CHEMISTRY

Cancer and chemistry: More bad news

There are many advantages to a career in chemistry, but a greater chance of contracting certain types of cancers would not be one of them. A new study, however, the second in seven years, reconfirms previous findings: Laboratory chemists and chemical engineers do seem to have higher death rates from certain cancers.

Robert Olin of the Royal Institute of Technology in Stockholm recently completed a long-term mortality study on the graduates from that institute's school of chemical engineering from 1930 to 1950. His finding revealed that 58 of 517 graduates studied had died by 1974. This rate was not significantly higher than expected. The percentage of those deaths due to lymphatic kidney and bladder cancers, however, was significantly higher—3 to 10 times higher, in fact—than expected.

Olin analyzed the data to see whether exposure to chemicals or to some other common factors was linked to the higher cancer death rates. He divided the study group into those who had held only management positions, and those directly exposed to chemicals. He found that all but one of the cancer deaths occurred in the group with several years exposure to chemicals, either in the laboratory or in the production plant.

Olin's study, reported in the June 26 CHEMICAL AND ENGINEERING NEWS, came to a similar conclusion but was more comprehensive than a 1969 study of American Chemical Society members.

First hydrogen molecular ion spectrum

Using a new type of infrared laser spectrometer, a team at the University of Arizona has seen, for the first time, the optical spectrum of a hydrogen molecular ion. This molecule, nature's simplest, consists of the nucleus of a hydrogen atom, the nucleus of a deuterium atom and one electron.

Regular spectrometers identify the composition of molecules by measuring light absorbed or emitted. The new instrument identifies composition by detecting size changes as molecules collide with a strong laser beam. The hydrogen molecular ion showed up in the infrared region of the light spectrum.

The group, headed by William H. Wing, reported the finding in the June 21 PHYSICAL REVIEW LETTERS. The new technique, they state, may allow tests on relativistic and quantum-electrodynamic effects of molecules, and better determination of fundamental constants, such as the electron-proton mass ratio.

Roquefortine gives mice the blues

The same mold that turns milk into blue cheese also makes a less fortunate by-product—a nerve poison that causes convulsive seizures in mice. The by-product is an alkaloid called roquefortine, and is produced by *Penicillium roqueforti* as it grows on culture media. A new study focused on several "culture media"—the blue cheeses of Denmark, England, Finland, Germany, Italy, Canada and France—and found small amounts of roquefortine in them all.

Peter M. Scott and Barry P. C. Kennedy of Canada's Bureau of Chemical Safety Food Directorate, report their study in the July-August JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY. They developed a sensitive, reliable method for detecting the presence of tiny amounts of the alkaloid in blue cheese and tested 22 kinds. In all cases, they found lower concentrations of nerve poison in the white portions of the cheese than in the heavily molded parts.

The significance of this contamination cannot be assessed, they state, until more studies are done on the toxic dose levels in mice and other laboratory animals.