PLANT SCIENCE BULLETIN

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Botany in the Framework of Captive Education

— A Search for Policy —

GEORGE S. AVERY, JR.

BROOKLYN BOTANIC GARDEN

(Revised address of the retiring President of the Botanical Society of America, Inc., delivered at the annual banquet, Indiana University, August 27, 1958.)

Unless my ears deceive me, we botanists are more concerned today with training specialists (Ph.D.s) than we are in developing teachers who will labor in the vineyards of grade and high school education—where the basic character and inspiration for future scholars takes form.

Moreover, many of us have no serious interest in the student who wishes only to dip into our botanical treasure chest for what it can offer him of life-enriching avocational interests; yet most of us are convinced that plants are as vital to the spiritual development and good emotional adjustment of man as food is to his body.

It is my view that our interest in training specialists leads us to underemphasize the importance of reaching more students who will be the average citizens of tomorrow. I suggest that in this approach we are missing a broad "market" for botany—one which, if pursued, could attract an enormous and enthusiastic following. It is my conviction that with a little change in our outlook, we can attract the large following, and at the same time train specialists for scientific careers. In its present position, we probably all would agree that botany needs the broad "grass roots" support that would come from attracting considerably greater numbers of students—and giving them a course or two slanted for lifetime enjoyment.

There might be advantage in our taking a look at botany in a different perspective. If we liken it for the moment to a commercial product, here is the picture:

There is on the American market today an almost universally desirable commodity which is manufactured in numerous branch factories across the country. In recent years, in the face of stiff competition, the demand for this product has slackened and production has slowed down in spite of subsidies which guarantee financial return for workers and management alike. Unless a new breath of life can come into the sales picture, the continuing gradual loss of customers will lead to the closing of some of the branch plants, and a reduction in the number of workers. In appraising the situation, it is clear that the company has never compromised on quality; millions have been spent in research to broaden knowledge of the product. Yet, curiously, the company has never carried out research on sales. Sales promotion, whether in the smaller outlets or at the supermarket level, has in general been in the hands of people untrained in the technique of building customer appeal.

The commodity is, of course, American botany. The branch plants are the colleges and universities. We botanists are the workers and management, sales force and researchers. Though we may (and should) have confidence in our many skills, to find such four-in-one versatility in personnel is almost unheard of in successful enterprises. And without our subsidy—the "science requirement"—I fear that we would have long since gone the way of the buggy whip.

Now, what can we do together about this situation? Just so my position is clear let me assure you that my remarks are not to be construed as opposed to scientific research. As Dr. Went pointed out in his introduction, it was my privilege to help establish the second plant hormone laboratory in North America, and with my colleagues I led the life of an active investigator, book collaborator, editor and college professor for many rewarding years. Let me say also that I am an incurable optimist about the future of botany in the American educational scene.

One important objective, as I see it, is to broaden the acceptance of botany in the framework of captive education. This phrase, as I choose to define it, is all diploma- or degree-seeking education. It is within this fully controlled captive education marketplace that we now sell our subsidized product—courses in botany and related fields.

Before examining the problem of making the plant field more attractive to students, let us look at the

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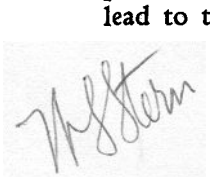

Plant Science Bulletin

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EDITOR'S NOTE

EDITOR'S NOTE: Your Editor apologizes for the delay in getting out what should be the October Issue. Although you may not get it until December, it is being called the "November" Issue because there will still be a sixth issue for 1958 and it will have to be called "December."

The items sent in by Regional Correspondents are good and are most welcome, so do not let the long delay dampen your ardor for sending in "news and notes."

A number of manuscripts have been submitted for consideration. More are desired. Readers have expressed desire for articles to bring general botany and general biology teachers up to date in fields which have advanced rapidly by them. Why don't some of you who feel that your specialty is not being given good treatment in introductory courses write up what you think should be stressed? Other readers have asked for stories of some of the well-known, great teachers of botany telling how they made their imprint on students. If you knew one of these people why don't you share your recollections of him with others. Still other readers have asked for discussions of what is wrong, and what is right with botany teaching, teachers, graduate training, etc. Why not get your criticisms off your chest? And lastly, what would you like someone else to write about?

Botany in the Framework of Captive Education

(Continued from page 1)

questionnaire sent out last winter, to which approximately 300 of you in 200 different colleges and universities and numerous industries and government departments so kindly replied. The institutions represented in the replies enroll approximately one-third of the something over two million undergraduate students now in the 860 U. S. colleges and universities. Not all questions were answered on every questionnaire, but if the replies represent a fairly typical cross-section of American higher education, as I believe they do, then this is the picture of contemporary botany that you have so thoughfully helped to compile. In briefest review:

Approximately half the schools offer introductory courses in botany (to a total of 95,000 students) and two-thirds give introductory courses in biology (to 125,000 students)—which means that a number of schools offer introductory courses in both botany and biology. Of the 220,000 students, 36,000 go on to take one or perhaps a few other courses in botany.

As to number of students taking botany now, compared with ten years ago: approximately 5 percent of the reporting schools give figures to show that their registration has increased *at least* in proportion to the increase in total student body, while 95 per cent state that they have either the same or fewer students than ten years ago—and thus a proportionate drop in botany enrollment. Fewer than half the reporting schools have data available for twenty years ago, but with a few exceptions they make it clear that percentage-wise, botany enrollment has not kept up with over-all growth of the colleges and universities.

Are certain courses particularly attractive to students? After the compulsory introductory course come plant physiology, ecology, and taxonomy (in that order). Some teachers are highly successful with special topic courses, such as "plants and man."

There are widely divergent opinions concerning a clear-cut philosophy as to objectives for students in botany, which makes it impossible to adequately summarize them here. To the question on whether students are being trained for semi-professional or professional service at the bachelor degree level more than half the replies said yes, and gave a quite impressive list of careers students pursue.

Should students take botany for avocational reasons as well as vocational? The answers were overwhelmingly "yes"; only six said "no" (ratio 28:1).

A 6:1 ratio hold the view that botany offers greater avocational opportunities for the average student than most other subjects in science.

The majority feels that we are giving about the right emphasis to research in our courses for the average student, but subject matter which the average college-trained person can use later in life is woefully underemphasized (ratio 4:1).

Replies to the question about where popular botanical subject matter is published point up the fact that our interests as specialists, and the natural urge to advance professionally, have largely kept us from producing popular literature. Most of the answers refer to gardening publications—and to lay horticulture in general, indicating that botanists feel that applied horticulture is definitely in the botanical realm and is, in fact, the main body of our popular literature.

As to whether students are interested in the social applications of botany, the answers ranged widely, but these comments represent in some degree the thoughts of the majority:

"Students not particularly interested in social appli-

cations of botany, due to their immaturity, but it sinks in after they settle down."

"Most of our students in botany (and other science-requirement-satisfying courses) represent a captive audience . . . they are fulfilling degree requirements."

"Only those concerned with teaching in secondary schools are interested in the social applications of botany."

"A beginning course in botany should cover more of its social applications, *e.g.*, I always try to give a little of the 'food vs. population' story."

"Very few are interested in the social applications of botany—the majority seem to feel burdened by the graduate student 'rat race' and feel that ivory-tower teaching is a proper career goal."

To summarize, the answers confirm, nationally, what we already know about most of our own local situations, *i.e.*, with but few exceptions, registration in botany is continuing a long-term downtrend, and we have thus far evolved no educational philsophy or practice to successfully arrest or reverse it. On a few points the replies indicate a high degree of unanimity in our thinking: we agree that it is just as important for students to study botany as part of "good citizen" training as it is for those who plan to be professional botanists. We also largely agree that botany offers greater avocational opportunities than most other subjects in science. Moreover, most of those reporting mentioned our "popular literature" as most frequently found in gardening and horticultural magazines.

I can interpret your questionnaire replies in only one way: Our human interest thinking is slanted toward the horticultural and nature study aspects of our field, yet our courses are slanted chiefly toward fulfilling the science requirement and training for professional careers. Students take our introductory courses almost wholly to satisfy the requirement, and not because they foresee an area of possible future personal interest. It seems safe to say that without the science requirement subsidy we would have no more students in botany than now take Latin and Greek. For botany to reverse the downtrend in enrollment and thrive over the longer term, we must somehow reach more "average citizen students" and give them course material that will lay the groundwork for lifetime enjoyment of plants.

At the same time that we are working toward making our situation more attractive in the captive educational framework, we will be preparing for the still larger objective of mass popular education in the botanical field. The ultimate mass effort means developing a "free market" completely outside our present sphere of college and university teaching, the framework for this already exists in a few botanic gardens and arboretums. With the understanding assistance of professional botanists and horticulturists, all such institutions could have popular educational programs. Properly presented, such courses can attract people in great numbers, and in my view this offers our greatest potential for bringing a large "grass roots" following to our field. If we are to think of and prepare for the future, then I submit: the next need will be for hundreds and perhaps thousands of botanic gardens and arboretums to satisfy popular demand. Who is going to train the people to run them? I hope it will be the botanists—through the "average citizen" type of student. Thus, I think that in addition to training specialists for careers in science, we can also be training a "sales force" of people who will have little or no interest in going beyond the bachelor's degree. In this group will be found the personnel for inspired grade and high school teaching, and for the popular educational development that I visualize in the botanical gardens and arboretums of the future. With greater understanding by the general public of what plant life is all about, there will be a transmission of respect to the academic world that will be reflected in greater numbers of students voluntarily taking botany. One of the ultimate benefits of this will be that more extremely bright youngsters who are interested in "science" in general will be attracted to our field specifically.

Just what steps does this mean we must take? I think it means that our "average citizen" botanist is most likely to be attracted to us if we simply slant more of our undergraduate courses toward the training of people for carreers in popular botany . . . as teachers, not primarily of science, but of botany-for-lifetime-enjoyment. I see no heresy in such teachers presenting botany as one of the "humanities." It need not water down or otherwise weaken our scientific program in any way. We can go right along training specialists who are untainted with popular trivia.

Let me offer two or three horticultural and taxonomic examples of botany in terms of the humanities: we might, for instance, present the flowering masterpieces of the plant world. Even the taxonomist must admit that many cultivated plants of today are the wildings of yesterday, selected for cultivation because of their resistance to disease, tolerance of climate, and crop or other value; or, for the point of my remarks here, their beauty. Why should we not champion such "living Rembrandts" as *Magnolia denudata* that grows wild in China, the many magnificent double-flowered cherries of Japan which have come over the centuries from the hands of nameless hybridists, or even "sculptured" Bonsai—the fascinating miniature trees grown in containers by the Japanese—and now enjoyed by thousands of enthusiastic amateurs all over the world. Or, aside from the humanities, we might effectively dramatize such now commonplace plant physiology as the applied plant hormone story—from sticking fruit on trees to selective weed killing in lawns. It is ideas such as these that students do not forget.

Great developments, cultural or otherwise, seem to occur when the time and circumstances are ripe for them. It is my belief that botany-with-a-new-look is just around the corner, and that an era of important

service lies ahead—IF—if we professionals are willing to broaden our thinking beyond the *science* of plants, and have popular botanical education as an additional objective. Nearly 90 per cent of the U. S. population now lives in towns and cities. This is the great "free market" for the botanical gardens and arboretums of the future. We can train the people to do the job. Moreover, we can aid and abet garden clubs, chambers of commerce, and other community-level organizations in founding well-located arboretums and/or botanical gardens which should supplement the public schools by becoming centers of popular education. This is where our sales force-to-be will have its most challenging opportunity. It can supply the currently lacking channel of communication between professional botanists and lay people who have only avocational interests in plants.

Ultimately, our professional action must be weighed against the social as well as scientific needs of the people, and our degree of success or failure will be measured by our capacity, collectively and individually, to meet such needs.

ABOUT THE DUES FOR 1959

During the last few years the finances of the Botanical Society of America were not on a sound basis. Each year there was a deficit which was made up out of reserves collected in earlier years. Since the financial difficulties arose primarily from the increased costs of publishing the American Journal of Botany there were just two alternatives which could bring the Society on a sound financial basis again. Both of these were discussed at our annual meeting in Bloomington. They consisted of: 1) reduction in the size of the American Journal of Botany, or other undesirable measures to increase the income from this Journal; or, 2) an increase in membership fees. The Executive Committee was reluctant to recommend a substantial increase in the cost of membership, but at the annual meeting it proved that the fairly good turn-out of members were unanimously in favor of the increase of the annual membership from $7.50 to $10.00. I hope that this increase in dues starting next year will not be a reason for anyone to drop his membership or will not be a deterrent for other botanists to join us.

F. W. Went, President

OFFICERS FOR 1959

~~Honorary President.....HARRY J. FULLER~~
President.....WILLIAM C. STEERE
Vice-president.....VERNON I. CHEADLE
Secretary (through 1959).....B. L. TURNER
Treasurer (1958–1963).....A. J. SHARP

CERTIFICATES OF MERIT

At the Society's Dinner for All Botanists, attended by approximately 400, President Went announced the recipients of the Certificates of Merit for 1958. There were three.

HARRY JAMES FULLER. Professor of Botany, University of Illinois, Urbana, Illinois.

For continued, self-sacrificing service to Botany, whether as a teacher, a writer of needed textbooks, an editor, or as an officer of the Botanical Society of America.

PHILIP ALEXANDER MUNZ. Director of the Rancho Ana Botanic Garden, Claremont, California.

For his penetrating studies of the Onagraceae, of the flora of California, and for his farsightedness and breadth of purpose resulting in the development of a model botanic garden.

LESTER WYLAND SHARP. Emeritus Professor of Botany, Cornell University, Ithaca, New York.

His contributions, both by personal investigations and by successive editions of carefully edited textbooks, have made plant cytology a significant field of Botany.

DARBAKER AWARDS

Dr. Paul Silva and Dr. Ralph Lewin were the recipients of the 1957-58 Darbaker Awards "for microscopical work with the Algae." Dr. G. F. Papenfuss presented them each with $250 at the Dinner for All Botanists.

COOLEY AWARD

Dr. Richard Howard, Director of the Arnold Arboretum was presented with the Cooley Award of the American Society of Plant Taxonomists by Dr. H. L. Mason at the Dinner for All Botanists.

WANTED

The building housing the Botany Department of the University of New England, Armidale, New South Wales, Australia burned down in the early summer. If anyone has reprints, or Journals, which he could send them they would be greatly appreciated. Write Professor Noel Beadle.

Living, reproductive material of Oedogonium is needed by Dr. Harold C. Bold, Department of Botany, University of Texas, Austin 12. He wants a ½-oz. jar or a 10-ml. culture tube, half filled with liquid, air-mailed to him and he will refund the postage.

Dr. Clair Kucera of the Botany Department of the University of Missouri, Columbia, wants clonal material of *Eupatorium rugosum* from any part of its natural range.

CHROMOSOME NUMBERS

The second issue of the Index to Plant Chromosome Numbers compiled from nearly 300 journals published in 1957, is now ready for distribution. There are around 2,000 listings of original chromosome counts from the entire plant kingdom and a bibliography of 196 papers from which the listings were taken. Preparation of the Index has been supported in part by a grant from the National Science Foundation of the U.S.A. The price of each issue is $1. Orders for subscriptions may be sent to:

DR. C. RITCHIE BELL
Department of Botany
University of North Carolina
Chapel Hill, North Carolina, U.S.A.

From the Annual Business Meetings

The business meetings of the Society were held on August 25th and 26th at the University of Indiana. At both meetings more than 100 members were present. Following are the minutes in an abbreviated form.

1. President Went announced that, for reasons of health, Dr. Harry J. Fuller had resigned his position as Editor of the American Journal of Botany. Dr. Harold C. Bold was elected by the Editorial Committee to fill this position, and as a result, he resigned as Secretary. Under the provision of Article IV-3 of the By-laws of the Society, the election by the Council of Dr. B. L. Turner to fill the Secretarial office, effective August 1, 1958, was announced. In addition, it was announced by President Went that Dr. Harriet B. Creighton had accepted election as Editor of the Plant Science Bulletin, a position also previously held by Dr. Fuller.

2. As instructed by the Council, Dr. Bold presented the names of those on the second nominating ballot who stood in the top three places as a result of the balloting in which more than 1200 votes had been received. These names, listed in order, highest first in each category, were as follows:

President	Vice-President	Member of Educational Committee for 1959-61
H. J. Fuller	V. J. Cheadle	A. W. Galston
W. C. Steere	L. Constance	A. H. Sparrow
K. V. Thimann	J. N. Couch	A. C. Smith

Dr. Tippo made the motion, and this was duly seconded, that Dr. Fuller, in view of his incapacity, be made Honorary President and that Dr. Steere be elected to the office of President. It was further stipulated that should Dr. Fuller again resume active participation in the Society, his name should be placed on ballot by future nominating groups. The motion carried unanimously.

Upon further motion, duly seconded and carried, the Secretary was instructed to cast a ballot for those receiving the greatest number of nominating votes in the remaining categories.

3. The Secretary presented the results of balloting on the Amendments to the By-laws of the society. These follow:

A. To Article III, Section 1, add: "Editor of the Plant Science Bulletin" —APPROVED

B. To Article II, Section 1 (d), add a last sentence: "Corresponding members shall receieve the publications of the Society and have all other privileges of active membership". —APPROVED

C. Amendment to Article II, Section 1 (e), regarding the right of retired members to receive the Journal without cost was also approved by the Society. (Action on this amendment must await a general study of the financial condition of the Society; a committee for this purpose will be appointed by the President.)

4. The President reported that the Council received and studied reports of officers, section secretaries and chairmen, committee chairmen and representatives to other groups. Details of these reports may be obtained from the recorded minutes of the Council Meeting which are on file with the Secretary.

5. The Treasurer and Business Manager of the American Journal of Botany, presented their interim reports which are in the files of the Secretary.

6. The President reported that the Council had recommended that the Society not meet in 1959 with the A.I.B.S. but instead that it hold a Council and Business Meeting in Montreal, Canada, during the IX International Botanical Congress to be held in that city August 19–29, 1959. A motion was made, seconded, and carried unanimously that the Council's recommendation be followed.

7. The President reported on the Council's discussion with respect to the financial condition of the Society and the Journal. It was the suggestion of this body that dues be raised $1.00 for each member, fully realizing that such an increase was only a stop-gap measure and that because of rising printing costs, postage fees, etc., further financial action would be needed in the future. Dr. Steere suggested that measures be taken to correct the problem at one blow rather than follow the temporary corrective action recommended by the Council. Several other members spoke vigorously in support of this latter view.

8. The President presented a summary of the financial problems facing the Society, after which followed considerable discussion from the floor. Alternate proposed budgets, based on increased membership fees were considered. Several suggestions from various members were made with respect to student fees, Journal subscription costs to libraries, Journal production costs, etc.

It was moved and seconded that the fees for regular membership be set at $10.00 and that graduate fees be set at $6.00. The motion was carried unanimously.

Dr. Greenfield followed this with an additional motion, which was seconded and carried unanimously that the fees for family membership be increased to $12.00.

9. The suggestion was made from the floor that a Financial Committee be appointed by the President to study the financial condition of the Society and the Journal and that this committee make prompt recommendation to the Council of any corrective action that seems necessary.

10. A motion was made, seconded and carried unanimously that the Treasurer and Business Manager, in

view of the increased dues, make a new budget proposal and that this should be submitted to the Executive Committee of the Council for approval. The final budget will be appended to the new membership list to be circulated in spring of 1959 or else will appear in the Plant Science Bulletin.

11. The Secretary reported that the projected Guidance Bulletin would be ready for distribution soon and wanted to place on record his and the Society's thanks to Dr. Irwin Spear for his dedication and effort in completing this task.

GRANTS, AWARDS AND HONORS

Professor William Randolph Taylor was elected this June, Correspondent of the Institut de France, Academie des Sciences. A Correspondent is a foreign corresponding member.

The Botany Department at Yale deserves mention which it has not received in most press notices for the fact that Joshua Lederburg one of the recipients of this year's Nobel Prize in Medicine did his graduate work there with another of the sharers, Edward Tatum. Tatum was Associate Professor of Botany in 1945–46 and Professor of Microbiology 1946–48.

A two year grant from the N.S.F. is supporting the work of Gilbert A. Leisman at Kansas State Teachers College on fossil flora in Kansas coal balls.

Ronald L. McGregor of the University of Kansas Botany Department has a three year N.S.F. grant for a biosystematic study of the Composite genus *Echinaceae*.

Another three year N.S.F. grant went to Robert W. Baxter of the Univ. of Kansas for study of the coal age flora of Kansas.

Robert W. Lichtwardt, also of the Univ. of Kansas, has a two year N.S.F. grant to work on infectivity and the life cycles of the *Eccrinales* and related fungi that live obligately in the guts of arthropods.

On May 29, 1958 Dr. Walter C. Muenscher's former students dedicated in his honor a plaque to be placed in the Poisonous Plants Garden commemorating his many years of selfless service to Botany and to the College of Agriculture at Cornell University. The plaque was executed by Elfrieda Abbe, sister of Ernst Abbe of the University of Minnesota. Emeritus Professor Muenscher is known internationally for his studies on poisonous plants and weeds.

Elwood B. Shirling of Ohio Wesleyan has grants from the N.S.F. and from the Society of American Bacteriologists to study phage in Actinomycetes.

C. S. Gowans of the Univ. of Missouri had a Lalor Award for summer research at Cold Spring Harbor on the genetics of Chlamydomonas.

The Frasch Foundation has renewed its grant of $10,000 for a continuing study of chemical inhibition and physiology of virus infection of plants under direction of D. F. Millikan of the Department of Ho culture of the Univ. of Missouri.

Marie-Helene Sachet of the Pacific Vegetation Pr ect was awarded a grant from the Joseph Henry Fu of the National Academy of Sciences to cover tra expenses to enable her to study on Clipperton Isl in the eastern tropical Pacific. She went with a gr from the Scripps Institution of Oceanography visit the island as part of the IGY program.

F. R. Fosberg had a grant recently from the Ge raphy Branch of the Office of Naval Research to st the effects of a severe typhoon on Jaluit Atoll, a lo lying coral atoll.

Charles B. Reif is studying protoplasmic similari between green and colorless forms of Euglena by munological techniques with a two year grant fr the N.S.F. He is at Wilkes College in Wilkes-Ba Penna.

Francis J. Michelini, also of Wilkes College ha two year grant from the N.S.F. for studies involv the use of a developmental index coupled with munological techniques to learn of the developme processes in Xanthium. Undergraduates are work in both of the research projects at Wilkes.

The Botany Department of Florida State Univer received an AEC grant to aid in equipping a ra isotope laboratory in which the techniques for resea can be taught in plant physiology and other cou in the College of Agriculture.

Ernest R. Sears, Research Geneticist of the U.S.D at the Univ. of Missouri received the 1958 Hoblitz National Award, $10,000, a gold medal, and a cer cate, for his work on wheat. He was selected as " scientist who has made the most important contri tion to American agriculture in the last four years.'

Harry Thiers of Texas A. and M. has a three y N.S.F. grant to make an ecological study of the fle fungi of the Gulf Coast Region.

Charles Heimsch of the University of Texas ha two year N.S.F. grant to support studies of devel mental root anatomy. Because of the grant he not take up his new duties as Head of the Departm of Botany at Miami University, Oxford, Ohio u September, 1959.

Gilbert L. Stout, Chief of the Bureau of Plant Pa ology of the California Department of Agriculture, f merly a field botanist of the Illinois State Natu History Survey, and before that an undergraduate a a teacher of botany at Miami University, was gi an honorary Doctor of Science degree in August Miami University. He received his Ph.D. from Illin

James G. Horsfall, Director of the Connecticut Ag cultural Experiment Station received an Honorary D tor of Science degree from the University of Verm in June for his contributions to agriculture, indus and science in the field of plant pathology.

Professor Charles Edwin Bessey, Master Teacher

RAYMOND J. POOL

Even after forty-four years since his death, Dr. Charles E. Bessey is widely known in America and abroad as a really outstanding teacher and author in the field of botany. His elementary and advanced texts were used in the secondary schools, colleges, and universities for more than a half-century. His pupils, who came to know him best, were aware of the fact that these were among his proudest personal accomplishments. He preferred to be known as a teacher rather than an investigator. His great joy in life was to lead young men and women to a fairly broad introduction to the world of living things. He sought, also, to help them to build a foundation for whatever their future years might bring, as well as to prepare them for fields of special research. Sometimes we wonder if these significant objectives may not be more or less overlooked in recent years when so very much emphasis is placed upon the desirability of profound research. Nevertheless, the advanced and truly scholarly nature of Bessey's many papers in the field of phylogeny and taxonomy are clearly revealed in his published works.

Dr. Bessey preferred to "lecture" before large classes of Freshman students, rather than to teach a few advanced and graduate students. He was also known, however, for the use of his impressive and enthusiastic "skills" to direct many students for further work in his field. The fact that many of his pupils came to be Presidents, Deans, Professors, and Investigators in dozens of American colleges, universities, and research institutions adequately demonstrates the wisdom and scope of his fundamental approach to the teaching job at all levels.

I have talked with scores of Bessey's students, over the course of a half-century, and in every instance they have told me of some inspiring occasion or statement, often profound sometimes homely, in classroom or elsewhere, that inspired them and endeared the man to them forever. The intensely infectious, and always wholesome enthusiasm of the man left their lasting stamp upon thousands of men and women who never went beyond the Freshman course with him. To this day few of them could distinguish between parenchyma and sclerenchyma, or tell the difference between Chroococcus, Cystopteris, and Chenopodium. But they all proudly testify to the lasting effect of a bit of meristem that he left forever implanted in their future lives, whether, in after college days they became bankers, lawyers, merchants, teachers, clergymen, politicians, biologists, foresters, botanists, geneticists, phytopathologists, or virologists!

An interesting sidelight into Dr. Bessey's appealing and distinctive personality, originality, and loyalty to a given idea or skill in teaching botany, was his scheme for the pronunciation of technical botanical names and terms. He consistently sought to follow what he thought was the "old" or "hard" sounds of the Latin or Greek names and terms. He reasoned that, since such words are usually nouns or adjectives that are derived from or transformed into such languages, that they should be pronounced that way. He was so persistent in the use of such practice that it became a noteworthy mark of the man and his students. We have often heard this practice joked about, or even ridiculed, as an idiosyncrasy far beneath the man whom all respected.

Dr. Bessey often posted lists of names and terms, with his own diacritical marks as to how to "say" them. It was perfectly natural for Bessey's students to say: Rho-zocky'eye, never Roz-a'c, or Rose-ace'ee. And we were taught to say: Kick-or-rocky'eye, not Sick-or-ace'e; Poo-kin'e-ah, not Puck-sin'yah, or Puck-sin'e-e, and so on! Such matters were drilled into Bessey's students with what was almost religious detail and devotion. In these later years some of the older folks of the "Besseyan Regime" sometimes feel what is almost a bit of sacrilege, when we hear the garbled no-system-at-all in such trends that seems to have fallen almost to the "TV level."

We should refer to another "Besseyism" that made him well known as a loveable teacher and leader in school and community. His very effective figures of speech, his coy wit and humor, often appeared in unexpected places in the classroom and elsewhere. For instance, at an annual banquet of the Nebraska public school teachers convention one autmn the large hall was crowded with hundreds of teachers from all parts of the state. Dr. Bessey sat at the speakers table which was spread along one side of the room. He had had time to scan the rather lengthy after-dinner program, including music and many speakers. Bessey was asked to pronounce the invocation, and, after a few of the usual phrases had been spoken, he concluded his prayer in his clear, heavy voice with the following words: "And, dear Lord, if brevity be the soul of wit, wilt thou make us all very witty tonight."

Professor Bessey was stockily built, about five feet six inches tall, broad shouldered, and weighed about 160 lbs. in his later years. He always wore a beard which was, at first, long and dichotomous, but, about 1900 when the single uni-apical Vandyke became popular, he changed to that style, which was always immaculately trimmed, but with rather heavy moustache. His conversation and lectures were in a perfectly modulated and deep voice that carried throughout even a large room. The lectures before his classes in botany were uniquely illustrated by bold, digrammatic, but accurately chalked figures on the blackboard. These sketches were quickly executed and they were powerful

aids in the presentation of subject matter, and copiously used throughout the period. He gave frequent 3-minute written quizes in addition to the regular longer term examinations.

Professor Bessey's kindly, orderly, fatherly personality, and an enviable esprit de corps were always conspicuous about his department. He always "had time" to confer with students, and his suggestions and advice were frequently sought regarding matters beyond the department and campus. The warming impressions that his glowing enthusiasm for his field, and for life wherever he found it, marked him as one of the truly great teachers of America for all time.

MOVES

Adrian W. Poitras to Department of Biological Sciences, Florida State; A. C. Smith, Director, Museum of Natural History, U. S. National Museum, Smithsonian Institution, Washington, D.C.; David D. Keck, Program Director for Systematic Biology, National Science Foundation; Donald F. Wetherell to the Botany Dept., University of Connecticut (replacing Raymond H. Wallace who retired after 26 years); Richard W. Scheiber from the University of Wisconsin to the University of New Hampshire; Everett Morris from the Martin Branch of the University of Tennessee to Western Illinois University, and Aristotle J. Pappelis from the U.S.D.A. to the same place.

Charles J. Bishop for one year to the Summerland, B.C. Experiment Station, as Superintendent; Charles L. Kramer to the Department of Botany and Plant Pathology, Kansas State; F. W. Went to be Director of the Missouri Botanical Garden and Professor of Botany at Washington University; M. K. Cooperrider to Kansas State; Eugene M. Wilson to United Fruit Co. headquarters, Boston; Donald H. Ford to be a plant pathologist for Eli Lilly at their Agricultural Research Center, Greenfield, Indiana; Robert Stewart, to Sam Houston State College, Huntsville, Texas; Calvin McMillan, Botany, University of Texas; Robert Airth from the McCollum-Pratt Institute to Botany at the University of Texas.

Biology Department at the Univ. of Omaha; Robert Anderson also to Omaha.

Rolla M. Tyron to be Associate Curator and Curator of Ferns at the Gray Herbarium, Harvard; Milton Zaitlin to the Horticulture Department of the University of Missouri; Richard C. Smith to Miami University, Oxford, Ohio; Walter Hewitson also to Miami; To Ohio Wesleyan James Gordon Ogden III and, as visiting instructor, Robert D. Henry; George S. Ramseur to the Biology Department of the University of the South, Sewanee; Glen Moore to Brigham Young Univ.; Norman G. Davis to the Department of Botany and Plant Pathology at Alabama Polytechnic Institute, Auburn; Emily L. Hartman to Kansas State Teachers College; Raymond D. Couser to Baker Univ., Baldwin, Kansas; Marcus M. Rhoades to Indiana University; Ronald A. Pursell to the Botany Department of the University of Tennessee; Arnold A. Wellwood to the W. R. Dept. of Agric., Moor Plantation, Ibadan, Nigeria; Norton H. Nickerson to the Missouri Botanical Garden as Morphologist; Calvin Freeman has gone to Wilkes College in Wilkes-Barre, Pa.; Robert Ireland to be Assistant Curator, Division of Cryptograms of the U.S. National Museum.

If you have moved and want the rest of us to know about it, let the Editor know.

NATIONAL SCIENCE FOUNDATION GRANTS

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the Life Sciences is Jaunary 15, 1959. Proposals received prior to that date will be reviewed at the Spring meetings of the Foundation's Advisory Panels and disposition will be made approximately four months following the closing date. Proposals received after the January 15, 1959, closing date will be reviewed following the Spring closing date of May 15, 1959.

Inquiries should be addressed to the National Science Foundation, Washington 25, D. C.

PROGRAM OF GRANTS AND AWARDS FOR 1959

The Lalor Foundation has a program of awards for 1959 which it is offering to college and university faculty members for research in the biological sciences.

These awards are to be for support of research on the fundamental biochemical and biophysical mechanisms concerned with fertility and reproduction in various forms of life. The objectives

or more complete understanding of the basic phenomena ... ultimately toward better possibilities for biological d control.

ay range up to $8000 per year and will be scaled in) the scope and duration of the projects approved. ll be given to younger members of university and col- h an upper age limit of 45 years. The work may be the applicant's own institution or elsewhere.

ndation will also grant post-doctorate summer or search awards in the field described on projects which, would be appropriate to the Marine Biological Laboratds Hole, Mass., or elsewhere. For these awards, the normally not exceed $900 for a single man or a woman, narried man working at his home institution and $1250 l man with principal program at another institution. ons and inquiries should be directed to the Lalor Foun- Lancaster Pike, Wilmington 5, Delaware, and the for receipt of applications is Jaunary 15, 1959.

an D. Conger to the departments of botany and ogy as Professor of Radiation Biology, Florida Univ.; Daniel B. Ward to Botany at the Uni- ty of Florida (replacing Lillian Arnold who re- after 30 years service); John H. Davis, for three , to the University of Mandalay; Burdette L. enknecht to be horticultural taxonomist at the ld Arboretum; Raymond A. Evans as Range Conionist at the Crops Research Division of the Agriral Research Service of the U.S.D.A. at Reno; odore T. Kozlowski to the Univ. of Wisconsin, rtment of Forestry and Wild Life Management; les E. Miller to Emory Univ.; William C. Denison siting Assistant Professor at the Univ. of North lina, Chapel Hill; Karl H. D. Busch to head the