PLANT SCIENCE BULLETIN

A Publication of the Botanical Society of America, Inc.

VOLUME 3 JULY, 1957 NUMBER 3

Genetics, Corn, and Potato in the USSR

ANTON LANG

Department of Botany, Univ. of California, Los Angeles

In April, 1956, the Soviet Russian government announced the resignation of T. D. Lysenko as president of the All-Union Lenin Academy of Agricultural Science. This event signified the end of the period of absolute domination which the so-called Soviet or Michurin-Lysenko genetics had enjoyed in the USSR. This time therefore seems appropriate for assessing some of the consequences which the Lysenkoist experiment had for the USSR. The losses suffered by science can be appreciated fairly easily, although it will probably take a long time before all details will be known. Any person with some appreciation for the continuity of scientific work can visualize how an experimental science will be affected by eight years of almost total suppression. But it is of interest to estimate the costs which Lysenkoism has caused to Russian plant breeding and agriculture. Some articles which have recently appeared in Russian journals permit us to attempt such an estimate, and this estimate clearly shows: the warnings that were voiced by biologists in the free countries have come sadly true, the adoption of Lysenkoism has resulted in serious setbacks to Russian agronomy.

Two papers which appeared in the July-August, 1955, issue of *Botanicheskiy Zhurnal* (vol. 40, Nr. 4) are of particular interest. This journal, the official publication of the All-Union (Russian) Botanical Society and thus comparable with *American Journal of Botany*, was the first Soviet Russian periodical in which articles critical of Lysenko were published after the approval of Stalin had made Lysenkoism the "official genetics of the USSR".[1]

One of the papers, written by P. A. Baranov, N. P. Dubinin, and M. I. Hajinov, deals with hybrid corn in the USSR. Work on hybrid corn in Russia followed fairly closely its development in the USA. By 1935, the breeding institutions were ready to supply hybrid seed to the collective farms, the Soviet equivalent of our commercial producers. In that year, however, Lysenko launched a violent attack on the breeding of hybrid corn. He declared that, corn being a cross-pollinating plant, inbreeding would lead to a "biological impoverishment of its genetical basis," that a "half-dead organism" would result, and that it would be impossible to maintain inbred lines for more than 10 or 11 generations.[2] He ridiculed the idea that crossing such inbreds could produce a superior plant. Instead, he advocated the use of *varietal* hybrids, asserting, in addition, that their hybrid vigor would not be limited to F_1, but would persist through F_2 and F_3.

Under Lysenko's influence, breeding of hybrid corn (in the "Western" sense) was completely abandoned in the USSR for more than 10 years, until 1947, when the All-Union Institute of Plant Industry (formerly headed by Vavilov) resumed the work on a moderate scale with the aid of inbreds obtained from the USA. Even then the work continued to meet with disapproval, for in 1949 an All-Union Conference on Corn Breeding, held at Odessa, endorsed Lysenko's method and condemned the use of inbred lines. This was done even though by that time it was evident that varietal hybrids were little, if at all, superior to the existing, open-pollinating varieties, a conclusion which had been reached in the USA more than 20 years earlier.[3]

As a result, breeding and seed production of hybrid corn in the USSR, when given the green light again, had to start practically from scratch. In 1954, when about nine-tenths of the corn acreage of the USA were planted with hybrid corn, the figure for the USSR was 0.8 per cent and was far behind the figures for countries like Algeria (25%) and Italy (19%) where hybrid corn had been introduced comparatively late. The corn-growing acreage of the USSR is about 10 million, and the average yields, as far as can be gathered, are 0.4 to 0.6 tons per acre. Assuming that the yields of hybrid corn exceed those of the open-pollinating varieties by only 25 per cent and that, for the average of the last 10 years, half of the Soviet Union's corn acreage could have been planted with hybrid corn, the total loss in corn yields, which the country suffered by following Lysenko's prescriptions, amounts to at least 6,000,000

[1] It is of interest to note that the first of these criticisms appeared in the November-December issue of 1952. Lysenkoism, thus, began to lose its grip in Russian biology in Stalin's lifetime, although there is little doubt that this development was greatly accelerated by the dictator's death. The two articles which will be discussed here also appeared before the formal removal of Lysenko from his presidential post.

[2] At that time, some American inbred lines were in their 35th generation!

[3] See H. K. Hayes and R. Garber: Breeding Crop Plants. McGraw-Hill, 1927.

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

JULY, 1957 • VOLUME 3, NO. 3

tons. This may not seem much by American standards, but then the present corn acreage of the USSR has been only slightly more than 10 per cent of that of the USA. (Average U. S. corn-growing area for 1949–1952: 83,000,000 acres, average yield 90,000,000 tons.) Further, it is possible that the more serious effects of Lysenko's "contributions" to hybrid corn breeding in the USSR are still to come. In its January 1955 meeting, the Central Committee of the Communist Party of the Soviet Union has ordered a *sevenfold* increase in the corn acreage of the country, to be accomplished within six years (to 70,000,000 acres in 1960), and the *exclusive* use of hybrid corn within *two* or *three* years. The situation in which Soviet corn breeding finds itself owing to Lysenko will not exactly facilitate this ambitious project.

The second paper in the same issue of *Botanicheskiy Zhurnal*, which also permits some estimate of the effects of applied Lysenkoism on Soviet agriculture, is written by G. N. Linnik and deals with aspects of potato growing. From this paper it can be gathered that certain planting procedures which Lysenko recommended for the purpose of avoiding excessive degeneration (Abbau) —a serious problem particularly in the South of Russia—have proven a "total fiasco" and have resulted in the "almost complete" extinction of certain early varieties which used to be widely grown in the country. The author warns that the entire potato culture in the Soviet Union faces a similar threat unless the procedures on which Lysenko has insisted are promptly and thoroughly revised.

Other information in Soviet literature indicates that the practical application of the "teachings" of Lysenko and his adherents have also caused serious losses of wheat and cotton. Although this information does not permit definite estimates, it seems conservative to assume that the losses which Russian plant industry has suffered by the adoption of Lysenkoist practices run at least into scores, and quite likely into hundreds of millions of rubles. Such losses do not represent a major disaster. However, in the case of the potato, a crop much more important in Russia than in the USA, they seem to come fairly close to one, and there can be no doubt that other major crops would have suffered a similar fate had Lysenko been able to stay in power. It is a guess, but a reasonable one, that this situation contributed to his fall.

At this date, it is impossible to tell whether Lysenko and Lysenkoism have lost their influence completely and for good. Since the Lenin Academy, the Soviet Union's central organization for agricultural research, is responsible not only for the management and development of the country's agriculture, but has also a decisive influence on its general agricultural policies, the presidency of the Academy was no doubt Lysenko's chief source of power. But Lysenko seems to have retained the directorship of the Genetics Institute of the Academy of Science of the USSR (the Russian "National Academy of Sciences," not to be confused with the purely agricultural Lenin Academy), as well as his membership in the Academy of Sciences itself. Since one of the assignments of this academy is the "idiological guidance" of all Soviet Russian scientists, Lysenko remains, at least on the face of things, a fairly influential person. Work based on his teachings has by no means been abandoned. Lysenkoist papers continue to appear in his own journal "Agrobiology" as well as in other periodicals.[4] However, under a regime which considers science solely as another means for improving the material situation (and the military power) of the country, it seems doubtful that a man who has done so poorly by this standard will resume a position of actual command.

[4] I. E. Gloushchenko, one of the most clever (and most vicious) followers of Lysenko, published a violent counterattack on Dubinin, Baranov and Hajinov in the *Bull. (Izvestiya) Acad. Sci. USSR., Biol. Ser.*, as late in summer 1956 (No. 3, p. 31).

NATIONAL SCIENCE FOUNDATION PREDOCTORAL FELLOWSHIPS

NSF has announced the award of 845 predoctoral graduate fellowships in the natural sciences and allied fields for the academic year 1957–58. The successful fellows were selected from 3028 applicants from the United States, Alaska, Hawaii, and Puerto Rico. Honorable mention was accorded 1391 applicants. Sixteen awards were made in Botany. In other biological fields the numbers of awards were: Zoology 64, Microbiology 16, Genetics 13, General Biology 2. The following are the botanists who received awards: Abbott, Rose Marie S. (Cornell); Bushnell, William R. (Wisconsin); Cooper, Charles F. (Duke); Cooperrider, Tom S. (Iowa); Elder, Carol-Ann (Wisconsin); Flaccus, Edward (Duke); Lovett, James S. (Mich. State); Lubell, Alice R. (Cornell); McCune, Delbert C. (Yale); Mansfield-Jones, Dorothy (Duke); Miller, John H. (Yale); Murashige, Toshio (Wisconsin); Purves, William K., Jr. (Yale); Raven, Peter H. (Calif., Berkeley); Stiller, Mary L. (Durham, England); Warden, John C. (Chicago). All will continue their study at the institutions at which they are now located, except Peter Raven, who will work at UCLA, and Mary Stiller, who will work at Purdue.

Early History of Biological Abstracts

H. H. M. BOWMAN
Toledo University

It is not now generally known that Biological Abstracts was originally published by the American Botanical Society. At several of its annual meetings prior to World War I there was talk of the need for abstracts of the increasing volume of American botanical literature.

In 1918 with the war going full blast, the annual meeting of the Society was held in Baltimore. Johns Hopkins, the University of Maryland and Goucher College were the hosts. The annual banquet was held at the Baltimore Country Club in suburban Roland Park. An important item on the program was a talk by Dr. H. H. Whetzel, the plant pathologist at Pennsylvania State College. Dr. Whetzel was a member of a committee appointed to launch or promote an abstracting journal which had been planned at the preceding meeting held in Toronto. He set forth a plan of financing the journal by getting gifts, subscriptions or subsidies from individuals or foundations. In his prepared speech he alluded to "a rich angel" who might, with proper treatment, be cajoled into doing something handsome for the proposed publication. He suggested that all of us members get on the bandwagon and ballyhoo to "advertise botany."

The officers of the Botanical Society in 1918 were William Trelease, President; Burton Livingston, Vice President; J. R. Schramm, Secretary; and E. W. Sinnott, Treasurer. Other active members were Professor B. M. Duggar, C. Stuart Gager, and L. R. Jones. These men being of a more conservative mind deplored the suggested methods of Dr. Whetzel and tried in brief talks following his speech to efface the commercialized theatrical approach to the problem which he advocated.

It was finally decided to sell bonds to the members of the Botanical Society and a Board of Control was set up with Forrest Shreve as chairman and Otis F. Curtis as Secretary. Lester W. Sharp of Ithaca was the Trustee. The Board was to issue $5,000 worth of ten dollar First Mortgage Chattel Bonds, covering five years and paying 6 per cent interest.

By March 1922, Dr. Sharp reported that Volume II of Botanical Abstracts had just appeared and the Board of Control had a debt of $5412.92 on its hands. He further stated that 500 bonds had been issued but that only 438 had been sold. The balance of the debt would be paid with money that had been collected on subscriptions to the Abstracts. He estimated that by 1923 the journal's income would warrant the retirement of 100 bonds. He said it was desirable to retire small blocks of the 10 dollar bonds or single bonds first and thus obviate the need for the Trustee to distribute a multitude of tiny interest checks.

In May, 1922, the Board of Control owed the Williams Wilkins Co. of Baltimore, its printer, the sum of $5936. Part of this had to be paid in 30 days and the balance of the debt had to be secured by a note at 6 per cent. The assets of the Board consisted of back numbers of the Abstracts valued at $7000. To get quick action the Board divided the membership of the Botanical Society into districts and the members selected districts in which to solicit funds. Dr. Bruce Fink, mycologist at Miami University at Oxford, Ohio, took Ohio as his area. Mimeographed letters of appeal were sent out under his signature to all the Botanical Society members in Ohio. Since I had been a member of the Society since 1913, and a resident of Ohio since 1919, and had been present at the launching of the Abstracts at the Baltimore meeting, I felt constrained to buy five bonds as well as keep up my subscription for the Abstracts. In June I ordered the bonds from Dr. Fink and in due time received them with a note from Donald Reddick of the Control Board. It stated his thanks for my prompt purchase and while his quota had not yet been reached he hoped to do so in 10 days.

This year I found the 5 bonds with the note from Dr. Reddick still attached, together with a copy of my order to Dr. Fink and the various reports of the Board of Control of Botanical Abstracts. I sent the entire packet to Dr. William Drew at Michigan State University as a historical exhibit of the vicissitudes of a scientific publication.

Botanical Abstracts did not long survive. Its outstanding bonds were repudiated and its assets taken over by a new organization called Biological Abstracts, which now enjoys a splendid circulation over the entire world and covers a much larger scope than did the original Botanical Abstracts.

SUMMER COURSE IN GENETICS OF FILAMENTOUS FUNGI

This new course has been added to the courses on microbial genetics during the summer at Cold Spring Harbor Biological Lab. and will be given from July 8–August 3, 1957, by R. W. Barratt, Dartmouth College, and E. Kafer, a member of the Cold Spring staff. The course, which will include both laboratory and discussion periods, will emphasize the following topics: Comparison of the genetics of a homothallic and a heterothallic fungus, the induction, detection, selection, and isolation of mutant strains. The analysis of the parasexual cycle in Aspergillus: formation of diploids, mitotic crossing over, haploidization. Linkage detection and mapping via single strands, tetrads, and by the parasexual cycle. Heterocaryosis: as a test for allelism, in parasexual cycle, control by incompatibility factors, nuclear ratios in heterocaryons. Enrollment is limited to 14; course fee is $100. Send inquiries to M. Demerec, Director, Long Island Biological Assoc., Cold Spring Harbor, N. Y.

ADVICES FROM THE SECRETARY

1. The 1954–1956 issue of the Society's Yearbook, Miscellaneous Publication 140, should have reached the membership during June. The membership list is corrected through February 15, 1957.

2. It would help the Secretary and be to the member's self-interest, if, in reportitng a change of address, he were to include a statement of rank or position, departmental or other affiliation and current research interest, should these be changed in any way.

3. The program for the Stanford meeting (August 25–29) will be published in the summer issue of the AIBS Bulletin which usually appears early in August. This will include programs of all plant science societies and information on field trips. Information on housing appeared in the April issue of the A.I.B.S. Bulletin. Be sure to bring your copy of the program with you to avoid having to BUY another.

4. Plan *now* to attend the annual dinner of the Society which will be held on Wednesday evening, August 28 about 6:30 p.m. Get your dinner ticket as you register.

5. Second "Nominating Ballots" were circulated to the membership early in June. Be sure to vote and mail your ballot to the Secretary (in the envelope provided) *before August 15, 1957.*

6. Be sure to include your expression of opinion with reference to *Abstracts* on the questionnaire circulated with the ballot and return to the Secretary with the ballot.

7. Members are urged to transmit any suggestions for improving the operation of the society to the Secretary who will bring them to the attention of the Council at the Stanford meetings. (Harold C. Bold)

"THE ROLE OF AGRICULTURE IN FUTURE SOCIETY"

The 75th Anniversary Symposium of the New York State Agric. Exp. Station, Cornell Univ., will be held at Geneva, N. Y. on October 4, 1957. The program will center upon this topic. Among specific discussion topics are: "Atomic Energy and the Future of Agriculture", "Agriculture and the Industrialization of Photosynthesis", "The Development of Future Food Crops", and "Food Processing and the Future of Agriculture". Governor Averell Harriman of New York will deliver an address. Complete program and registration blanks may be obtained from the Director's office, Geneva.

SECRETARY'S CHANGE OF ADDRESS

Harold Bold, Botanical Society secretary, has resigned his faculty post at Vanderbilt University to become Professor of Botany, University of Texas, Austin 12, Texas. Please note this address change and address all appropriate correspondence to him at Austin, beginning August 15, 1957. It is assumed that, in view of his spotless character, Secretary Bold will encounter no difficulty in obtaining both passport and visa.

PERGAMON INSTITUTE

Pergamon Institute has just been formed, with offices in England and in New York, as a non-profit organization for the purpose of making available to English-speaking scientists, doctors, and engineers from all United Nations countries translations of scientific papers written in Russian and published in Soviet Russia. A non-profit charge of $4 per 1000 words of translation is made. Persons interested in activities of this Institute and in securing translations of Russian scientific writings into English should address Capt. I. R. Maxwell, Director of the Institute, 4-5 Fitzroy Square, London W 1, England. The Ed. does not have the N. Y. address at this time.

RE-SEARCH

When, in the darkness, somehow has been brought
A spark to light the dim circumference
Of mankind's all-embracing ignorance,
By ceaseless striving struck from sober thought;
When those who live by learning's lamp have sought
To weigh all facts and count all evidence,
Yet guard humility and reverence—
Then, truly, as reSEARCH their work is wrought.
But what of those, who, plodding dull routine,
Split scientific hairs, not caring what they do,
Just so they add their wordy little lot
To that dead mass of academic rot
Which to the vulgar is as learning seen—
To call such REsearch gives it more than due.

—G. W. Martin

BOTANICAL TEACHING FILM

W. F. Loehwing, State Univ. of Iowa, suggests the addition of the following film title to Prof. Marie C. Taylor's list published in the April 1957 PSB: "Care and Preservation of Trees." This 16-mm. film, produced by the State Univ. of Iowa, and illustrating tree surgery and pruning, and fertilizer treatment of shade and ornamental trees, has a running time of 15 min. The film may be rented or purchased from Dept. of Visual Instruction of that university.

BUSINESS MANAGER'S PLEA

James Canright, Bus. Mgr. of Amer. Jour. Bot., reports that his supply of certain volumes and numbers of that Journal is exhausted, that he would like to purchase copies of these volumes and numbers from members of Botanical Society or other persons who wish to sell them: Vol 1 (1914); Vol. 2 (1915); Vol. 4 (1917); Vol. 5 (1918); Nos. 1–4, Vol. 7 (1920); Nos. 1–5, Vol. 27 (1940); Nos. 1, 2, 4, 10; Vol. 29 (1942); Vol. 30 (1943); Nos. 2, 3, 4, Vol. 33 (1946); Nos. 1, 2, Vol. 39 (1952); Nos. 1, 2, 4, 6, 10, Vol. 40 (1953); No. 2, Vol. 41 (1954); Nos. 1, 2, 3, 4, 5, Vol. 42 (1955); No. 1, Vol. 43 (1956). If you can help, write to Dr. Canright, Dept. of Botany, Indiana Univ., Bloomington, Ind.

New York Botanical Garden

William J. Robbins, Director of N. Y. Bot. Garden and Prof. of Botany, Columbia University, will retire this year. Dr. Robbins has been director of the Garden since 1937. Formerly on the faculties of Lehigh, Cornell, Alabama Polytechnic Inst., and Univ. of Missouri, he is noted for his investigations of problems of tissue culture, plant tumors, fungous nutrition, and antibiotics. A committee of the Board of Managers of the Garden, consisting of Dr. C. G. King, Mrs. Angela Place, and Mr. Arthur Anderson, has been appointed to select a successor to Dr. Robbins.

Arthur Cronquist has been appointed Curator, effective March 1957. He was assistant curator 1944–46, left the Garden to become asst. prof. at Univ. of Georgia 1946–48, then asst. prof. at State College of Washington 1948–51. The following year he was technical adviser to the Belgian Govt. in connection with a pedobotanical survey of parts of the Belgian Congo under the auspices of the U. S. Govt. Dr. Cronquist's special interests are Compositae, western American flora, and general plant taxonomy and phylogeny.

Richard M. Klein has been appointed the Alfred H. Caspary Curator, effective March 1957. Dr. Klein, who became a member of the Garden staff in 1952, was appointed asst. curator in 1955, associate curator in 1956. His recent work has centered upon crown gall phenomena. Klein will devote his efforts to the study of plants in relation to the health and well-being of man; this duty will involve cooperative work with the Rockefeller Institute for Medical Research.

PERSONAL

Dr. Ping-Ti Ho, Dept. of History, U. of British Columbia, Vancouver, B. C., Canada, author of a paper in Jan. 1956 PSB on "American Food Plants in China", reports that he now has available some reprints of his paper "Early-Ripening Rice in Chinese History" (from Economic History Review, vol. 9, no. 2), about which some Bot. Soc. members wrote him a year ago. Dr. Ho reports further that he has misplaced the list of names of these members and suggests that they write him again if they would like reprints of that paper.

Sir William Wright Smith, Regius Keeper, Royal Botanic Garden, Edinburgh, Scotland, and a corresponding member of Bot. Soc., died in December 1956 at the age of 82. Sir William was an authority on the plant taxonomy of the Sino-Himalayan region.

Bradley Moore Davis, a life-member of Bot. Soc. and formerly member of the botany departments of Univs. of Chicago, Pennsylvania, and Michigan, died at his home in Portland, Oregon, on March 13, 1957.

H. H. M. Bowman, Dept. of Biology, Univ. of Toledo, retired in June after 38 years at that institution. Bowman taught earlier at Franklin & Marshall, Univ. of Penn., and Heidelberg. He was also research associate at Carnegie Institution, inspector in Bur. Pl. Ind., and visiting professor at Western Reserve.

Mason E. Hale, Dept. of Biology, West Virginia Univ., will assume a new position, that of Plant Taxonomist (Lower Plants) at the Smithsonian Institution, commencing July 1st.

F. C. Steward, prof. of botany at Cornell, has been named a Fellow of the Royal Society, England, in recognition of his distinguished investigations of salt absorption, plant growth, and metabolism.

James F. Ferry, prof. of plant physiology, Auburn Polytechnic Institute, Alabama, has resigned that post to become a staff editor of the McGraw-Hill Book Co. As of June 10, his address will be 10 Elliewood Ave., Charlottesville, Virginia.

Donald P. Rogers, who has been a Curator at New York Botanical Garden, has resigned that post to become Professor of Botany and Curator of the Mycological Collections at the Univ. of Illinois, effective Sept. 1, 1957. Rogers will have complete charge of the teaching of mycology and of graduate research in that field at Illinois.

Katherine Esau, prof. of botany, Univ. of Calif., Davis, has been elected to membership in the National Academy of Sciences.

At the meeting of the SE section of Bot. Soc. at Univ. of Florida on April 19, Elsie Quarterman, Assoc. Prof. of Biology at Vanderbilt Univ., was elected section chairman for 1957–58. The meeting was followed by field excursions to Sapelo Island, Georgia, and to Highlands, N. Car.

Francis R. Trainor has been appointed instructor in botany, Univ. of Connecticut, Storrs, Conn. for 1957 and begins his duties in July with research in phycology at the Univ.'s Marine Station, Noank, Conn.

Gina Arce, at present instructor in biology, Vanderbilt Univ., is leaving that post to become instructor in biology, Fresno State College, Fresno, Calif., effective Sept. 1957.

A. G. Vestal, ecologist in the Dept. of Botany, Univ. of Illinois since 1929, retired in June. Vestal, prior to his joining the U. of I. faculty, taught at Univ. of Colorado, Stanford, and Eastern Illinois State Normal School. Vestal's work has centered mainly upon grassland ecology, soils, and ecological bibliography. Vestal's successor will be Lawrence Bliss, who received his Ph.D. from Duke in 1956 and who has taught during this past year at Bowling Green State Univ. (Ohio). Bliss will join the U. of I. faculty in Sept. 1957 as instructor in botany; he will teach courses in ecology and supervise the work of graduate students in plant ecology.

William A. Brun, Dept. of Botany, N. Car. State College, has resigned that post to become a member of the staff of Federal Experiment Station, Mayaguez, Puerto Rico.

CORRECTION

The film "The Great Story of Corn", included in the film list published in the April 1957 number of PSB, is distributed by Farm Film Foundation, not Farm Field Foundation, as reported in that list. Producer of the film is Funk Bros. Seed Co., Bloomington, Ill.

COMMUNICATION

(The following letter from a distinguished corresponding member of Bot. Soc. reached the editor's desk a few weeks ago.)

April 11, 1957

Dear Dr. Fuller:

In several numbers of Plant Science Bulletin it has been discussed, how Biology should be taught. Through 40 years I have taught Plant Physiology on the base of the following view.

The fundamental principle of Biology is that organisms are living; therefore, the fundamental point in teaching Biology is to explain to students what it means that organisms are living.

The answer is that an organism is a dynamic totality (entity), the existence and the development of it is maintained by a series of functions that are mutually correlated. Every function takes place as it must take place if the mature complicated organism shall arise. In other words every function (photosynthesis, respiration, geotropism, etc.) has a definite significance as to the existence and development of the organism.

Biological teaching must therefore cover two sets of problems, a precise description of the functions (in relation to the morphological and anatomical structure) and a demonstration of the significance of the function as to the life of the organism.

The real difficulty of this view on Biology is that the conclusion will be that living organisms are quite different from non-living things. Some Biologists don't like this conclusion, but it is true.

Sincerely yours,
/s/ P. BOYSEN JENSEN

Prof. Dr. P. Boysen Jensen
Copenhagen N
Denmark

LILLY GRANT TO DePAUW UNIVERSITY

The Lilly Foundation has given DePauw $15,000 to be used for expansion of the DePauw herbarium. T. G. Yuncker, professor-emeritus and Curator at DePauw, has received a Fulbright grant for travel, collecting, and study in Jamaica during the winter of 1957-58.

AMERICAN JOURNAL OF BOTANY

W. C. Steere, on the verge of plasmolysis from chores of editing in addition to those of graduate-deaning and botany-professoring at Stanford, is giving up the editorship of Amer. Jour. Bot. on Sept. 1, 1957 and will be succeeded by H. J. Fuller, 203 Natural History Bldg., Univ. of Illinois, Urbana, Illinois. The Editor of PSB, on behalf of all Bot. Soc. members, extends gratitude to Dr. Steere and sympathy to Dr. Fuller. All manuscripts and correspondence concerning mss. should be addressed to the new Editor after Aug. 15, 1957.

HOBLITZELLE NATIONAL AWARD IN THE AGRICULTURAL SCIENCES

This award was established in 1950 to provide recognition of outstanding contributions to American agriculture through research. The award, consisting of $5,000 in cash and a gold medal, is presented every 2 years to a person or group whose contribution to American agriculture is adjudged the most important for the preceding 4 years. All scientists working in the U. S. and its territories are eligible. Results of research to be used as basis of the award must have been published. For purposes of the award, the agricultural sciences are considered to include agronomy, animal husbandry, bacteriology, biochemistry, botany, and related sciences which serve agriculture. Nominations for the award must reach the Permanent Secretary, The Hoblitzelle Awards, Texas Research Foundation, Renner, Texas, not later than Oct. 1, 1957. Presentation will be made at the Annual Field Day and Awards Dinner of Texas Res. Foundation at Renner on May 21, 1958.

NSF RESEARCH GRANTS

Next closing date for receipt of research proposals in life sciences is Sept. 15, 1957. Proposals received prior to that date will be reviewed at the fall meetings of NSF's advisory panels and disposition will be made approximately 4 months after closing date. Proposals received after Sept. 15 will be reviewed following the winter closing date, Jan. 15, 1958. In addition to funds for support of basic research, limited funds will be available during fiscal year (July 1, 1957–June 30, 1958) for support of research at biological field stations. Address inquiries to National Science Foundation, Washington 25, D. C.

EDUCATIONAL NOTE TO REMEMBER

The following excerpt from the SCIENCE editorial of December 7, 1956, is printed with the permission of Graham DuShane, editor of that journal and author of the editorial: "The interim report of the President's Committee on Education makes the flat statement that 'This country will never tolerate the nurturing of an educational elite.' It is obvious enough that this country tolerates the nurturing of the elites of stage and screen and sport. Why not of the intellect? But this is more a question of quality than a question of status. The population bulge offers the colleges and universities a chance to be more highly selective than ever before, a chance to turn away from their doors the dull, the indolent, and the indifferent, to make higher education a privilege for those qualified for intellectual accomplishments rather than a right for nearly all who are capable of finishing high school." Thank you, G. DuS., for those significant words and for the permission to reprint them.

EDITORIAL

The past decade has brought to science in the U. S. A. more organization and more support on a national level than have been achieved at any other time in our history. This increased organization and support have produced important benefits for science: more appreciation by intelligent laymen of the nature of science, of its methods, and of its significance in both the intellectual and practical aspects of human life; wider recognition that pure science is both seed and fertilizer of the applied sciences, with resultant augmented financial support of individual and group research in these basic sciences; greater emphasis upon the subject-matter training of teachers of science and concomitant financial subsidization of this objective, for example, through NSF's summer institutes for science teachers. Further, this expanded organization of science has brought intramural benefits to science: more effective cooperation among individual scientists and among scientific groups in research and educational matters; increased participation of scientists in different fields in the study and solution of problems of mutual interest; increased appreciation of the important role of science in matters political, social, and economic. Thus, the construction of machinery on a national plan and the operation of that machinery for the advancement of science have had obvious, significant, and pervasive influence upon scientific work in our country.

That the organization of science, like that of any other discipline, may have disadvantageous effects as well as beneficent influences should not be overlooked in our enthusiasm for the advantages which such organization has brought to science and scientists. The major liability of such organization and support of science may well lie in the development of a bureaucracy of science, which, like other bureaucracies, may lead to the worship of size, to blunted senses of discrimination, to preferences for group endeavors rather than for individual work, for the "safe," hail-fellow-well-met, compliant scientist rather than for the individualistic, lone-wolf, often iconoclastic scientist.

The April 1957 PSB reported the creation of two national panels, one on Systematic Botany, the other on Parasitism Courses. These panels (plus another national committee on the content and organization of introductory courses in biological sciences) have objectives which appear to be intrinsically laudable. A release about these panels states "The panel would make a wholly fresh start in designing the course, putting present practice aside as far as possible. It would first consider what function the course would serve, what understanding and information students who take the course—or might do so if it were properly developed—need." Explicit in the charge of each panel is the desirable aim of keeping science teaching abreast of the latest research results. A further section of the statement announces that each panel "would define topics to be included and the place and weight assigned to each, noting what time-worn material may be eliminated, what sequential material will most effectively impart a coherent picture of the subject as an area of systematic knowledge and, especially, as a sphere for continuing inquiry. . . . Finally, the panel would publish its report, exposing it to professional criticism and making it available for the guidance of teachers and authors. The panel would then disband, for the objective is not to replace one orthodoxy by another, but rather to initiate what should become a continuing process of periodic re-evaluation of courses."

Wholly laudable indeed, at least at first glance; but there is another side of this coin. What is "properly"? What of the conformity in teaching methods and in emphasis which these recommendations might engender? What of the extremely varied student bodies and student interests and student needs in the wide spectrum of collegiate institutions in our country? And what is "time-worn material"? What of "putting present practices aside"? To what extent might this amount to a denial or ignoring of the wisdom and experience of superb teachers of the past? Does this suggest the worship of novelty because it is new? To what extent might the published reports of such panels be simply suggestions, to what degree might they become strong recommendations of the character of a new scientific teaching decalog?

The Editor is in no way criticizing the work of the present panels (it would be indeed insane to do so, since the reports of these panels have not yet been published!) nor the respected scientists who comprise them. He does not imply that the reports of these panels will embody any of the undesirable features suggested by the questions of the preceding paragraph. Rather, the Editor, on the basis of his experience with bureaucratic growths in governmental services and in assorted academic bodies, wishes merely to point out that such commissions, panels, and committees of national scope *may*, depending in large measure upon their personnel, contain the seeds of bureaucracy, if they and their productions are not carefully and continuously observed and evaluated. Thus, in his conviction that science must be kept as free as possible from the intrusions of bureaucracy into its domain and administration, the Editor has written this editorial to:

1. Remind members of the Botanical Society of America (and other scientists who may read this) that increased complexity of organization and increased centralization of policy-making efforts lead often to increased worship of conformity and to the birth of powerful and unwieldy bureaucracies.

2. Urge them to read the reports of these and other panels and committees set up by scientific bodies and national scope with critical objectivity (as, indeed, they have been invited to do by the official statements announcing the work of these panels) and with continuing

attention to the possibility that the activities of such bodies may come to be regarded as sacrosanct, as a way of life which all "right-thinking" scientists should follow.

3. Keep a watchful eye upon the personnel of forthcoming panels to insure that the control and work of such bodies remain in the hands of able and respected scientists and do not fall into the grasp of professional administrators and promoters, who may assume the protective coloration of scientists and who may suffer from what Dostoevski, in his remarkably perspicacious way, called "administrative ecstasy."

4. Suggest that they keep in close contact with officers of their respective scientific societies to make certain that these officers maintain a similar watchfulness.

5. Read Chapter 17, "The Bureaucratization of the Scientist," of William Whyte's remarkably penetrating and literate *Organization Man*.

NEW BOOKS

PLANT CLASSIFICATION, by Lyman Benson (D. C. Heath, 1957, $9). This beautifully written, beautifully illustrated, beautifully manufactured book is a notable contribution to botany, one for which both author and publisher deserve fulsome praise. Primarily a thorough and discriminating treatment of plant taxonomy, with brief but penetrating ecological and geographical overtones, it is a volume which should be on the shelves of every professional botanist and of every graduate student who will face a doctoral examination in botany. The Editor knows of no other single volume which would be so useful in preparing for graduate examinations in the taxonomy and morphology of plant groups. The book will also find wide use as a textbook, especially in advanced courses in taxonomy.

MARINE ALGAE OF THE NORTHEASTERN COAST OF NORTH AMERICA, by William Randolph Taylor (U. of Mich. Press, revised ed., 1957, $12.50). The Editor has not seen this revision, but he has seen the first edition and he knows Dr. Taylor and his work. Enough said!

BIOGEOGRAPHY, by Pierre Dansereau (Ronald Press, 1957). This valuable work treats the subjects of plant and animal ecology, with background material from the fields of genetics, anthropology, and the effects of the human species upon the ecology of plants and animals. An unusually fine glossary completes the work.

MEDITERRANEAN PLANTS FOR AMERICAN GARDENS

Over a four-month period, from March until July 1957, Dr. Frederick G. Meyer, on leave of absence from the Missouri Botanical Garden, St. Louis, visited botanical gardens, private estates, nurseries and experiment station in Portugal, Spain, southern France, Italy, and England in search of kinds of ornamental plants, especially for the southern areas of the United States. This Mediterranean expedition is part of an introductory program for ornamental plants sponsored by Longwood Gardens, Inc., Kennett Square, Pennsylvania in cooperation with the Plant Introduction Section U.S.D.A., Beltsville, Maryland. The objective of the present trip was to introduce not only fresh "germ plasm" of plants already in cultivation in the United States but also kinds of plants lost to cultivation and others essentially unknown in this country as garden plants. This kind of plant introduction program carries with it many practical applications on a long-term basis in view of the tremendous interest in home gardening now prevalent in the United States. Several hundred collections have been sent to the United States by Dr. Meyer as a result of his investigations in various Mediterranean countries. (F. G. MEYER)