in the aims and methods adopted to meet contemporary needs. The extensive and accelerated changes of the past several decades have raised many critical problems that are now subject to widespread public and professional discussion. Although we are vitally concerned with the overall problems, the development of botanical science in the service of American education is of particular concern to us, and is urgently in need of our attention. In a considerable number of institutions, botany has grown with the expansion of the science, and of education, and is now vigorously and extensively serving the needs of undergraduate and graduate instruction, but this development has not been general. On the whole, botany has not kept pace with the expansion of the other sciences, and in some cases there has been a decline if not an elimination of botany from the curriculum. A summary of certain critical aspects of this situation was presented in the "Report of The Committee To Study the Role of Botany in American Colleges and Universities" at the meetings of The Botanical Society of America at Ithaca in 1952. A limited number of copies of this report is still available for distribution to members.

The Committee on Education of The Botanical Society of America has been studying means whereby it might effectively promote greater appreciation and proper development of plant science in the colleges, as well as the education of the general public as to the importance of plants and their study to man. This will require nationwide discussion among botanists of educational and other problems, with a view towards development and formulation of professional policies, and plans for coordinated constructive action.

Until now, a major obstacle to cooperative analysis and attempts to solve our common problems has been the lack of an appropriate medium for intra-professional discussions, and in this regard, the establishment of Plant Science Bulletin may well presage a new era for professional botany in this country. As scientists we are coordinated by the A. A. A. S., and as biologists by the A. I. B. S., but on the next level there is urgent need for communication among plant scientists. Under the sponsorship of The Botanical Society of America, and with proper support and utilization, this new publication might develop into an effective coordinating medium for all the plant sciences.

As part of the many potential uses of this bulletin, we plan to discuss various aspects of the educational prob-

lems facing us, and at present we would like to review the overall situation as it appears to the Committee on Education. The problems with which we are confronted seem to fall into three general areas, namely, education of the general public, education of the botanical profession, and education of college and university administrators and faculties in general.

With regard to the general public, we need to stimulate and conduct presentations of interesting news items and stories that will lead to widespread understanding of the significance of plants and plant studies. This work should be carried on by individuals, committees, universities, and other agencies, and should make use of the popular press, films, radio and television. Some universities and botanical gardens are already engaged in this, and their work should be reported and discussed in this bulletin in order to stimulate greatly expanded activity in this field.

Within the botanical profession we need to have widespread discussion of objectives and of improving methods in botany and biology teaching, and in this Plant Science Bulletin will be very valuable. Conferences and symposia on biology teaching should be held in the Teaching Section, and at various local meetings. We need to exchange information on what we are doing in the various colleges, and together formulate standards and goals for plant science in various curricula. Certain universities could act as centers for work with colleges, teachers colleges, and high schools in their respective localities. Botanists should be stimulated to study aims, objectives, and methods, and to contribute articles to various educational journals to improve and expand the services of plant science in biology and general education programs.

Much work needs to be done with regard to educational administrators and college faculties. After thoroughly discussing the problems among ourselves, we need to evolve and publish criteria for evaluating biological and botanical programs with regard to content, method, and professional preparation of personnel. Fundamentally, we need to work out standards and goals to provide information that will be useful to the regional accrediting associations in evaluating colleges of various kinds, and in encouraging them to improve. We might also set forth conditions which we regard as unsatisfactory to aid them in looking for faults in need of correction. However, our standards should not be in terms of minimum conditions required for accreditation, but rather in terms of ideal goals towards which colleges should be encouraged to develop. The emphasis in the accrediting agencies is definitely on gradual, encouraging, positive and constructive action, rather than merely on police action. We need to work out standards for botany

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Plant Science Bulletin

HARRY J. FULLER, Editor
203 Nat. Hist. Bldg., University of Illinois
Urbana, Illinois

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Editorial Platform

Plant Science Bulletin, which is to be a quarterly publication of the Botanical Society of America, is getting off to a late start, an unfortunate condition which results from pressures of many sorts upon its Editor: an extraordinarily heavy teaching load, his function as Treasurer of the Botanical Society of America, his inexperience in editorial work, and the concomitant necessity of his education in matters journalistic, and heavy participation in the activities of academic bureaucracy—committee work, doctoral examinations, etc. For the delay in smashing the champagne bottle upon the prow of *Plant Science Bulletin*, the editor is appropriately apologetic; he promises that no further delays will beset *Plant Science Bulletin* during his editorship.

As a prelude to his charting the course of *Plant Science Bulletin*, the Editor invited comments and suggestions from members of the Society concerning the editorial and publication policies of our new organ. Suggestions received from about one-fifth of our total membership of approximately 1850 indicated the following convictions of the respondents:

1. Although *Plant Science Bulletin* may duplicate in part the functions of the *AIBS Bulletin*, it can nevertheless perform a unifying function among plant scientists and thus is deserving of an adequate trial period.

2. The *Bulletin* should carry no commercial advertising, although it might appropriately carry paid personal advertisements of a brief nature concerning job vacancies, botanists available for jobs, books and journals for sale by members of the Botanical Society of America, etc.

3. Each number of the *Bulletin* should include one feature article of general interest to plant scientists on some plant science subject. Such articles should not be reports of research but should rather bear upon the importance of botany and related plant sciences in education, in industry, in governmental agencies, and in the national defense, with emphasis upon the derivative nature of applied science in relation to pure science.

4. The *Bulletin* should include a section devoted to personalia: retirements, deaths, promotions, honors, etc.

5. The *Bulletin* should carry occasional articles of a "recent advances" and summarizing type in various fields of Botany and related sciences.

6. The *Bulletin* should publish occasional articles on non-academic careers and positions available to professional botanists.

7. The *Bulletin* should function in part as a clearing house for research requests and aids—specimens and materials wanted and available, information about who is doing what, etc.

8. The *Bulletin* might make an important contribution to the teaching of botany by including papers on course organizations, visual aids, examinations, demonstration techniques, etc.

10. The *Bulletin* should include notices concerning special fellowships and assistantships (other than the usual graduate school fellowships and assistantships offered by colleges and universities), exchange teaching and research appointments, and related matters.

In addition to these often mentioned suggestions, the Editor received many other suggestions for topics suitable for *Plant Science Bulletin*. Among these are: botany in relation to food technology, anniversaries of special events in botanical history, biographies of noted botanists, foreign botanical activities, notes on plant curiosities, news of conservation activities, information concerning expeditions, academic freedom of scientists, tenure and salaries of botanists, information on greenhouse construction and operation, exposure of superstition and quackery about plants, availability of special lecturers on botanical subjects, etc.

The Editorial Board, after consideration of the responses to the Editor's appeal for suggestions, has decided that *Plant Science Bulletin* should emphasize those topics in the numbered list above, since these were mentioned most often by our members who sent their opinions to the Editor. This does not imply, of course, that the editorial topics of *Plant Science Bulletin* will be limited to these subjects. Members should feel free at any time to suggest to the Editor or to any member of the Editorial Board additional items for possible publication in *Plant Science Bulletin*.

In accordance with this general policy statement of the Editorial Board, the Board and the Editor invite members of the Society to submit manuscripts, news items, and other materials to the Editor for possible publication in *Plant Science Bulletin*. The Board has agreed further that all manuscripts submitted to the Editor should be read and approved by the Editor and two members of the Editorial Board as a prerequisite to publication of such manuscripts. The Editor will receive for publication personal advertisements concerning job vacancies, job availability, and botanical books, journals, and specimens for sale by members of the Society at a cost of \$1.00 for three lines, with an added charge of \$0.50 per line for additional lines, the total number of lines not to exceed ten. The Editor further will accept institutional subscriptions and subscriptions from non-members of the Society at \$2.00 per year per subscription.

All manuscripts, news items, personal advertisements, and other items submitted to *Plant Science Bulletin* should be addressed to Harry J. Fuller, Editor, *Plant Science Bulletin*, 203 Natural History Bldg., University of Illinois, Urbana, Illinois.

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as a plant science group, but in regard to general biology we shall need to work cooperatively with the zoologists.

Many of the problems we face reflect in part the urgent need to improve American education in general, but the situation with regard to botany is somewhat worse than that which obtains in comparable subjects. There are several factors that contribute to this special retardation, among which are:

1. The manner in which general biology has developed. The development of general biology as plant and animal science, cooperatively planned and taught by botanists and zoologists is proper and fitting in view of the composite nature of the course, and it has resulted in a number of excellent situations, but unfortunately this has not occurred in the majority of institutions. In many places, general biology is mostly zoology, taught mainly by zoologists. This has had widespread repercussions in the failure to hire botanists where needed, and in the neglect of plants in biology courses, with a consequent decline in the election of botany courses by those who might have majored in the field as well as by prospective teachers. Thus the detrimental effects of the neglect of plant science in biology courses and programs are multiplied and extended to graduate schools, to other colleges and junior colleges, to the teachers colleges, and thereby to the lower schools. This would seem to be our basic problem in the colleges. An administrator who does not know the different kinds of biologists or why both botanists and zoologists need to be equally involved in biology courses will think nothing wrong of hiring "biologists" to teach "biology" even though these are all zoologists. It is our responsibility to clarify the issues here and to define biology, especially for those who think it is a synonym for zoology.

Where a biology department exists instead of separate botany and zoology departments, there may be some decline in enrollment and therefore a smaller staff. That in some cases the decrease should be entirely at the expense of botany with the practical result of having only a zoology department under the misleading title of biology is a development we cannot afford to ignore. We need to see to it that we have adequate botanical representation in all "biological" organizations. In the colleges, we must insist on equal partnership between botanists and zoologists in the planning and teaching of general biology courses. This does not mean that a college must have equal numbers of plant and animal scientists, for the requirements of the elective courses will vary. With regard to the botany electives, their number and the institutional support they receive will depend on local factors as well as on the quality of the teaching and the nature of the botany courses. The responsibility for improving the courses and the teaching rests with us.

2. Apathy or even antagonism on the part of some botanists to enter into general biology or general education programs has resulted in inadequate treatment of plant science in these courses. We must aim to see that plant science plays its proper role in all pertinent curric-

ula and that we do our share of the planning, teaching, and textbook writing.

3. The acceptance of mediocre students by some graduate schools and our neglect in encouraging enough dynamic and energetic young men to enter the profession has resulted in some shortage of teachers who are able to maintain and advance plant science education. This is probably true in other fields as well, but a number of botanists have expressed a desire for widespread study of this problem with a view towards improving standards and encouraging more able young people to become botany teachers.

4. Until recently, there has been a serious lack of sharing knowledge of how to cope with changing conditions and educational problems. Plant Science Bulletin should be very valuable in providing the means for a nationwide exchange of such information.

The progress of botany and botanists in every biology and botany department would seem to be of interest to all of us, and it is clearly our professional responsibility to try to improve conditions wherever we can. In a number of cases, botanists as individuals or in groups have helped botany departments or individuals in difficult situations. Probably most of such work should be done this way, without publicity, but it will require a wider understanding among botanists as to their responsibilities and the proper procedures.

If botany declines because of poor teaching, we need to improve the teaching. If good teachers have difficulties, we need to help them with information, guidance, or even visitation where desirable. If a botany department deteriorates, we should try to help it recover. If botanists are not employed in fair representation in general biology, we need to see that those responsible understand the composite nature of the field of biology, and what is sound academic procedure, but we will also have to be able to recommend good teachers for jobs. If poor or unsatisfactory conditions exist due to a lack of understanding of proper procedures, then by considered and tactful educational campaigns we should be able to stimulate improvement in many places.

The problems with which we are confronted in plant science education are exceedingly complex and difficult. It is easy to rebel against difficult situations and to act in anger, but this helps very little, and may cause harm. It is also easy to submit to difficult predicaments, but this inevitably leads to despair and worsening conditions. Faced with the seemingly impossible, some botanists have been outspoken for each of these approaches, with some confused rationalization by both the belligerent and the "ostrich-minded." The wisdom of experience dictates neither the anger of rebellion nor the despair of submission, but rather a calm and realistic acceptance of any situation, however bad, with dedicated resolution to work towards solving the problems and improving conditions.

We are faced with tremendous problems in improving plant science education and American education in general, and whether as botanists or university professors we can meet the challenge is questionable. But as we

realize how vital the improvement of education is to our civilization, let us resolve that botanists shall take a leading part in this work.

PERSONAL

The Botanical Society of America has lost the following members through death since January 1, 1954:

Allan, Charles E., University of Wisconsin; Bailey, Liberty Hyde, Cornell University; Blakeslee, Albert F., Smith College; Brown, Forest H. H., Honolulu, Hawaii; Campbell, D. H., Stanford University; Coker, William C., University of North Carolina; Domin, Karel, Prague, Czechoslovakia (corresponding member); Fassett, Norman C., University of Wisconsin; Fritsch, F. E., Cambridge, England (corresponding member); Poindexter, John, Occidental College; Rosenberg, Otto, Stockholm, Sweden (corresponding member); Shull, George H., Princeton University; Spoehr, Herman A., Carnegie Institute of Washington, Stanford, Calif.; Sponsler, O. C., 15053 Sutton, Sherman Oaks, Calif.; Stadler, Lewis J., U. S. D. A., University of Missouri; Starcs, Karlis, 5870 Sunset Lane, Indianapolis, Ind.; Tucker, C. M., University of Missouri.

John R. Laughnan, Professor of Farm Crops, University of Missouri, has been appointed chairman of the Department of Botany, University of Illinois, to succeed Oswald Tippo, present chairman of the Department of Botany and Dean of the Graduate College, University of Illinois, who has resigned to become chairman of the Department of Botany, Yale University, on September 1, 1955.

Dr. William C. Steere, Editor of the *American Journal of Botany*, Professor of Botany at Stanford University, and Program Director for Systematic Biology of the National Science Foundation for 1954-1955, has been appointed Dean of the Graduate Division of Stanford University, effective September 1, 1955. Before winding up affairs of his NSF post, Dr. Steere is going to Chile for two months, to do what he has not divulged. We fear that this may mean the selection of a new editor for the *American Journal of Botany*, although we hope that we are wrong in this assumption. Dr. Steere left the chairmanship of the Department of Botany at the University of Michigan in 1950 to join the Stanford faculty. Congratulations, Dean!

Sociological note: a nationally circulated magazine has recently quoted Dean Edmund W. Sinnott of Yale University to the effect that the time and energy wasted on bridge playing might be put to use if they were diverted to amateur scientific pursuits, such as bird-banding, tree-ring analysis, and exchanging specimens of Coleoptera or records of meteorite showers. What the deuce, Dean!

Treasurer's Corner

The work of the Treasurer's office would be greatly reduced if members of the Society would: 1. Pay their annual dues before February 1st of each calendar year (the list of delinquent members for 1955, to be sent to the Business Manager of the *American Journal of Botany* on April 1st, contains the names of 191 members, 11% of our total membership). 2. Be certain that their checks are made out in the correct sum; between December 1, 1954, and March 15, 1955, the Treasurer has received 41 checks made out in the wrong sum; each of these necessitates a letter from the Treasurer to the guilty member and an exchange of checks). 3. Send their address changes promptly to the Treasurer, who will then immediately notify the Business Manager and Editor of the *American Journal of Botany*, the Secretary, and the AIBS mailing office in Washington of these changes. 4. Notify the Business Manager of the Journal of irregularities in the receipt of numbers of the *American Journal of Botany*.

Active members of the Society who are about to retire from their positions should write to the Treasurer concerning retired membership status and its privileges.

Members who wish to aid in gaining new members of the Society may write to the Treasurer or to the Secretary, who will be glad to send application forms in any desired quantity.

DARBAKER PRIZE IN PHYCOLOGY

Dr. Leasure K. Darbaker, a physician of Wilkinsburg, Pennsylvania, who was for many years a member of the Botanical Society of America and who died in 1952, bequeathed funds to the Society to provide an annual sum (to be known as the Darbaker Prize) for a "grant or grants in Microscopical Algae." The sum available to the Society annually will approximate \$150.00. The award or awards will be made annually by a committee of the Society; the present Committee on The Darbaker Prize consists of William Randolph Taylor, chairman, Harold C. Bold, John D. Dodd, Ruth Patrick, and Gilbert M. Smith. The Committee will base its judgement primarily on papers published by candidates during the last two full calendar years previous to the closing date for nominations. Nominations for the 1955 award accompanied by a statement of the merits of the case and by reprints supporting the candidacy should be sent to Professor William Randolph Taylor, Department of Botany, University of Michigan, Ann Arbor, Michigan, not later than April 15, 1955. Announcements of the 1955 winner (or winners) of the Darbaker Prize will be made at the annual meeting of the Society at Michigan State College, East Lansing, in September, 1955.