

total of cases reported throughout the nation was 89,828 for the week ending Jan. 11.

The epidemic has reached as far east as New England, where Maine reported 1,345 cases and New Hampshire 1,000, and the Southeast, with 4,200 cases reported in Virginia and 3,686 reported in South Carolina. Health authorities expect the total to be greatly increased when the thickly populated states of New Jersey and New York feel the full force of the epidemic. Pennsylvania does not report influenza in figures, but the health officer states there is an epidemic in the western part of the state and that there are many cases scattered throughout the rest of the state.

On the West Coast the epidemic is dying down, but Texas and Louisiana both reported increases over the previous week's figures. In Texas 33,283 cases were reported and in Louisiana 4,983.

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#### EVOLUTION

### Evolution Under Attack By Nazis in Germany

**E**VOLUTION is under violent attack in Germany primarily because Darwinian teachings deviate from the Nazi "party line" states Dr. Otto Haas of the American Museum of Natural History. (*Science*, Jan. 10) Dr. Haas cites a German "semi-scientific" publication, entitled *Natur und Kultur*, in which ten different authors make violent attacks upon evolution, especially with regard to the origin of man from apelike ancestors.

Dr. Haas calls particular attention "to a fact most striking to a scientific reader: nowhere are the conclusions derived from the results of research; on the contrary, the former are tested as to whether or not they agree with the national socialist racial theory ('Rassenlehre'). If they do not they have to be rejected. . . . It is no less striking to see that the adversaries of evolution reproach its advocates, alleging that the latter make them politically suspect."

One author, H. Weinert, rejects all these arguments as "pseudoscientific objections against the theory of human descent," but even he apparently tries to bolster up his scientific argument with an appeal to the party line, "asserting that, should the origin of man be questioned, the adversaries of the national socialist 'race hygiene' tendencies should cite the uncertainty of science."

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#### PSYCHOLOGY

## Robot Could Find Own Food And Water, Refill Itself

### Automatic Devices Would Signal Switchboard Brain When Robot Tanks Needed Replenishing, or When Full

**I**F WARFARE of the future becomes so mechanized that the actual fighting is done by mechanical gladiators, the super-fuehrer of that fantastic day might build his robot recruits by the recipe prepared by Dr. Clark L. Hull, Yale University psychologist.

Dr. Hull is known among his colleagues for having designed and actually had built a mechanical brain—an electrical machine which can "learn" from experience and (even more human) forget.

Now he goes further and provides scientists with the "blue-prints" telling how a complete robot would have to be built so that he might keep himself "alive" by securing his own food and water.

First such a robot would have to be provided with means for moving about. Inactivity would be fatal.

Two tanks would have to be built into him, one for fuel or food, one for water. These tanks would have to have an attachment for signaling when they were filled to the bursting point and also when their stores were nearing exhaustion.

These signals would have to be connected with outside apparatus for filling the tanks automatically and this connection would have to be completed through a brain, or switchboard.

The outside apparatus, the hose, would have to be able to move about freely like an insect's antenna, exploring until contact with the fuel or water was made. To prevent filling the water tank with gas, or the gas tank with water, the filling mechanism might be activated chemically only by the appropriate substance.

All these ingenious devices in the robot parallel the much more complicated mechanism in the human and animal body for finding, storing and converting into energy the food and other needs for survival, Dr. Hull pointed out. A man earning a living goes through a great deal of trial-and-error activity, much of which turns out to be useless, before he can get actual contact with

the beefsteak and drinks his own "tanks" demand.

When the robot is built so that he can fill his own tanks, he still needs some sort of directional apparatus that will guide him to the source of his nourishment. Dr. Hull's design provides for this with two gadgets which the engineer could easily construct.

One device will turn the robot around when he needs water until a light over his water supply shines at its brightest on the photoelectric "eyes" in his forehead. He will then be set in motion in the right direction.

The other gadget will turn the robot until a buzzer over the food supply records its loudest in his sound sensitive "ears."

The human body has much more complex apparatus for signaling hungers and other needs and for guiding the individual to their satisfaction, but nevertheless, Dr. Hull concludes, the whole complex human personality may be thought of as a magnificent machine which only the master-Fuehrer who is also a super-scientist might design.

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Sent by the U. S. Fish and Wildlife Service, three boats have been out in Bering Sea to gain practical information for developing an American *crab meat* industry, where Alaska King crab abound.



*SELF-SUSTAINING*

*Dr. Hull's suggestion for a robot that gets its own fuel and water is pictured in a drawing by the artist, Jo Low, prepared under his supervision*