tionists who shuddered at the loss of wildlife incidental to draining swamps.

DDT changed this. Where calcium arsenate had been used at the rate of a half pound an acre, less than one-tenth of a pound of DDT was required. And DDT was not as expensive as calcium arsenate.

Here, for the first time, was an effective insecticide cheap enough for large-scale use against mosquitoes. Much of the progress that has been made in the fight against yellow fever and malaria since 1942 can be directly traced to DDT.

Now, however, malaria mosquitoes are showing the first signs of resistance to DDT. Florida salt marsh mosquitoes, which do not carry disease, have already become indifferent to the chemical's effects.

If the malaria and yellow fever carriers follow the salt marsh mosquito's lead, it may again become necessary to rely solely on swamp drainage and insecticides.

Insecticides now being developed will not be on the market for three to four years. After chemists have synthesized the new products, they must be tested by entomologists.

The testing is done on a small scale first. If the insecticide proves successful, further tests are performed on more insects over a larger area. If the scientists are satisfied that the chemical is truly effective, plans are made for its manufacture.

What insecticides are effective today?

DDT is still effective against mosquitoes, although how long it will remain so is a matter for conjecture.

Lindane is used against body lice and agricultural insect pests generally. Its chief disadvantage is its high cost. The chemical is not effective against spider mites.

Parathione is used on farm crops, but it is highly poisonous and presents a constant threat to farm animals.

Pyrethrins are the old standard knockdown making up a major part of the fluid in your own spray gun. Pyrethrins are not good killers, but will knock flies out of the air fast. They are usually mixed with another chemical which kills insects after they have been brought to the floor.

Malathione is widely used because it will kill almost any variety of insect. It is especially effective against cockroaches. It has a bad smell, however, and must be re-applied every few weeks to insure lasting effects.

Science News Letter, April 28, 1956

PHYSICS

Total Radioactive Fallout

➤ THE TOTAL RADIOACTIVE FALLOUT from all atomic and hydrogen bomb tests so far conducted probably will produce in the nation's capital only a fraction of the lifetime dose due to natural and cosmic radiation, two scientists report.

Although their calculations were made only for Washington, the results would be about the same for other places in the Northern Hemisphere not too close to the explosion points, they report in *Science* (April 13).

About 60% of the lifetime total of radioactive dosage in Washington results from fallout from the Nevada tests, about 33% from Soviet tests and only about seven percent from Pacific tests, Drs. Irving H. Blifford Jr. and Herbert B. Rosenstock of the U. S. Naval Research Laboratory calculated.

The low contribution of Pacific tests, although "surprising" because the total energy released and the resulting fission debris "far exceeded the combined total of all other tests," shows that fallout is much more dependent on distance than on energy release.

All fusion and fission weapons explosions between January, 1951, and May, 1955, will give a lifetime fallout dose at Washington of less than one-fifth of a roentgen, the international standard of X-ray quantity.

These results, they report, are in agreement with other measurements previously made for various locations in the United States and in England. They are based on measurements of ground-level concentration of fission products in the air in Washington for several years, which are usually "less than the natural background."

The two scientists calculated the dosage received by an unshielded man for all "biologically significant" time. Fission products contained in the part of the mushroom cloud from H-bomb explosions that extends above 40,000 feet, the top level at which rain clouds form, were found to contribute only slightly to dosage at great distances.

Science News Letter, April 28, 1956

ENTOMOLOGY

Cotton Gin Kills Plant Insect Pests

➤ THE COTTON GIN is going to become an important insect killer on American cotton farms, saving growers a total of $1,500,000 a year.

Putting cotton through a gin kills pink bollworms in the seed, making heat sterilization unnecessary, research by the U. S. Department of Agriculture indicates.

The pink bollworm is a serious threat to the American cotton industry. The process of ginning, which includes drying, cleaning, extracting, and moving seed cotton and cotton seed pneumatically through gins, has been shown to kill from 90% to 100% of the insects in the cotton seed.

The gin's newly discovered function may mean modifying present Federal and state quarantine regulations. Texas, New Mexico, Arizona, Oklahoma, Louisiana and Arkansas will be most affected.

Science News Letter, April 28, 1956

NUTRITION

Too Much Iron Can Be Dangerous

➤ TOO MUCH IRON in your system can be dangerous, although most people, when they think of iron, worry about being anemic from insufficient amounts, the Federation of American Societies for Experimental Biology meeting in Atlantic City was told.

This danger of too much iron was cited as a possible human health hazard from a new chemical in bread and other foods in a report by Dr. Robert W. Wissler and associates of the University of Chicago. Their report was based on feeding studies with hamsters conducted at the University's Argonne Cancer Research Hospital.

Chemically, the food additive that is dangerous if eaten in too great amounts is polyethylene sorbitan monolaurate. It is used in emulsifying food and keeping bread from going stale.

The reason too much iron is dangerous is that, once absorbed into the body, it is difficult to eliminate. Cirrhosis of the liver, diabetes, and pancreas damage, which causes the skin to turn brown, are results of excess iron.

Science News Letter, April 28, 1956