

# \$17,145 grant given for cancer research

The National Cancer Institute has awarded a \$17,145 grant in sixth-year support of a University project to synthesize a material that destroys cancer cells.

**LEROY H. KLEMM**, associate professor of chemistry, is director of the project and the grant, which will be effective Dec. 1. A similar amount is promised for 1962-63.

Klemm is trying to make organic chemical compounds which have similarities in chemical structure to a naturally-occurring material obtained from the may apple root, a plant that grows in the woods of Oregon and the Midwest. The material is called podophyllotoxin.

**ABOUT 1947**, it was accidentally discovered that podophyllotoxin would destroy cancerous cells but not harm normal cells in a test tube. Clinical trials indicated, however, that the material was too toxic—it killed the tumor and the host.

In Klemm's project, a compound is being sought that has similar tumor-inhibiting action but with the toxicity eliminated. Research along these lines was started in 1954.

"**THIS FAR**, we have not been

successful in getting the exact compound that we are looking for, but we have obtained one other substance which has properties very similar to podophyllotoxin," Klemm said.

This substance is being tested at present by the National Cancer Service Center, which has laboratories across the country. Tests, in animals, are being made against three types of cancer: leukemia, sarcoma, and carcinoma.

**SINCE 1959** Klemm has used ultraviolet light as an important step in the laboratory procedure to synthesize compounds similar to podophyllotoxin.

Podophyllotoxin is one of a group of compounds occurring in plants that come under the name lignans. Only a small number of lignans have tumor-inhibiting properties.

**THIS** tumor inhibition, Klemm said, seems to be connected with the over-all three-dimensional structure of the molecule. Those like podophyllotoxin have a right angular structure.

In the procedure, Klemm takes a long, thin, ribbon-shaped molecule that doubles back on itself. The molecule is made of hydrogen, and carbon.

**ULTRAVIOLET** rays are used to pinch the ribbon molecule together and to bend it upward to produce the angular structure. The band is clamped together in two places at the same time.

Klemm is working on another project under support from the National Cancer Institute to produce artificial cancer by chemical means. A greater understanding of cancer is being sought by discovering the three-dimensional geometry of the cancer progress.

**UNDER A** third project related to the first two, Klemm is working on the geometry of organic chemical reactions on surfaces. This project is supported by an Air Force grant.

Klemm also is director of the National Science Foundation undergraduate chemistry program.

## Conviction upheld

**MONTGOMERY, Ala.** (UPI)—An appeals court in Montgomery, Ala., has upheld the conviction of four white university professors and seven Negro integration leaders.

They were charged with disorderly conduct for trying to eat together in an all-white bus station restaurant.

## Infirmery

Attempting speedy recoveries to enjoy holiday fun are Jerry Ann Babcock, Patricia Hoff, Joanne Hinn, Virginia Becker, Mikell Thurston, Gerald Hurley, Andre Kemboko, Robert Kennedy, Richard Severson, Phillip Foster, Herold Hymen, Richard Reed, Gerald Erdman, Brian Mitchell, and Roger Newell.

**Infirmery to close**  
The Student Health Service will be closed Thursday. It will be open from 10 a.m. to 11:30 a.m. Friday and Saturday for **EMERGENCY** cases only. The doctor will be in at this time.

## Bryan to deliver lecture on Finland

Architecture of Finland and the Great White City in the North will be discussed in a slide lecture by Stanley W. Bryan, associate professor of architecture, at 8 p.m. tonight in room 150 Science.

An exhibit of the arts and crafts of Finland and photographs of old wood and masonry country churches will be shown in the lobby of Lawrence Hall.

Bryan spent nine months in Finland as a Fulbright Research Scholar last school year. Most of this period was spent in the capital city of Helsinki, but he also took lecture tours to smaller cities in the North.

## Algerian strike ends

**PARIS** (UPI)—French officials said Moslem Algerian prisoners have ended their 19-day hunger strike under a "compromise" agreement. Earlier Monday thousands of Algerian prisoners ended sympathy hunger strikes after they were guaranteed treatment as political, rather than criminal prisoners.

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