

FROM INDIA

## Oral Cancer

A tasty and expensive mixture of chewing tobacco grown in northern section of India has the dubious distinction of causing more cancer of the mouth than any other tobacco. It is found in Mainpuri, near Agra.

In the United States, tobacco chewing is a dying habit and few studies have been made of its effects, but in Southeast Asia, the World Health Organization has been promoting a four-year study to find out why the rate of oral cancer is so high, especially in the Mainpuri district.

**Mainpuri tobacco** is mixed with lime, finely cut betel nuts and other ingredients that cause the mixture to be particularly dangerous. Other tobaccos are considerably less potent in increasing the cancer risk among chewers. The incidence of mouth cancer in Mainpuri is 21.4 per 100,000, the world's highest figure.

The WHO study has been conducted by Prof. P. N. Wahi and his associates in the cancer research unit of the department of pathology at the Medical College, Agra.

**The greater** the amount of tobacco in the quid chewed, the higher the cancer rate becomes. The risk is higher if the quid is kept in the mouth during sleep, a fairly common custom. If the patient smokes and drinks, in addition to chewing tobacco, the risk grows.

Since the illiterate poor cannot buy the expensive mixture, there is more mouth cancer among the educated.

*K. S. Nayar*

FROM GENEVA

## Pesticide warning

In one of the most strongly worded technical reports in the 20-year history of the UN's World Health Organization, an international panel has warned that pesticides containing organochlorines apparently cause liver damage.

**The agents**, such as DDT, are used universally with excellent results, but mounting laboratory and medical evidence suggests that the substances are persistent and cumulative in both animals and man. Aldrin, dieldrin, heptachlor and gamma benzene hexachloride, or Lindane, are organochlorines in wide use in the U.S. and elsewhere.

Their use is regulated in the U.S. by the Department of Agriculture and the Food and Drug Administration; some are banned from use on foods to the extent that there are no permissible levels of detectable residue in food.

Even in low doses, says the WHO panel, such compounds injure the liver by stimulating microsomal enzymes in

the liver cells, and these enzymes probably affect the metabolism of other compounds.

The working party recommends that WHO urgently encourage investigations to nail down the toxicology.

**Admitting difficulty** in analyzing many pesticides, the panel says the assistance of the International Union of Pure and Applied Chemistry and the UN's International Atomic Energy Agency (Vienna) should also be sought.

Carrying out extensive tests, experts find many gaps in information on world patterns of pesticide use, residues from experimental projects, residues found in commerce, and losses of residues during storage and food processing.

The working party concludes it is impossible to set an "acceptable daily intake" figure for most pesticides because the minimum biological information needed is still not available.

*David Alan Ehrlich*

FROM ENGLAND

## Electric limbs

Very subtle control of artificial limbs by means of a tiny electronic device may become possible if experiments at West Hendon Hospital, London, are successful.

The experiments are being conducted at the new Powered Limbs Research Unit, which has just been set up by the Medical Research Council under Dr. A. B. Kinnier Wilson.

**The unit** is working on a tiny electronic device as thick as a match and less than an inch long, designed to be injected into a muscle through a thick hypodermic needle. A tiny package strapped to the outside of the limb will beam radio waves at the device, which will return them, modified by the electric current produced in the muscle.

A number of artificial limbs controlled by electric impulses picked up from muscles already exist. One of the most successful, the so-called Aldermaston hand, was partly developed at Hendon, miniaturized by Aldermaston engineers, and is now being made ready for quantity production. In this device, the electric signals are picked up from the skin surface and are easily confused by signals from other groups of muscles nearby.

**The implanted** electronic pickup will be completely insulated from other muscles. Several such pickups could be implanted in adjacent groups of muscles to control a much more complex limb with a variety of movements.

Dr. Kinnier Wilson says that the better the limbs get, the more difficult the technical problems which arise. For example, when a patient gets a limb which can be moved in several directions, "he

starts to gesticulate with it when he talks." This increases the power consumption enormously. *F. C. Livingstone*

## Drug addiction up

Known addicts to narcotics in Britain trebled between 1961 and 1966, while heroin addiction increased sevenfold in the same period, according to a survey by the Office of Health Economics.

The survey concerns itself primarily with opiates but also considers the barbiturates, amphetamines, hallucinogens (LSD) and marijuana.

It calls for action on suggestions that the smoking of reefers is harmless to health and should therefore be made legal. The survey says that at the present stage there is not enough evidence to support a decision to relax control on marijuana "whose use certainly involves some risk." (See page 500.)

A minority of the population did not consider, from its own experience, that it was a dangerously harmful drug. "Their views must either be contradicted as soon as possible by established scientific fact, or else accepted as valid, again on the basis of scientific judgment," the report states.

Introducing the survey, George Teeling-Smith, director of the Office of Health Economics, said: "Addicts are getting younger. In 1959 there were no heroin addicts under 20. Last year there were 317 known to the Home Office. Altogether about 1,400 are now known."

Heroin addiction may well become a serious threat to our society and our economy," says the report. "Only a small minority of heroin users continue to live normal productive lives, and many addicts rapidly infect other susceptible people."

FROM SWEDEN

## Drugs numbered

Sweden has become the first nation in the world to work out a single system of code numbers for all medicines sold and used in the country.

The next step will be to use a computer to control consumption and stocks of preparations.

Like many other countries, reports Bengt Sjöberg, head of the Military Druggists and the Caroline Institute in Stockholm, Europe's biggest dispensing chemists, Sweden was in danger of ending up with several different systems, but negotiations have brought an agreement on a unified system. Computerizing the results will be a relatively easy job. Sweden has managed to keep the number of recognized medicines between 3,000 and 4,000 compared with 15,000 to 20,000 in less restrictive countries. *H. J. Barnes*