

Next Dr. French tried salting the food. Some animals were attracted to the salty food, but others avoided it. By putting his dropper into the exact center of the food area, Dr. French was able to separate the salt eaters from the others. He put them into separate dishes, and repeated the experiment. More were attracted to salty food in the dish of previ-

ous salt eaters than in the dish of those who had a record of abstaining.

In this way, the paramecia demonstrated their consistent individual differences in sensitivity not only to salt, but also to potassium iodide and potassium chloride. Differences were almost entirely absent in "taste" for caustic soda, however.

Science News Letter, January 25, 1941

AGRICULTURE

Race Dogmas Challenged In Wallace's Report

In Final Annual Report as Secretary of Agriculture,
Declares Western Hemisphere Has No Room for Such Ideas

"THERE is no room in the Western Hemisphere for any notions about racial superiority."

This counter-challenge is thrown into the faces of "New Order" race dogmatists by Henry A. Wallace, now just become Vice-President of the United States, in the midst of the biological and economic discussions that occupy his last annual report as Secretary of Agriculture. Speaking with the authority of his first-hand knowledge of genetics, which had gained him repute as a scientist before he ever entered public life, he lashes unsparingly at doctrines that would rearrange the world on a master-and-slave status:

"Theories of racial superiority and racial inferiority have no scientific basis. Certain nations may be very different by training from other nations; by inheritance they are probably little different.

"Millions living in Germany are different from us chiefly because of an indoctrination systematically instilled into them from early youth. They have had more training in hard work, in giving their all to the fatherland, and in sub-

mission to economic and military rule. Many of them believe war is holy and think the achievement of German domination justifies any means. But if numerous American children had been adopted into German families 20 years ago, they would be just the same. They would be indistinguishable from native-born Germans.

"Probably any favorably located race can develop a civilization. The Indians of Latin America did so. Civilizations of long ago in Africa, China, Japan, and India were not inferior in many respects to those of today. In this hemisphere, broadly speaking, we have democratic types of civilization, and they rest on a genetic basis."

In the report, much emphasis is placed on the necessity for adjusting American agricultural production to the existing market. Pre-war measures taken by practically all the nations anticipating the outbreak of hostilities had sharply diminished our old export markets, especially for wheat, cotton and tobacco, and the events of the war have cut still further into possible outlets for those crops. On the other hand, home markets for such things as meats, dairy products, fruits and vegetables are steadily improving.

In the presence of this situation, Mr. Wallace points out, "Growing unneeded crops is sheer waste of labor, of capital, and of soil, even if temporarily the products can go into storage under Government loans. It is a drain on resources that would otherwise be available for national defense."

Better trade relations with other Western Hemisphere nations are recommended in the report. Obviously, the

RADIO

J. J. McEntee, director of the Civilian Conservation Corps, will discuss the CCC's health and safety programs as guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, Jan. 30, 3:45 p.m. EST, 2:45 CST, 1:45 MST, 12:45 PST. Listen in on your local station. Listen in each Thursday.

United States cannot import from South America commodities of which it already has surpluses, like Argentine wheat or Brazilian cotton; for these, joint effort in seeking sales outlets would seem to promise more satisfactory results. In the meantime, there is plenty of room in United States markets for a whole array of products whose very names suggest the exotic: abaca, cinchona, kapok, rotenone, tea, cocoa, camphor, rubber, tropical hardwoods. Most of the North American demand for these things is now supplied from the Old-World tropics; and even so that demand should be capable of considerable further growth.

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BIOLOGY

Sex of 'Possums Modified With Hormones After Birth

MODIFYING sex in animals after they were born is the scientific feat reported by Prof. Carl R. Moore of the University of Chicago in the new issue of *Physiological Zoology* (January).

Opossums were the animals used in the experiments. They were the only readily available animals adapted to the methods used, because opossums are born in an "unfinished" condition and are immediately placed in the mother's brood pouch, where they remain for 60 or 70 days, completing their development. The only other animals that do this kind of thing live in the Australasian region; with the opossums, they constitute the great primitive mammalian group known as marsupials.

Opossum young, Prof. Moore discovered, are as "unfinished" sexually as they are in other ways when they are born. Rudiments of sex glands are there, but they do not show definite signs of becoming either male or female until the third day after birth. Accessory and secondary sex organs and tissues show differentiation even later.

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Prof. Moore treated opossum young from three to 100 days old with male and female gland extracts or hormones. The substances were either mixed into ointments and rubbed on the animals' naked skins or were injected as solutions.

The experiments showed that even as early as the third day of post-natal development, sex is already sufficiently determined that it cannot be reversed by

hormone treatment, for neither male nor female sex glands were turned from the course of development they had started by the action of the opposed sex hormone. On the other hand, a number of changes, some of them quite radical, took place in the accessory and secondary sex structures. Female hormones caused male characters to shift in the female direction, and vice versa.

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GENERAL SCIENCE

Canadian Science Supports Dominion's War Effort

Workers Calibrating Gauges, Making Optical Parts, Studying Personnel Selection Methods and Nutrition

CANADA'S war efforts are receiving the benefits of scientific researches in many fields, the National Research Council of Canada reports, on the basis of a check-up of the activities of workers coordinated through its agency. These benefits of science are derived both directly, as in the munitions and aircraft industries, and indirectly in such things as safeguarding the Dominion's health and food.

One very critical spot, at the outbreak of hostilities, was the work of calibrating gauges of all kinds, in the Council's section on metrology. Little work of this kind had been done in Canada before the war, so that it was necessary to send representatives to Britain to study latest methods in testing munitions gauges. Now there are two laboratories, one at Ottawa and one at Toronto, where the greatly increased volume of gauge calibration work is being taken care of.

There was also a grave shortage of military optical instruments, such as range-finders and telescopic sights. This has now been remedied, and the Na-

tional Research Council's own shop can produce any kind of precise optical part. Other precise physical instruments developed in Canada include an electrical plotting device for sound range finding and a chronometer for measuring muzzle velocities of artillery shells.

Work on improvement in aircraft ranges from tests of plastics used in making accessory parts and bonding fabric and plywood wing materials to investigation of improved light armor and anti-icing devices for propellers. Many improvements have been made in engines and landing gear, especially in the adaptation of skis and floats for use in far northern patrol areas.

National Research Council psychologists and medical scientists have conducted extensive investigations into the best testing method for selecting personnel, again especially for the flying service. They have been concerned with problems in oxygen requirement, "black-outs" of pilots in steep dives or rapid spins, and rapidity of mental-muscular coordination in situations requiring split-second reactions for success in combat and safety in handling and landing planes.

Feeding of troops and civilian population has presented many important problems. The Council's division of biology and agriculture cooperated in the preparation of the new ration schedule for the troops, and also worked with the medical division on the study of proper cold storage methods to use in blood banks.

Changes in the smoking, shipping and storing of the famed Canadian bacon

make it possible to extend the time of its use from less than forty days to at least seventy—a matter of considerable practical importance in victualling troops now in England and on the Mediterranean fronts.

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for YOUR CONVENIENCE

unusual chemicals and supplies



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● Earth Trembles

Information collected by Science Service from seismological observatories resulted in the location by the U. S. Coast and Geodetic Survey of the following preliminary epicenter:

Sunday, Jan. 5, 1:46.7 p.m., EST

in the region of Flores Island, east of Java and south of Celebes. Latitude, 9 degrees south. Longitude, 121 degrees east.

Monday, Jan. 13, 11:27.7 a.m., EST

North on New Guinea. Latitude, 3 degrees south. Longitude, 144 degrees east. Severe shock.

For stations cooperating with Science Service, the Coast and Geodetic Survey, and the Jesuit Seismological Association in reporting earthquakes recorded on their seismographs, see *SNL*, Feb. 24, 1940.