

Two-Drug Cure for Leprosy

► **LEPROSY TREATMENT** has been markedly improved by the combined use of two well-known drugs, a Louisiana study of 10 patients afflicted with the skin variety of the disease has shown.

Both drugs, streptomycin and the sulfones, are somewhat effective against leprosy by themselves, but used together their action was more than doubled, reported the U.S. Public Health Service leprosarium in Carville, La.

Drs. Robert C. Hastings and John R. Trautman discovered the treatment by accident. Their patients had been taking sulfones when they were given streptomycin for respiratory lesions. After observing a few short courses with streptomycin, the doctors noticed an improvement in the skin lesions and decided to continue the combinations.

In the four to 10 months since they began the two-drug treatment, all 10 patients improved, as skin scrapings dramatically revealed.

When leprosy germs die, they degenerate into beaded forms. The more beads of bacilli, the more successful the treatment. With sulfones alone, skin

scrapings showed only 24% of the bacilli in beaded form. After one month on the double regimen, the proportion had risen to 54% and by eight months to 99%.

Besides the skin scrapings, improvement was also found in tissue structure and various clinical tests.

Improvement was most obvious in the nodular cases, the doctors said.

There is good reason from previous experience with tuberculosis to believe that the two-drug treatment has special potency. Even though the disease has become resistant to one drug, that same drug will nevertheless delay the emergence of germs resistant to a second drug, the doctors reported in *Medical World News*, July 8, 1966.

CYTOLOGY

Membranes of Cells Only One Molecule Thick

► **MEMBRANES** of living cells are one molecule thick instead of three layers thick as previously thought, reported Prof. David E. Green of the University of Wisconsin's Institute for Enzyme Research.

Living cells contain interlacing membranes bounded by a delicate cell membrane. These membranes participate in the movement of substances, energy transformations and major metabolic activities, Prof. Green said.

Prof. Green and his group have been investigating the biological chemistry of the membranes of mitochondria, tiny double-membrane structures shaped like pea pods within the cell.

The enzymologists have now firmly established that these membranes have the thickness of one large molecule. Thousands of complex molecules, or repeating units, make up a single membrane.

The repeating units are made up of chemically intertwined proteins and phospholipids. Phospholipids are similar in structure to "stored fat" molecules.

"Each repeating unit of a membrane is made up of a 'basepiece' and a 'knob.' The basepieces form the membrane, and the knobs project from the membrane. All membranes so far investigated possess repeating units of this standard form. The repeating units vary in size and shape from membrane to membrane, but are constant for any given membrane," Green said.

Size and gross structure characteristics of repeating units are readily observed from photographs taken from electron microscopes, he stated.

Prof. Green's biomembrane research is supported by a grant from the National Institutes of General Sciences, of the National Institutes of Health.

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