MEN AND MICE AT EDINBURGH

Reports from the Genetics Congress

THE Seventh International Congress is now history. The crisis, which had threatened all summer, broke just as the Congress convened, though war was not actually declared until after the Congress adjourned. Contions for holding an International Congress could hardly have been worse, but nearly two hundred Americans went in spite of the uncertainty. The final program of the Congress, issued just before it convened, closed with the following statement: "To construct a program of this kind is always difficult: in these days it is almost impossible. Those who recognize its faults, and they are many, will surely excuse them when they learn that after this program had been printed, and only ten days before the actual opening of the Congress, no fewer than fifty names and titles had to be removed and the whole program hurriedly recast."

When this final program went to press, the Russian delegation had been withdrawn. On the second or third day of the Congress at Edinburgh (August 22-30) the German, Hungarian, Scandinavian, and Swiss delegations had left. Those who still remained were mainly the British and the Americans. Since Dr. Vavilov was not present, the Congress elected Dr. Crew as its President.

On account of the interruption of Atlantic travel, very few of the Americans have returned. So that details regarding the Congress will have to wait until the next issue of the JOURNAL.

Two significant items have been received at this time,—one of these deal with mice and the other with men. To avoid copyright complications, or a charge of plagerism, it seems best to reverse Steinbeck's order of listing these mammals in the title of this notice. Also the approach to the problems of mammals in general and of our own species in particular is different enough from that of Steinbeck to emphasize the contrast by the inversion.

The matter of men insofar as the Genetics Congress dealt with it, and in the light of our present information, is contained in an unofficial statement (published in full below) termed by some signers, "The Geneticists' Manifesto." It was prepared in response to a question cabled by Watson Davis, editor of *Science Service,* to a number of geneticists in Great Britain, asking "How could world's population improve most effectively genetically?" The statement below was prepared jointly by a group of those to whom it was addressed; it was signed originally by Crew, Haldane, Harland, Hogben, Huxley, Needham and Muller. Dr. Muller writes about this statement, "No attempt was made to secure as many signatures as possible or to bring up the matter for public discussion, but with very few exceptions all those asked to sign it did so. No claim is here put forward that these signatures are or are not 'representative' (as Mr. Watson Davis has requested), it being thought fit for the signatures to speak for themselves concerning this matter." This statement is carefully and thoughtfully drawn, and sound enough to serve as a basic platform of departure for discussing the genetic implications of human improvement. It read as follows:

The "Manifesto"

The question "how could the world's population be improved most effectively genetically" raises far broader problems than the purely biological ones, problems which the biologist unavoidably encounters as soon as he tries to get the principles of his own special field put into practice. For the effective genetic improvement of mankind is dependent upon major changes in social conditions, and correlative changes in human attitudes. In the first place there can be no valid basis for estimating and comparing the intrinsic worth of different individuals without economic and social conditions which provide approximately equal opportunities for

all members of society instead of stratifying them from birth into classes with widely different privileges.

The second major hindrance to genetic improvement lies in the economic and political conditions which foster antagonism between different peoples, nations and "races". The removal of race prejudices and of the unscientific doctrine that good or bad genes are the monopoly of particular peoples or of persons with features of a given kind will not be possible, however, before the conditions which make for war and economic exploitation have been eliminated. This requires some effective sort of federation of the whole world, based on the common interests of all its peoples.

Thirdly, it cannot be expected that the raising of children will be influenced actively by considerations of the worth of future generations unless parents in general have a very considerable economic security and unless they are extended such adequate economic, medical, educational and other aids in the bearing and rearing of each additional child that the having of more children does not overburden either of them. As the woman is more especially affected by child bearing and rearing she must be given special protection to ensure that her reproductive duties do not interfere too greatly with her opportunities to participate in the life and work of the community at large. These objects cannot be achieved unless there is an organization of production primarily for the benefit of consumer and worker, unless the conditions of employment are adapted to the needs of parents and especially of mothers, and unless dwellings, towns and community services generally are reshaped with the good of children as one of their main objectives.

A fourth prerequisite for effective genetic improvement is the legalization, the universal dissemination, and the further development through scientific investigation, of ever more efficacious means of birth control, both negative and positive, that can be put into effect at all stages of the reproductive process — as by voluntary temporary or permanent sterilization, contraception, abortion (as a third line of defense), control of fertility and of the sexual cycle, artificial insemination, etc. Along with all this the development of social consciousness and responsibility in regard to the production of children is required, and this cannot be expected to be operative unless the above mentioned economic and social conditions for its fulfilment are present and unless the superstitious attitude towards sex and reproduction now prevalent has been replaced by a scientific and social attitude. This will result in its being regarded as an honour and a privilege, if not a duty, for a mother, married or unmarried, or for a couple, to have the best children possible, both in respect of their upbringing and of their genetic endowment, even where the latter would mean an artificial — though always voluntary — control over the processes of parentage.

Before people in general, or the state which is supposed to represent them, can be relied upon to adopt rational policies for the guidance of their reproduction, there will have to be, fifthly, a far wider spread of knowledge of biological principles and of recognition of the truth that both environment and heredity constitute dominating and inescapable complementary factors in human well-being, but factors both of which are under the potential control of man and admit of unlimited but interdependent progress. Betterment of environmental conditions enhances the opportunities for genetic betterment in the ways above indicated. But it must also be understood that the effect of the bettered environment is not a direct one on the germ cells and that the Lamarckian doctrine is fallacious, according to which the children of parents who have had better opportunities for physical and mental development inherit these improvements, biologically, and according to which, in consequence, the dominant classes and peoples would have become genetically superior to the underprivileged ones. The intrinsic (genetic) characteristics of any generation can be better than those of the preceding generation only as a result of some kind of *selection,* i.e., by those persons of the preceding generation who had a better genetic equipment having produced more offspring, on the whole, than the rest, either through conscious choice, or as an automatic result of the way in which they lived. Under modern civilized conditions such selection is far less likely to be automatic than under primitive conditions, hence some kind of conscious guidance of selection is called

for. To make this possible, however, the population must first appreciate the force of the above principles, and the social value which a wisely guided selection would have.

Sixthly, conscious selection requires, in addition, an agreed direction or directions for selection to take, and these directions cannot be social ones, that is, for the good of mankind at large, unless social motives predominate in society. This in turn implies its socialized organization. The most important genetic objectives, from a social point of view, are the improvement of those genetic characteristics which make (a) for health, (b) for the complex called intelligence and (c) for those temperamental qualities which favour fellow-feeling and social behaviour rather than those (today most esteemed by many) which make for personal "success," as success is usually understood at present.

A more widespread understanding of biological principles will bring with it the realization that much more than the prevention of genetic deterioration is to be sought for and that the raising of the level of the average of the population nearly to that of the highest now existing in isolated individuals, in regard to physical well-being, intelligence and temperamental qualities, is an achievement that would — so far as purely genetic considerations are concerned — be physically possible within a comparatively small number of generations. Thus everyone might look upon "genius", combined of course with stability, as his birthright. And, as the course of evolution shows, this would represent no final stage at all, but only an earnest of still further progress in the future.

The effectiveness of such progress, however, would demand increasingly extensive and intensive research in human genetics and in the numerous fields of investigation correlated therewith. This would involve the cooperation of specialists in various branches of medicine, psychology, chemistry and, not least, the social sciences, with the improvement of the inner constitution of man himself as their central theme. The organization of the human body is marvellously intricate and the study of its genetics is beset with special difficulties which require the prosecution of research in this field to be on a much vaster scale, as well as more exact and analytical, than hitherto contemplated. This can, however, come about when men's minds are turned from war and hate and the struggle for the elementary means of subsistence to larger aims, pursued in common.

The day when economic reconstruction will reach the stage where such human forces will be released is not yet, but it is the task of this generation to prepare for it, and all steps along the way will represent a gain, not only for the possibilities of the ultimate genetic improvement of man, to a degree seldom dreamed of hitherto, but at the same time, more directly, for human mastery over those more immediate evils which are so threatening our modern civilization.

(original signers)

F. A. E. Crew, F.R.S.
J. B. S. Haldane, F.R.S.
S. C. Harland
L. T. Hogben, F.R.S.
J. S. Huxley, F.R.S.
H. J. Muller
J. Needham

(additional signers)

G. P. Child
P. R. David
G. Dahlberg
Th. Dobzhansky
R. A. Emerson
C. Gordon
John Hammond
C. L. Huskins
W. Landauer
H. H. Plough
E. Price
J. Schultz
A. G. Steinberg
C. H. Waddington

Action regarding mice was taken by a committee appointed to deal with the nomenclature of genes in mice, the reporting of genetic progress in mouse genetics, and the preservation in a safe place of genes of value to mice geneticists. This committee adopted the following report which has been transmitted by Dr. Hans Grueneberg, 131 Park Side Way, North Harrow, Middlesex, England, the Secretary of this committee. The text of this report follows:

A CIRCULAR letter signed by L. C. Dunn, W. H. Gates, G. D. Snell, and W. L. Russell was recently forwarded to biologists interested in mouse genetics, asking for opinions with regard to the possible establishment of a Committee on Mouse Genetics Nomenclature and of a Mouse Genetics News Service. Nearly 100 replies were received, all favourable. Professors F. A. E. Crew and L. C. Dunn and Dr. G. D. Snell were appointed as the Committee on Mouse Genetics Nomenclature.

The present meeting was called to consid-

er a set of nomenclature rules drawn up by the above Committee, and to discuss details of the News Service. Unfortunately none of the Committee was able to be present.

Dr. A. L. Hagedoorn (Holland) was in the chair. Those present included:

H. B. Andervont	U. S. A.
Ch. Auerbach	Edinburgh.
R. C. Bamber	Liverpool.
G. M. Bonser	Leeds.
B. M. Braithwaite	Liverpool.
F. G. Carnochan	U. S. A.
P. R. David	U. S. A.
W. H. Gates	U. S. A.
L. C. Glass	U. S. A.
P. A. Gorer	London.
H. Grueneberg	London.
A. Haddon	London.
J. B. S. Haldane	London.
J. M. Henderson	Montreal.
W. K. Hirschfeld	Holland.
H. L. Ibsen	U. S. A.
I. Chester Jones	Liverpool.
N. Kobozieff	France.
S. B. North	London.
J. H. Pickard	Edinburgh.
S. C. Reed	Montreal.
W. L. Russell	U. S. A.
F. W. Tinney	Rothamsted.
G. Woolley	U. S. A.

The recommendations of the meeting as regards nomenclature have been submitted to the Committee.

The Director and staff of the Roscoe B. Jackson Memorial Laboratory in Bar Harbor, Maine, U. S. A., had kindly offered facilities for the publication in mimeographed form of the Mouse Genetics News. This offer was gratefully accepted. It was suggested that a register of stocks and the various Pure Lines should be drawn up; this should end the confusion in the naming of Pure Lines used in various laboratories which has arisen during the last few years. Stock lists of all the laboratories concerned should be published from time to time. It was further suggested that notice should be given by a laboratory before any stocks are discontinued; it has happened several times in the past that valuable material has been irretrievably lost, because every laboratory has relied on other places for its maintenance. The News Service should also arrange for exchange of stocks, and it is hoped that its activities may be extended to rabbits and other rodents. An appeal should be made to all laboratories concerned to collaborate whole-heartedly by promptly answering correspondence and sending information.

The meeting then discussed the establishment of centres, preferably in the U. S. A., for the maintenance and safe keeping of stocks, particularly of genes (pathological and otherwise) which are not purposely kept by the fancy. The continuity of genetical work depends on keeping our genes alive; genes which have died out are as irrevocably lost as extinct animal or plant species. It was urged that this matter should receive the immediate consideration of the News Service, and that an appeal should be made to the Carnegie and Rockefeller Foundations for financial assistance.

H. GRUENBERG.

Let us hope that there is something prophetic in this gathering of genetic research workers from the ends of the earth just as the world plunges again into the ancient futility of "settling" its problems by force. We might envision the "manifesto" as the final protest of our new brain as the medulla oblongata and the older emotional reflexes of our race again take over control. It has taken seven years to arrange this International Congress while the world has been "at peace." What of the future now we are no longer "at peace" again? Certainly the signers of "Geneticists' Manifesto" have laid a rational foundation for considering problems of human betterment, to which "conservatives" and "radicals" will both subscribe. Perhaps the members of this committee were not born into a rational species. Their plea to put honest and realistic approaches first will also fall not so much on deaf ears, as on ears distracted by the noise of war, and on the minds blinded by that futile urgency to the fact that after this war we have the greater job of building a peace which will work—and *last*. If this fails it seems unlikely that even in the New World will the genes of mice long find a cloistered place of safety, for one Evolutionary Experiment in magnifying the fore part of the neural tube seems fated to turn out to have been only a very qualified success, and slated for the cosmic dustbin.