

EXHIBITS

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The readiness with which geneticists took part in exhibits indicates that exhibits will not remain a special feature of the sixth congress but that they may appear again at future congresses as a prominent part of future program. Our experience in organizing exhibits may then be of help to the organizers of congresses. With this in mind there is here given a short review of our experiences.

The organization committee of the Sixth International Congress of Genetics, in carrying out the proposal to make exhibits a special feature of the congress, appointed a committee on exhibits, the chairman of the committee being a member of the executive council. On February 20, 1931, a meeting of the exhibits committee was held with CLELAND, DEMEREC, LAUGHLIN, RANDOLPH, RICHEY, SATINA and WRIGHT attending. At this meeting the scope of exhibits was decided upon and the organization plan outlined. It was agreed that an attempt be made to bring together an extensive collection of characters and types of organisms used in genetic investigations, to show methods employed in genetic research, and to present the results obtained. It was decided that exhibits be arranged under organisms and that the organization be decentralized, the responsibility for each section being given to one or more persons interested in the material which this particular section was to represent.

The work on organizing exhibits began immediately after the meeting of the exhibits committee. Requests were sent to a selected group of geneticists asking them to take the responsibility of organizing the different sections of exhibits. All those who accepted were requested to prepare as soon as feasible a tentative outline of exhibits planned for their section. These outlines were circulated among the members of the exhibits committee and the members of the council for suggestions and criticism. In October, 1931, the exhibits number of the *Genetics Congress Quarterly* was published giving a list of exhibits organized up to that time and asking geneticists to suggest any improvements of or additions to the list. Several suggestions were received.

During the summer of 1931 several tests were made in the garden to determine the best planting time for several plants which were to be grown for exhibits. Also extensive tests were made to find out most suitable grass composition for the paths between the exhibit plots.

In October information about exhibits was sent to all those in charge of exhibits giving details as to garden and laboratory facilities, micro-

scopic equipment, and the arrangement for publishing the descriptions. Instructions were also given regarding the exhibit signs and the shipment of exhibit packages. Requests were made that seed for live plant exhibits, titles for large signs and an estimate of the number of microscopes needed be sent as soon as feasible. April 20 was set as the last date for the submission of exhibits manuscripts and statements regarding the wall space and the table space requirements.

When it became known that about 200 pages of the second volume of the Proceedings would be available for the descriptions of exhibits it became essential to organize the material so as to conform with the space allotted. The space was therefore apportioned between different sections according



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to the number of individuals taking part in exhibits of the respective sections. In March, 1932, letters were sent to those in charge of sections notifying them about the space in the Proceedings allowed for descriptions of their exhibits.

The work on setting up garden exhibits began in February, 1931, when the *Oenothera* seed was planted. From that time until the end of the congress meetings, garden exhibits required continuous attention, thought and labor. This was freely contributed by R. A. EMERSON and M. M. RHOADES; the latter especially deserves much credit for the success of the garden exhibits since he was in charge and spent much time and effort on this feature.

The chairman of the exhibits committee spent July and August at Ithaca. During that time estimates of the space requirements received from persons in charge of sections were worked over, and assignments of exhibits to rooms were made; copies of the plan of each exhibit room were prepared and sent to all persons organizing the exhibits; main signs for indoor ex-

hibits and all signs for garden exhibits were made; demonstration periods for exhibits were arranged; a classified and a chronological list of exhibits was prepared for the program. To facilitate the installation of exhibits, a graduate student was assigned to every room to help the exhibitors. Tools and a supply of thumb tacks, string, wire, hooks, etc., were available in each room.

Exhibits were open during the whole session of the congress. In addition each exhibit was demonstrated, usually twice, during a period stated in the program by either the exhibitor or a person familiar with the material.

In spite of the large number of microscopes on hand not enough instruments were available to go around. The instruments, therefore, had to be transferred daily to the rooms where the demonstration of exhibits was held that particular day. The responsibility for the efficient handling of the microscope situation rests with L. F. RANDOLPH who had charge of the optical equipment.

Upon application, the commissioner of customs recognized the congress as an educational institution which gave us a right to import for exhibit purposes, under bond, dutiable articles. As a special courtesy toward the members of the congress, customs officials of the Port of New York took special precautions in examining exhibit packages brought as personal baggage. These arrangements facilitated greatly the handling of foreign exhibits.

Exhibit packages which arrived early were opened and, whenever feasible, the exhibits were put up. The majority of exhibits were taken down and packed by the exhibitors.

Extensive exhibits on fruit genetics, breeding and cytology were organized by R. WELLINGTON and were shown at the NEW YORK AGRICULTURAL EXPERIMENT STATION at Geneva in conjunction with the meetings of the fruit and vegetable breeding section of the congress.

One of the main advantages of exhibits is the broadening influence they have on the program of a scientific congress by making it possible to include material which it is not feasible to handle by platform papers. This is especially true where summaries of extensive problems are shown including material already published. Exhibits, in such a case, give a greater degree of freedom and make the presentation more complete. They may prove an efficient means of relieving the program of short papers which are usually so numerous as to make it impossible for any one person to hear everything he is interested in. Another important function of exhibits is the opportunity they afford to the members of the congress to become familiar with the

material used in research. This is of special importance where live plant exhibits and cytological exhibits can be arranged.

Exhibits also stimulate informal discussion which tends to bring out problems which otherwise might pass unnoticed. During the congress exhibit rooms served as convenient meeting places for congenial gatherings using the material shown in exhibits as a basis for discussion. This was especially evident on Sunday when exhibit rooms and the garden were well filled by groups of interested spectators. Finally, the exhibits offer the opportunity for personal contacts as does no other function of the congress. Even a most



A LIVING "CHROMOSOME MAP" OF MAIZE AT THE GROWING-PLANT EXHIBIT

retiring person will easily find an opportunity to approach a person demonstrating his exhibits, in order to ask a question or to start a discussion.

It is not easy to find at one place facilities necessary for extensive exhibits, and this fact may prove to be a serious obstacle which may prevent the exhibits from becoming a permanent part of the program. The exhibits at CORNELL UNIVERSITY, for example, occupied more than two acres (about one hectare) of garden space, 38 laboratories on the average 14×14 meters, and three corridors. Exhibitors requested 161 microscopes with either fluorite or apochromatic lenses, 135 oil immersion microscopes, 239 low power microscopes and 36 Greenoughs. Even the excellent equipment available at CORNELL UNIVERSITY, consisting of 60 microscopes with either apochromatic or fluorite lenses, 100 microscopes with oil immersions, 186

low power microscopes and 77 Greenoughs was not sufficient to satisfy this demand. It was necessary to borrow lights and high power oculars from manufacturers of optical instruments and to arrange for the high power microscopes to be available to the exhibitors during demonstration periods only.

In connection with the use of microscopes a difficulty with the electric current was encountered. In the *Drosophila* and *Sciara* exhibits, for example, 98 microscopes were used at once in two adjacent rooms. The microscope lights required more current than the wiring equipment could carry so that it became necessary to bring in three additional circuits to supply the necessary energy. Similar arrangement was required for three other rooms.

The main credit for the success of the exhibits is due to the splendid cooperation of the geneticists who contributed time and effort and did not hesitate at the expense necessary to make the exhibits an outstanding feature. Well over ninety percent of them gave a ready response to the request for exhibits. Over 400 took part in the undertaking. A few, however, failed even to answer repeated correspondence. Fortunately for the organizers, the percentage of the latter was smaller than could have been expected in an average population, and the inconvenience they caused was not significant enough to affect the results.

Organizers of sections also deserve a large share of the credit for the success. They took a heavy load of responsibility off the shoulders of the exhibits committee and relieved the chairman of a great deal of correspondence. With the present organization more than 1200 letters and more than 500 circular letters were sent by the chairman. This correspondence would have been much heavier if the work had not been decentralized.

Credit is also due to R. A. EMERSON for his helpful attitude and continuous interest in the exhibits, to MARCUS M. RHOADES for the garden exhibits, to L. F. RANDOLPH for the efficient handling of the microscopes, to the members of the local committee for cooperation, and to graduate students F. CORREA, R. M. HAFF, S. HOROWITZ, W. G. HOUK, O. A. KRUG, P. MA, W. R. MILLS, L. G. MILES, J. A. B. NOLLA, G. W. SALISBURY, S. T. SHEN, K. L. TURK and L. E. WOLF for the efficient assistance they gave the exhibitors.

To the biological departments of CORNELL UNIVERSITY, which unhesitatingly gave use of their facilities and optical instruments for exhibits purposes and to the administrative officers of the university, who helped whenever an occasion arose, appreciation of the exhibits committee is extended.

The CARNEGIE INSTITUTION OF WASHINGTON helped make the exhibits a success by allowing the chairman to spend much of his time on exhibits

work and by appropriating funds from which the office expenses and the secretarial expenses of the exhibits committee were defrayed. Miss MIRIAM KORTRIGHT and Miss EUNICE WHITE did creditable work as part-time secretaries.

Acknowledgment is here made of loans by the BAUSCH AND LOMB OPTICAL COMPANY of the automatic balopticon, six eusopes with lights, thirty 15× oculars, and eight microscopes and eight lamps for the Geneva exhibits; by the SPENCER LENS COMPANY of seventeen pairs of oculars and sixty lamps; by the EASTMAN KODAK COMPANY of fifty Wratten filters; and by the BAUSCH AND LOMB OPTICAL COMPANY, E. LEITZ, INCORPORATED, the SPENCER LENS COMPANY, and CARL ZEISS, of optical equipment with recent improvements.