abroad. The anthology *Hybrid Corn* gives in Russian translation some of the most important investigations and reviews of work which have appeared in recent years."

There follows an extensive review, with uniformly favorable comments, of articles by Mangelsdorf, Shull, Hayes, Ritchie, Wellhausen, Sprague, and others, most of which are well known to American plant geneticists.

"Even from such a very short summary it is clear how extensive and interesting material is represented in the work being reviewed. The editor successfully chose the articles for translation and made very appropriate use of the relatively small space available to him in the book.

"In conclusion, however, two remarks must be addressed to the publishers of the book.

"We have spoken several times about the fine work of the editor of the anthology, but have not mentioned his name. The name of the editor—Corresponding Member of the Academy of Science of the U.S.S.R. N. P. Dubinin—for some reason is concealed from the reader by the publishers. This seems to us completely unpermissible. The editor carried out a large and necessary task, and the reader has the right to know whom he should thank for it.

"The second remark is the following. In a short preface 'From the publishers,' among other things, the following is said: 'Each of these articles contains much valuable factual material; at the same time, since the authors of all of the articles hold to the viewpoint of the chromosome theory of heredity, this material must consequently be used critically.' This sentence calls for legitimate perplexity.

"The publishers, presenting to the reader a book founded entirely, as they themselves recognize, on the basis of the 'chromosomal theory of heredity' [we put this expression in quotation marks, because it is far more correct to say: on the basis of the doctrine of the 'material (or cytological) basis of heredity'], warn that this theory is mistaken. But if it is discarded, then nothing remains in the book. There does not remain the method of inbreeding, which establishes pure lines, hybrids of which should by 1960 occupy the entire 28 million hectares in the U.S.S.R. sown to corn. There does not remain the marking of the parental lines with marker genes, without which pure (homozygous) lines cannot be produced in a restricted period of time. There does not remain the cytoplasmic male sterility, which gives to the country the possibility of saving millions of work days from the labor of removing the tassels. There does not remain the method of selecting gametes, significantly easing and simplifying the breeder's work.

"In fact the only thing which should be discarded in the book is the sentence of the publishers that was quoted.

"We must hope that the publishers of foreign literature in the future will regularly acquaint Soviet readers with all of the more interesting work on hybrid corn and on other problems of contemporary genetics and in this way further the completion of the tasks that have been assigned to our science."

This statement, written solely for Soviet plant scientists, is clear indication of a scientific revolution already in progress that may restore genetics to its rightful position in a great and scientifically progressive nation and that will make future contact between American and Soviet geneticists far easier. Let us hope that it will continue.

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22 March 1956

The resignation of T. D. Lysenko as head of the All-Union Academy of Agricultural Science was announced in Moscow on 9 Apr. 1956.

International Geophysical Year Symbol

The Special Committee for the International Geophysical Year (CSAGI) has adopted two symbols in connection with the IGY, shown in Figs. 1 and 2 (kindly provided by D. C. Martin, assistant secretary of the Royal Society).

Figure 1 presents the symbol to be used on CSAGI and other IGY publications, under rules issued by the general secretary on behalf of CSAGI, where no inscription is needed because the pertinent information will already be present on title pages and covers. This symbol attempts to suggest the scope of IGY. For example, the earth is partly light, partly dark—suggesting solar-terrestrial relationships; a satellite and its orbit indicate IGY interests in the physics of the high atmosphere; and the orientation of the earth, showing the South Pole, not only implies the conduct of an unprecedented IGY research effort in that region but may suggest IGY coverage of other regions ordinarily not the subject of extensive geophysical study.

Fig. 1

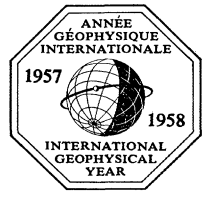

Fig. 2

The second symbol (Fig. 2) is proposed for use on instruments, equipment, and so forth, where the French or English language is appropriate; other national committees will translate the inscription.

HUGH ODISHAW, *Executive Secretary, U.S. National Committee-IGY, National Academy of Sciences, Washington, D.C.*

3 April 1956

Library Searches with Punched-Card Machines

The following example illustrates the problem to be discussed. A chemist asks his librarian to list published articles that contain data on compressibility of sodium chloride solutions. With the conventional card index, the librarian must look under *solutions, compressibility,* and *sodium chloride*; and relevant articles may also have been indexed under still other subjects. The search is laborious and may miss important items.

With machine methods (*1*), a different procedure is possible. Each article is represented by a punched card. This *abstract card* contains, in coded form, the identification number of the article, author and journal information, and 10 or 15 key words, or *attributes.* The attributes identify subjects to which the article is related. The abstract cards need not be kept in any special order: a machine can search the whole file rapidly and automatically select relevant cards.

For coding attributes, two methods are possible: each attribute may be punched in a separate small field on the card (*2*), or codes for various attributes may be superposed in one large field. We chose the latter method. Its advantage is that many attributes may be entered on a single card. Its disadvantage is that the coding is irreversible. For instance, if each attribute is coded as a pattern of four holes, then a given set of eight holes can result from the coding of any one of $8!/4!4! = 70$ pairs of attributes. This disadvantage is not serious if only a small fraction of the theoretically possible number of codes is used, and if these are chosen at random. A search will then seldom produce more than a few spurious cards; and it will never miss any relevant ones.

Random coding has been exploited with Zato cards and with McBee Keysort cards (*3*). To apply it to IBM cards, we prepared a set of *master cards* containing four-hole codes. The codes were punched in the field consisting of digit positions 0 to 9 in columns 1 to 40 of