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applications for biological research projects leading to the disbursement of about $4,000,000 in the year. The total budget and contracts of the N.R.C. amount to about $8,500,000 yearly. Dr. Bronk also spoke of the Research and Development Board and the proposed National Science Foundation, and made it clear that their functions would not overlap those of the N.R.C., but instead would supplement the work of the latter. He spoke also of a problem for the future that is of particular concern to all scientists, namely, the need for research on the problem of the tremendous volume of scientific publication and the consequently difficult dissemination of the results of scientific research. There is a crucial need for a committee to work on this problem of adequate abstracting and indexing.

A proposal was made to the Division by Dr. Walter C. Russell that each society represented be asked to appoint a committee to make proposals to the N.R.C. of desirable activities for it to undertake, keeping in mind that the N.R.C. is not heavily endowed but must find support for its program from government, industry, or non-profit organizations with large funds. This seems most worth while, and is recommended to the Genetics Society for consideration.

Signed: BENTLEY GLASS
Representative of the
Genetics Society
1947-1949

President T.M. Sonneborn, as the representative of the Society on the Editorial Board of Genetics, proposed that the Society furnish Genetics with 1350 lithoprinted copies of the abstracts for binding with a subsequent issue of Genetics. A motion to adopt this proposal was made and seconded. A substitute motion, that the abstracts should be printed in the Records of the Society, but not in Genetics, was not carried. The original motion was approved.

H.B. Glass gave an account of the work of the Committee to counteract antigenetics propaganda, much of which is contained in the following report of the Committee.

Report of the Committee to Counteract Anti-Genetic Propaganda

Because it could not be said to speak officially for the views of the Genetics Society as a whole, the Committee to Counteract Anti-Genetics Propaganda has limited itself to the activities of its individual members. The Committee has had no formal meeting, because of the impossibility of getting together, since one member (Dobzhansky) was in Brazil until recently. Collaboration has, therefore, involved a very considerable correspondence. The members of the committee have published severally in the past year the following publications on the Lysenko controversy:

R.C. Cook

1. Walpurgis Week in the Soviet Union. The Scientific Monthly, 68: 367-372. June, 1949.
2. Lysenko's Marxist Genetics: Science or Religion, J. Hered., 40: 169-202. July, 1949.
3. Lysenko's Brother Escapes to the U.S. J. Hered., 40:251 September, 1949.

Th. Dobzhansky

1. Marxist Biology, French Style. (A review of Biologie et Marxisme, by Marcel Prenant), J. Hered., 40:78-79. March, 1949.
2. The Suppression of a Science. Bull. Atom. Scientists, 5:144-146. May, 1949.

H.J. Muller

1. The Destruction of Science in the U.S.S.R. Sat. Rev. Lit., 31:13-15, 63-65. December 4, 1948.
2. Back to Barbarism — Scientifically. Sat. Rev. Lit., 31: 8-10. December 11, 1948.
3. Genetics in the Scheme of Things. Proc. 8th Int. Congr. Genetics, pp. 96-127. 1949.
4. It Still Isn't a Science. A Reply to George Bernard Shaw. Sat. Rev. Lit., 32: 11-12, 61. April 16, 1949.
5. The Russian Counterrevolution against Biological Science. (A review of Conway Zirkle's "The Death of a Science in Russia"), New York Herald Tribune. December 11, 1949.

Bentley Glass

1. Dialectical Materialism and Scientific Research. (A review of "The New Genetics in the Soviet Union," by P.S. Hudson and R.H. Richens). Quart. Rev. Biol., 23:333-335. Dec. 1948.
2. The Science of Biology Today, by Trofim Lysenko. A review. Science, 109: 404-405. April, 1949.
3. Science and Freedom (in press).

The Committee has also been active in securing suitable publication of informative articles written by others on Soviet science, the relation of politics to science, or the importance of scientific freedom. First of these was the publication in Science of the speech by Kaftanov, Commissioner of Higher Education in the U.S.S.R. (In support of Michurin's Biological Theory in Higher Institutions of Learning, Science, 109:90-92. 1949). This was submitted by Muller: and the Chairman of the Committee, due to his position on the Editorial Board of the A.A.A.S., was able to assure its publication. The Chairman of the Committee was also able to assure prompt publication of the paper by Richard Goldschmidt, "Research and Politics," (Science, 109:219-227. 1949). There was more delay in the publication of the Statement of the Governing Board of the A.I.B.S. (Science, 110:124-125. 1949), because of opposition based on the reluctance of some individuals to the

further airing of the controversy and a fear on their part that this might lead to even further worsening of the relations between political authorities and scientists elsewhere. The view that an official statement of an organization representing the great majority of biological scientists in the United States ought in any case to be published in such an organ as Science eventually prevailed, after the combined efforts of R.E. Cleland, Chairman of the Governing Board of the A.I.B.S., and of the Chairman of the present Committee.

The Committee has considered in correspondence how the publications dealing with the attack on genetics might be more widely circulated. In the absence of any funds at the Committee's disposal, the matter has rested with individual members to pay for and distribute reprints of their own contributions to the subject. Any future Committee of the Genetics Society to deal with these matters might well be given limited funds for the cost of obtaining and distributing such reprints more widely.

The Committee would like to call the attention of the members of the society to two excellent b ooks on the situation which have recently been published. These are Julian H. Huxley's "Heredity East and West" (Schumann, $3.00) and Conway Zirkle's "The Death of a Science in Russia" (University of Pennsylvania Press, $3.75). In addition, the full text of the 1948 controversy in Moscow has been published in English by International Publishers, New York ($5.00), acting for the Russian authorities, entitled "The Situation in Biological Science".

The members of the Committee were not in unanimous agreement upon all points of their policy and procedure. For example, in connection with the case of Dr. Spitzer, a chemist, not on tenure, who was dismissed from the faculty of Oregon State College after having written a letter to Chemical and Engineering News in support of Lysenko, the Committee was unable to agree upon a statement to be made public. This was largely due to the multiple nature of the issues which investigation of the case showed to have been involved, since it appeared that the letter concerning Lysenko had not actually been the main ground for dismissal.

In spite of these differences of opinion within the Committee, it has been questioned whether the Committee has been sufficiently representative of the Society as a whole in opinions upon the questions at issue. A new Committee ought to be clearly instructed regarding its functions and limitations of power. In particular, it would seem to be desirable for the Genetics Society to express clearly whether a majority feels that it is important to keep up a vigorous program of education of the public concerning the attacks which have been and are continuing to be made on genetics, or whether it is their opinion that these attacks are more apt to subside or fail if they do not participate. The Committee has definite information that the attack on genetics has

during the past year assumed disastrous proportions in the Soviet satellite countries and in the Soviet zone of Germany, that pressure against genetics is being intensified by the Communist Party in Western countries, and that many educated persons are being influenced thereby.

This issue cannot be evaded. Like the atomic physicists, whose Bulletin has featured the genetics controversy during 1949, we are right in the middle of the greatest battle of our time for freedom of the human mind. All the tricks of a powerful and and sometimes devilishly effective propaganda machine are being and increasingly will be, brought into play to discredit genetics. The Society should give urgent consideration to the course of action it should follow in this unique, and most serious situation.

Robert C. Cook
Theodosius Dobzhansky
H.J. Muller
Bentley Glass, Chairman

It was moved and seconded that a committee of nine members including the Executive Committee be appointed for a period of one year and that this committee be empowered to speak and act for the Society on matters of public concern in which the Society has a vital interest.

After considerable discussion of this motion, it was moved and seconded that the motion be tabled until the annual meeting in 1950. Motion lost.

An amendment to the motion was then moved and seconded, that the committee carefully consider alternate proposals with regard to provisions for a committee to speak for the Society in matters affecting the freedom of science and report a definite plan for consideration at the next meeting in September. Until this meeting the committee should not speak for the Society; carried. The original motion was then passed as amended.

The following motion of W.R. Singleton was seconded and carried; that the Genetics Society of America make plans for celebrating in 1950 a half century of progress in the science of genetics; and that a committee be appointed promptly to execute such plans. The year 1950 might well be called the Golden Jubilee year or some other appropriate designation. A part, although by no means all, of such a celebration would be a commemorative program at the 1950 meeting. This should be planned in conjunction with the Program Committee for the 1950 meeting.

It was moved by H.H. Plough that the Society extend a vote of thanks to the local representatives for the New York meetings, Drs. A.E. Mirsky and A.W. Pollister, for their efficient efforts in making these meetings a success. Motion was seconded and carried by acclamation. Meeting adjourned.

M.R. IRWIN, Secretary.

Mutation after Fifty Years -- L.J. Stadler, University of Missouri

4:30 p.m., Ohio State Museum, Large Auditorium, The Heritage of Mendel -- Hugo Iltis, Mary Washington College

Tuesday Evening, September 12

8:00 p.m., Ohio State Museum, Large Auditorium, Joint Session with the American Society of Human Genetics

Old and New Pathways in Human Genetics -- L.H. Snyder, University of Oklahoma

Wednesday Morning, September 13

9:00 a.m., Ohio State Museum, Large Auditorium, The Physical Basis of the Gene, L.C. Dunn, Chairman

The Chemistry of Chromosomes and Nuclei -- A.E. Mirsky, Rockefeller Institute for Medical Research

Cytochemical Measurements in the Study of the Gene -- - T. Caspersson and Jack Schultz, Karolinska Institute, Stockholm

Genetics and Immunology -- M.R. Irwin, University of Wisconsin

Wednesday Afternoon, September 13

1:30 p.m., Ohio State Museum, Large Auditorium, The Physiology of the Gene, M. Demerec, Chairman

Chemical Genetics -- G.W. Beadle, California Institute of Technology

Remarks on Cell Heredity -- Boris Ephrussi, University of Paris

Genetic Studies in Bacteria -- Joshua Lederberg, University of Wisconsin

The Role of the Genes in Cytoplasmic Inheritance -- T.M. Sonneborn, Indiana University

was found that the incidence of the tumor phenotype is controlled primarily by a recessive or semidominant factor located in Chromosome 2. The tumor incidence was 39/283 when chromosome 2 from the tumor stock was homozygous and 1/266 when this chromosome was heterozygous in one experiment. The daily and the total tumor incidence was higher in females than in males from the same cultures. The data suggested a decreased incidence of tumors in crowded cultures. The percentage of flies bearing tumors decreased when supplementary live yeast was not added both to the stock medium and a smaller amount of stock medium for which brewers yeast was omitted. When a constant number of larvae was given diminished nutrition for different numbers of days, there was a decrease in incidence with an increased length of starvation. For example, 317 of 434 flies had tumors when given optimum nourishment, but only 145 of 417 had tumors when the available yeast was decreased for 6 days.

HIMES, M.H., Columbia University, New York, N.Y.: Studies on the chemical nature of "sticky chromosomes". — It has been stated by several cytologists, in particular Darlington, that stickiness of chromosomes is caused by depolymerization of desoxyribose nucleic acid (DNA). The author has sought evidence for the validity of this statement by using cytochemical methods for detecting differences between normal chromosomes and both genetically and experimentally induced sticky chromosomes. The material consisted of microsporocytes of Zea mays homozygous for the sticky gene and Allium cepa root tips treated with ethylene glycol and hot water. Two cytochemical tests for depolymerization of DNA were used. The first consisted of photometric determinations of the amounts of methyl green and Feulgen dyes combined with the chromosomes. It has previously been shown that the relative stainability by these two dyes depends on the degree of polymerization of DNA. No difference in methyl green - Feulgen ratios was found where differences in chromosome morphology occured, indicating no depolymerization of the type that characterizes degenerating nuclei. The second method involved a study of the relative rate of loss of DNA stainability following three different treatments - hot water, HCl and trichloracetic acid hydrolysis, and desoxyribonuclease digestion - which are known to cause depolymerization of DNA in vitro. The loss of methyl gree and Feulgen staining capacity after these treatments was the same in normal and sticky chromosomes. No evidence was found, therefore, to support Darlington's statement that stickiness of chromosomes is due to depolymerization of DNA.

HINTON, T. and J. ELLIS, Amherst College, Amherst, Mass.: A nucleic acid requirement in Drosophila correlated with a position effect. A comparative study was made of the nutritional requirements of two strains of Drosophila melanogaster grown under aseptic conditions on a chemically defined medium. The two strains differ genetically in that one (Oregon-R) has the wild-type gene sequence while the other (Inver-

McDONOUGH, E.S. and MARY ROWAN, Marquette University, Milwaukee, Wis.: A study of the effects of crystalline desoxyribonuclease on the salivary gland chromosomes of Drosophila Melanogaster. Desoxyribonuclease, free from proteolytic activity, crystallized and assayed by Dr. Michael Laskowski after the methods of Kunitz, was used in the study. The enzyme solution, containing 1 microgram of crystalline desoxyribonuclease per ml. in 0.2M. borate buffer pH7, was made 0.025M in respect to $MgSO_4$. Smeared chromosomes were incubated in this solution for varying lengths of time at 37°C. Chromosomes treated with buffer alone or with boiled enzyme-buffer were used as controls. Those digested for 1-15 minutes showed a gradual reduction in content of desoxyribonucleic acid as measured by the intensity of the Feulgen reaction, while controls gave a brilliant stain even after 2 hours treatment. Treatment for 15 minutes or longer resulted in Feulgen negative chromosomes. Examination with a phase-contrast microscope showed that the structural continuity was not destroyed and banded regions were still present in chromosomes exposed to the enzyme. Chromosomes treated for as long as 2 hours were similar in appearance to untreated ones; the bands seemed to be as numerous and at least as distinct. The granule-like structures, which appeared within the Feulgen-positive bands of control chromosomes, were discernible after digestion with desoxyribonuclease. These experiments add to the growing mass of evidence that desoxyribonucleic acid in itself is not an essential structural component of the chromosome and brings into question in this regard its relation to the gene.

McQUATE; J.T., Indiana University, Bloomington, Ind.: Chromosome loss occasioned by ultraviolet treatment of Drosophila spermatozoa. Adult males with a marked Y-chromosome, "$y^3.Y^1$", were treated with filtered ultraviolet light (ranging from 2537 to 3340Å from a Hanovia lamp, and mated to females containing achaete (ac^3). As $y^3.Y^1$ contains the normal allele of achaete, the ac^3 in the regular F_1 males was covered. Among a total of 19,309 F_1 males 23 achaete exceptions were obtained which were sterile, while there was only one sterile achaete exception among 8,046 control F_1 males. This difference has less than 2% probability of occurrence by chance. Such males represent the loss of the paternal X or of all or part of both arms of $y^3.Y^1$. This must have been caused either by breakage leading to acentric and dicentric chromosomes, or by lagging. However, breakage of the $y^3.Y^1$ chromosome with "healing", so as to form surviving chromosomes with a terminal deletion, thus lacking y^3, was not induced to an appreciable extent. This would have given fertile achaete exceptions, since Y^1 would have been present. There were only two of these among the F_1 males from treated fathers and one among the controls — approximately 0.01% in both cases. Hence breakage if induced is usually followed by union of broken ends. As an index of the treatment's genetic effectivness F_1 females were tested for X-chromosome lethals. Eighty-eight lethals were detected in 7,530 treated chromosomes (1.2%); in the control