

PHARMACOLOGY

Delayed-Action Drugs

The effect of long-acting drugs varies from patient to patient and in many instances physicians question their value, indicating the need for further study—By Faye Marley

► **LONG-ACTING DRUGS**, especially those taken at night for allergies, have the advantage of giving a patient a good night's sleep.

Instead of getting up two or more times to repeat a dosage of pyribenzamine, for example, he would take a dose of long-lasting Lentabs, each containing 100 milligrams of pyribenzamine. They act fine as sleeping tablets, but should not be taken in the morning before driving to work, Ciba pharmaceutical officers say.

Schering's Chlor-trimeton Maleate, another antihistamine, can be obtained in a form called Repetabs, which also afford a good night's sleep. The dosage is divided equally between an outer layer for rapid absorption and an inner core protected by a timed barrier for delayed release three to six hours after a tablet is swallowed.

Numerous other drugs have been put out in delayed-action doses, but the U.S. Food and Drug Administration told *SCIENCE SERVICE* it had had trouble testing the various drugs satisfactorily, partly because of the difference in people's reactions.

A Canadian scientist, Dr. A. B. Morrison, commented in a report in the *Journal of Pharmaceutical Sciences* a year ago,

54:1, 1965, on a variety of tablets tested by the Food and Drug Research Laboratories, Department of National Health and Welfare, Ottawa, Ontario, Canada.

With the aid of two other staff members in the department, Drs. E. J. Middleton and E. Nagy, Dr. Morrison now concludes in the *New England Journal of Medicine*, 274:136, 1966, that "on the basis of available information the formulation of sustained-release iron preparations seems unwarranted, and claims for sustained action of such products are unjustified."

Various types of sustained-release, or long-acting, tablets are on the market, including multivitamin preparations. Dr. Morrison found a deficiency of riboflavin, or vitamin B-2, in five of these drugs, however, which made it necessary to give several small doses of riboflavin every two hours.

The claims for long-sustained properties of some commercial preparations advertised for treatment of "iron-poor blood" are based on reputable clinical studies. However, even small doses of these pills cause stomach and bowel trouble in up to 10% of people who take them. Therefore, further study of pills for tired people is indicated.

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MEDICINE

Encephalitis From Virus

► **EVIDENCE** has been found that the dreaded brain fever, measles encephalitis, stems from invasion of the nervous system by the measles virus.

The American Medical Association has hailed the report, which appears in *Journal of the American Medical Association*, as a "welcome addition" to the vague information available on the disease.

Report of the virus causes in *JAMA*, 195:307, 1966, was made by Drs. John M. Adams and Catherine Baird of the School of Medicine, University of California at Los Angeles, and by Dr. Leoncio Fillow of Hospital Infantil, Mexico City.

Measles encephalitis may actually precede the onset of rash or occur on the first day of rash, although it usually begins from the second day to the fifth day following eruption. This sequence has caused most physicians to call the disease "post-infectious encephalitis."

In 1964, there were 300 cases of measles encephalitis among the 458,083 measles cases reported in the states and territories of the United States through the National Morbidity Reporting System. In 1963, 364 deaths were attributed to measles and its complications, which include hearing and sight damage.

Two measles encephalitis cases have already been reported this year in the vicinity of Mt. Pleasant, Mich., and immunization of 4,000 children has taken place to forestall a measles epidemic.

Rhode Island has set an example of state public health sponsorship of vaccination against measles, and it is possible that other health departments will follow suit. The U.S. Public Health Service sent a representative to Providence, R.I., to study the program.

In central Michigan, children aged one through eight have been given the new one-shot measles vaccine Lirugen, developed by Pitman Moore Division of the Dow Chemical Company.

Most of the medical staff of the community hospital in Mt. Pleasant volunteered to staff vaccination clinics.

Donations from private citizens and the Community Fund were used to offset the expense.

The Michigan Public Health Service and the Federal Communicable Disease Center at Atlanta, Ga., cooperated with local physicians and the Central Michigan Health Department in making arrangements.

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NEUROLOGY

Non-Nervous Brain Tissue Plays 'Caretaker' Role

► **THE ROLE** of non-nervous brain tissue has been largely unknown, but research at the University of California at Los Angeles, suggests that it has a caretaker role, repairing brain damage and serving as a supply depot in brain emergencies.

Drs. David Maxwell and Lawrence Kruger of the UCLA Medical School have probed the tissue, known as neuroglia, with a powerful electron microscope. Their studies have helped to define functions of the tissue.

Neuroglia serves as support for the neurons, electrically active cells of the brain. Additional roles have not been clearly established.

Evidence obtained suggests that neuroglia also helps form scar tissue and is associated with the formation of myelin, the protective sheath enclosing nerve fibers. Scientists studied repair function by inducing radiation injury in rat brains and examining damaged areas with the electron microscope.

In other studies they obtained evidence that when the oxygen supply to the brain is temporarily interrupted, glycogen may come from neuroglia to supply the energy to nourish the neurons. This supply apparently is used rapidly and is adequate only for a few minutes.

Two types of neuroglial cells have been identified—astrocytes and oligodendrocytes. A third type, microglia, has been suggested by other scientists as a "trash collector," clearing away debris from the brain. The UCLA study casts doubt on the existence of this type of neuroglial cell, indicating that this function may be carried out by a cell derived from the vascular system.

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General Electric

"BUBBLE CAP"—A simplified technique for synthesizing amino acids using the "bubble cap" has been developed by Dr. Herman L. Finkbeiner of General Electric.