

life sciences notes

PHARMACOLOGY

WHO draws up pharmaceutical code

The World Health Organization will shortly issue a code covering manufacturing and quality control practices in the drug industry.

American pharmaceutical manufacturers who have a double standard, gearing quality to the level of regulation of the nation to which the drugs are to be shipped, may be sharply affected.

The aim of the code, a draft of which is now circulating among 130 WHO member governments, is to protect importing nations against the dumping of drugs which a manufacturer cannot get past his own domestic requirements.

The code will not be backed by the force of law, but several African nations and other developing countries, prime targets for dumping, have served notice they will boycott those industries and nations which do not live up to the code.

WHO will avoid the role of drug policeman and will not likely issue any kind of certification. Instead it will concentrate on getting participating nations to pass binding legislation, and it is establishing a network of national and regional quality control laboratories which can keep an eye on incoming drugs.

The first WHO-sponsored training course to ready pharmacologists for these laboratories was held recently in Copenhagen. It was attended by 20 pharmacologists from Asia and the Middle East.

PEST CONTROL

Female blowflies poison mates

A new route to biological pest control is being developed in Australia. The technique permits the resistant female sheep blowfly to become a chemical pesticide carrier, according to scientists at Australia's Commonwealth Scientific and Industrial Research Organization.

A female fly is rendered immune to the effects of an insecticide and then her thorax is doped with the poison. In laboratory tests, doped females have been able to kill up to 100 males during mating. The technique has been developed by Dr. M. J. Whitten and Dr. K. R. Norris.

The advantage of the system is that the insecticide reaches its specific target. Large amounts of sprays or dusts do not have to be spread.

ECOLOGY

Newts smell a good thing

Home has an air about it. A report in the June 21 *SCIENCE* says that newts (*Taricha rivularis*) rely heavily on the sense of smell to tell them where home is.

David Grant and Oscar Anderson with the late Victor Twitty of Stanford University in Stanford, Calif., report that *T. rivularis* can smell his way home after being displaced by as much as 8 kilometers. "This feat is accomplished by direct, oriented migration toward the home area, regardless of its compass direction or the ruggedness of the intervening mountain terrain."

The experiment involved 617 test newts and 692 controls. The test animals were deprived of smell either

surgically or by perfusing their nasal cavities with formaldehyde. All the animals were collected in the same small segment of a stream and released 1.2 kilometers away. While 564 of the controls made it home, only 15 of the operated newts did so, and these were shown to have regenerated the olfactory nerve.

The researchers theorize that a characteristic complex of odors from trees, smaller plants and rotting vegetation provides an olfactory signature of home which the newt recognizes.

PLANT GENETICS

Barley uses gas warfare

Farmers more and more are using multiline sowing of grain seeds such as barley. This involves planting a mixture of genetically different seed so that if one kind is susceptible to a disease which strikes a field, others will be resistant and the crop will not fail.

There appears to be a hitch. Dr. Jens Sandfaer, head of the agricultural research department of the Danish Atomic Energy Commission at Risoe, reports that some strains appear capable of gassing neighboring plants of different strains into reduced fertility.

Dr. Sandfaer investigated Tystofte Prentice, a strain of barley no longer used commercially, and Svalof Freja, a newer variety with 20 percent higher yield. The latter normally has about 16 percent sterile flowers, the former three percent. When grown side by side Prentice produces 12 percent sterile flowers, Freja 18 percent.

The conclusion that Prentice exudes some fertility-repressing gas was reached by ruling out all other possible causes, Dr. Sandfaer says.

Further experiments have shown that Prentice can induce sterility in 7 out of 14 other strains studied. One of the remaining strains apparently fights back with its own gas, and is capable of reducing the fertility of the Prentice strain.

BIOCHEMISTRY

Effects of nitrate in cigarettes

Sodium nitrate when added to cigarettes is reported to reduce the level of carcinogens in the smoke, both by enhancing combustion of tobacco and by inhibiting formation of aromatic hydrocarbons like benzo(a)pyrene. That may not be all it does.

A report from J. H. Terrell of Air Products and Chemicals Inc. of Linwood, Pa., and colleagues at the U.S. Department of Agriculture's Agricultural Research Service in Philadelphia indicates that addition of the chemical might increase other harmful side effects of smoking. Comparing cigarettes with 8 percent NaNO_3 added with regular length unfiltered controls, Terrell finds that the nitrated cigarettes produce more than twice as much of "undesirable vapor-phase constituents" such as nitrogen oxides, acetaldehyde, acrolein, and acetonitrile. Acetaldehyde and acrolein strongly inhibit movement of the cilia, the fine hairs lining the lungs that keep them free of bacteria and irritants.

Terrell's report, in the June 28 *SCIENCE*, adds that while paraffins in the smoke are reduced, there may be formed "new compounds of questionable activity."