

CHEMISTRY

Seaweed Aids Ulcers

Chemical research has resulted in a possible new medicine for peptic ulcers from a seaweed extract. Other advances were reported to the American Chemical Society.

SFAWEED extract as a medicine for treating peptic ulcers is a possibility reported to the American Chemical Society meeting in Atlantic City, N. J., by Dr. John C. Houck, director of the Children's Hospital biochemical research laboratory, Washington, D. C.

Carrageenin, a sulfated polysaccharide, that composes 60% to 70% of dried seaweed, apparently interferes with the development of ulcers by blocking the action of pepsin, Dr. Houck found in animal experiments. The chemical is not ready yet for human trials.

T. Lee and J. Bhayana of Georgetown University Hospital, Washington, D. C., were co-authors of the report.

Insecticides, herbicides and other agricultural chemicals share blame with domestic, industrial and natural wastes for contaminating the nation's water resources, F. M. Middleton of the Robert A. Taft Sanitary Engineering Center, Cincinnati, told the chemists. Effective and economical water treatment methods for many of the complex organic materials are not yet developed.

PLANT cells and tissues that make up beans, yams, potatoes, and several other

plants can now be successfully grown in large volume for the potential production of drugs, Dr. Louis G. Nickell, a plant physiologist, reported at the American Chemical meeting.

He explained to the scientists that the plant-cell growing technique resembles the growing of yeast in beer mash or the culturing of mold in deep tanks to produce antibiotic drugs.

This process on a large scale opens the possibilities for better production of plant substances such as steroids and alkaloids, which are valuable as drugs.

One of the plant tissues produced in large amounts in the experiment came from the Mexican yam, a source of steroid cortisone, used in the treatment of hormone deficiencies, rheumatic diseases, and allergic disorders. Alkaloids are highly important as sources of tranquilizing drugs, blood pressure reducing agents, for the drug atropine, an anti-spasmodic also used in surgery to diminish secretion, and morphine.

For the time being, no attempts have been made to produce specific chemical compounds, but Dr. Nickell sees the possibility that the products from the plant

cells may also evolve into medicines that are effective against diseases which do not now yield to antibiotics.

The research has been done at Charles Pfizer & Co., Brooklyn, and Dr. Nickell's co-worker on the report was Dr. Walter Tuleck, also of Pfizer. Laboratory cultures of tissues from higher plants in the form of colonies of free cells have lagged behind comparable work with animal tissues, it was said. One problem is apparently that plant cells tend naturally to bind together while animal cells in tissue culture have the reverse tendency.

Dr. Nickell expressed the belief that the most exciting possibilities as a result of the large-scale culture technique lay in the effects free growth will have on the plant cells.

Thailand Antibiotic

A NEW ANTIBIOTIC from a sample of Thailand soil has been successfully used against animal diseases.

Tylosin, as the antibiotic is called, is being investigated clinically for its effectiveness against staphylococcus and streptococcus infections, Dr. Robert L. Hamill told the American Chemical Society meeting. So far it has tested as relatively non-toxic. Tests have also been begun to determine its effects on human beings.

In addition to Dr. Hamill, Dr. Paul F. Wiley, Dr. Martha C. Stamper and Michael E. Haney Jr., all of the Eli Lilly and Company, were co-authors of the report. Tylosin was produced from a new strain of *Streptomyces fradiae*.

Bubbles Protect

MICROSCOPIC plastic bubbles more valuable than gold for embedding and protecting airplane and rocket instruments have been developed by F. T. Parr of Westinghouse Electric Corporation and announced to the Chemical Society meeting.

The new protective composition consists of microscopic plastic balloons of phenolic resins bound together by another plastic epoxy resin. It saves more than a quarter in weight over conventional filler materials. Since reduction of a pound of weight in airplane equipment is estimated to save \$765, it is rated as worth more than the value of gold, which is \$420 a pound.

The hollow resin bubbles are filled with an inert gas such as nitrogen. They were originally developed by the Standard Oil Company of Ohio to retard the evaporation losses on oil storage tanks.

From ordinary soft coal, chemists have obtained acids which promise new textile finishes, adhesives and binders for glass fibers, Drs. R. S. Montgomery and Wesley L. Archer of Dow Chemical Company, Midland, Mich., told the chemists.

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Columbium is used in some stainless steels designed to be welded or used at high temperatures; the element helps prevent changes in the steel's crystalline structure.



TRANSPARENT CERAMIC—A bar of Lucalox, a translucent ceramic developed at the General Electric Research Laboratory, Schenectady, N. Y., and a bar of fused quartz are heated by a blow torch. At a temperature of 2,350 degrees Fahrenheit, the bar of quartz bends under its own weight; the bar of Lucalox supports a 50-gram weight even as the temperature rises to 3,200 degrees Fahrenheit. The ceramic is made from aluminum oxide powder, pressed into shape and sintered. Microscopic pores or bubbles that make conventional ceramics appear opaque have been removed.