

GENETICS

# Heredity-Bearing Genes and Death-Dealing Viruses Alike

## X-Ray Studies Reported to International Congress Suggest Possible Essential Similarity; May Be Free

**G**ENES, the bearers of life, and viruses, that bring disease and death, may be very much alike.

This revolutionary suggestion was laid before the meeting of the Seventh International Congress of Genetics in Edinburgh, Scotland, by Prof. John W. Gowen of Iowa State College.

Prof. Gowen also told of his use of X-rays as measuring tools, to give an estimate of the size of both these types of vitally important particles, which are too small to be seen with even the most powerful of microscopes. He found the virus particles to be super-sized molecules, with a molecular weight of approximately 16 million. This is in fairly close agreement with measurements obtained by other means.

Regarding the possible essential similarity between genes and virus particles, the American scientist said:

"Possibly the only difference between these small viruses and the gene is that the latter is attributed a place in the cell chromatin whereas the former is free to move, making its isolation in relatively pure form possible. But even this difference is likely to break down. With better techniques of recognizing gene effects, these substances may very possibly be found within the cell cytoplasm or even in the circulation of the animal or plant."

The idea of genes wandering at large in plants and animals, instead of always roosting securely on or in the chromosomes, is a new slant in genetics. It would put both genes and virus particles in the position of being complex chemical entities that go about giving orders to the rest of the protoplasm. The difference would be that genes are "natives," with a right to do this, while virus particles would be outsiders, muscling in and forcing the protoplasm into abnormal behavior.

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## Benefits to Well-to-do

**F**AMILY allowances for all who earn up to \$10,000 annually to encourage more children and prevent the world's

new freedom of voluntary parenthood from becoming disastrous is advocated by Dr. R. A. Fisher, Galton professor of eugenics, University College, London, in answering Science Service's inquiry as to how the world's population could be improved most effectively genetically. (See *SNL*, Aug. 26)

"Parenthood is now voluntary," stated Dr. Fisher, one of the world's leading authorities on human heredity. "If this new freedom is not to be disastrous, it is necessary that in all grades of society parents and non-parents, contributing by their work equivalent services, shall enjoy equivalent benefits. On the economic and industrial side this problem is now solved in countries which apply systems of family allowances.

"In English speaking countries the issue has been obstructed and obscured by giving such allowances only, or principally, to the unemployed, and to those in special need. Contributory systems should be applied to all wages and salaries up to \$10,000, as are contributory systems of superannuation benefit.

"We might then cease to destroy the best qualities of our peoples, as we now do, by selecting native ability from all classes, and effectively sterilizing its possessors by drafting them into occupations where small families, or none, are customary.

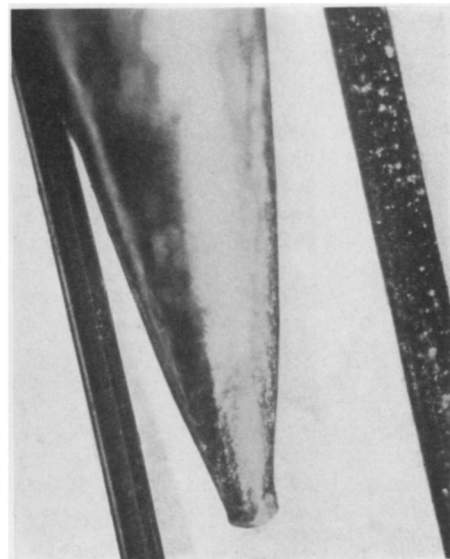
"There is no biological reason why the large houses of the prosperous should not support more children than the cramped quarters of the poor, and there is every reason in the name of both inheritance and environment for seeing to it that they shall do so."

Dr. Fisher is one of several world leaders in genetics to whom was put the important inquiry by Science Service.

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## Triple-Resistant Wheat

**A** TRIPLE-RESISTANT variety of wheat, able to defy three of wheat's worst natural enemies, will be ready for distribution to growers in 1943, Prof. Fred N. Briggs of the University of California promised.



**SMALLEST METAL TUBE**

*About the size of an average hair of your head is a World's Fair wonder at the West Virginia Building. Material: Pure nickel. Diameter: 26/10,000th of an inch. Its hole is less than a third that. Use: None except to be seen, although hypodermic needles use only slightly larger tubes. At left is tube, at right hair. Center, the point of a pin.*

The wheat breeder is able to make this prediction with confidence that when the time comes he will deliver the goods because of the method used in producing the new variety, Prof. Briggs explained. By crossing a resistant strain with a productive but non-resistant one, and then back-crossing the hybrid offspring with one of the parent stocks, the desired character of the parent can be stabilized or fixed in the new variety.

Back-crossing thrice repeated has already produced a wheat resistant to both bunt and Hessian fly, in the California breeding fields. Seed of this variety will be available to California growers in 1940. The triple-resistant wheat will require five backcrosses.

Back-crossing is also being used for the production of hullless and awnless barleys. A number of other crops are under experiment, Prof. Briggs stated.

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## Teosinte Not Ancestral

**C**ORN is not descended from the heavy-stalked Mexican grass called teosinte; more likely teosinte is descended from corn.

Evidence pointing strongly in this direction was presented by Prof. P. C. Mangelsdorf of Texas Agricultural Experiment Station.

It has long been contended that corn