January

The January issue contains two guest editorials, both concerned with large-bowel cancer. Burkitt (Medical Research Council, London, England) sees this malignancy as an epidemiologic jigsaw puzzle which he imaginatively illustrates in his text figures. His assessment of present knowledge is that there is probably a relationship between colon cancer and environmental factors which slow down intestinal transit time, produce small, firm stools and alter fecal bacteria flora. One such factor is the low consumption of dietary fiber, which also affects cholesterol and bile acid metabolism.

In the companion editorial, Wynder and Reddy (American Health Foundation, New York, New York) agree that colon cancer is associated with environmental factors, but disagree with Burkitt that transit time in the intestine is important. They propose that dietary animal fat and/or cholesterol are significant in the etiology of large bowel cancer and that aerobic bacteria, bile acids, and neutral sterols (tumor promoters in animal models) relate to the dietary intake of fat and are modified by the composition of intestinal microflora. This dietary concept, they believe, is basic to any subsequent development of carcinogen, cocarcinogens, or promoters, all of which may have a function in the pathogenesis of colon cancer.

An unexpected high incidence of primary liver cancer in Geneva, Switzerland, is reported by Tuyns and Obradović (International Agency for Research on Cancer, Lyon, France). During 1970-72, 60 males and 11 females with the malignancy were recorded in the Geneva Tumor Registry. The incidence rate is 9.7 per 100,000 in males, a figure four or five times higher than that elsewhere in Europe. From the available evidence, the high incidence is real and not due to bias in coding, reporting or diagnosis.

In a controlled study of 80 patients with colorectal cancer, Moertel and associates (Mayo Clinic, Rochester, Minnesota) find that the combination of 5-fluorouracil (5-FU), methyl-1-1,3-bis(2-chorethyl)-1-nitrosourea, and vincristine produces toxicity comparable to that of 5-FU alone. At 10 weeks, the three-drug combination caused a 43.5 percent positive response rate compared to 19.5 percent with only 5-FU.

Testing the increased fibrinolytic activity in various malignant tissue culture cells of human and nonhuman origin, Laug et al. (Childrens Hospital of Los Angeles and the University of Southern California School of Medicine, Los Angeles, California) observe that malignant cells have a greater ability to induce fibrinolysis than do their normal counterparts. A correlation exists between the capability of the cells to cause fibrinolytic activity, to grow in soft agar, and to form tumors in immunosuppressed hosts.
Hilgers and co-workers (The Netherlands Cancer Institute, Amsterdam, the Netherlands) demonstrate higher immunofluorescent antibody titers to four herpesviruses in patients with Burkitt's lymphoma than in matched controls. Sera were collected in West Nile, Uganda, from 16 Burkitt's lymphoma patients, 16 controls of the same age and sex and 136 family members. The elevated titers to three of the four herpesviruses did not appear due to serologic cross-reaction.

The scarification procedure as a means of administering bacillus Calmette-Guérin has presented problems with respect to discomfort of the patient and to lack of standardization of incision length and depth between applications. Desner and associates (Baltimore Cancer Research Center, Baltimore, Maryland) describe a new apparatus devised to correct for these deficiencies.

**February**

In a preliminary report, Springer and associates (Evanston Hospital and Northwestern University, Evanston, Illinois) showed that blood group antigens M and N occurred in benign and malignant tissues of the human mammary gland. The T (Thomas-Friedenreich) and Tn precursor antigens were observed in malignant tissue from each of 15 patients with ductal carcinomas and/or adenocarcinomas. Both antigens were reactive in breasts with in situ carcinoma. Anti-T antibody, present in all human sera, was depressed in many breast cancer patients. The discovery of these tumor-associated antigens may permit consideration of active immunization over large body areas with a patient's autologous tumor cell membranes, preferably after treatment with sialidases to uncover additional T-like antigens.

Newell et al. (National Cancer Institute, Bethesda, Maryland), in the fourth publication on multiple primary cancers among blacks compared to whites, reported on further cancers in patients with neoplasms of the digestive organs. All patients who were entered in the Tumor Registry, Charity Hospital, New Orleans, Louisiana, between 1948 and 1970 were included. Both white and black men with primary cancer of the digestive organs had a twofold risk of developing a second neoplasm. Among both black and white women, invasive cancer of the cervix and ovary was frequent after an initial malignancy of the large intestine and anorectum. There was no excess of breast cancer.

Because of possible exposure of man to nitrosamines that might persist in natural ecosystems, Tate and Alexander (Cornell University, Ithaca, New York) assessed the stability of three simple nitrosamines in lake water, soil and sewage. For studies of these chemicals' persistence in water, littoral water was collected from Cayuga Lake, New York. In soil and sewage tests, silt loam and raw municipal sewage were
the materials. No degradation of nitrosamines was noted in lake water during a three and a half month period. A lag of 30 days was observed before the slow disappearance of the chemicals from soil. The compounds vanished slowly from sewage, but a minimum of 50 percent remained after 14 days. The results with soil and sewage suggest a microbial involvement in the decomposition of these nitrosamines.

To evaluate the carcinogenic effect of mustard gas, Norman (Medical Follow-Up Agency, National Research Council, Washington, D. C.) reviewed the 1956-1965 mortality rates for three groups of World War I Army veterans. Rosters of men born between 1889 and 1893, consisting of 2,718 exposed to mustard gas, 1,855 hospitalized with pneumonia in 1918, and 2,578 with wounds of the extremities (controls) were traced by the Veterans Administration's death records. Observed deaths from lung cancer were 69 for the mustard-gas group, as compared to 33 for the pneumonia group and 50 for the controls. The risk of death from lung cancer among men gassed, relative to that for the controls, was estimated as 1.3 with 95 percent confidence limits 0.9 to 1.9. The figures indicate that either a single exposure to mustard gas is not enough to be carcinogenic or that mustard gas is not a strong carcinogen.

Reuber (National Cancer Institute, Bethesda, Maryland) observed that 24-week-old male Buffalo rats ingesting N-4-(4'-fluorobiphenyl)acetamide were more susceptible to renal carcinomas than were female rats of the same age. Earlier studies showed that older, but not younger, Buffalo rats developed toxic renal lesions. The liver in older animals apparently does not metabolize chemicals as readily as in younger rats and more chemicals or metabolites are available for excretion by the kidney. Renal lesions develop when this amount is excessive or toxic to the kidney.

March

In a guest editorial, Wynder (The American Health Foundation, New York, New York) takes inventory of the progress made toward the reduction of tobacco-associated diseases since the 1964 Surgeon General's Report on Smoking and Health. Broad educational efforts have made the public increasingly aware of the relationship between smoking and the risk of disease. Particularly evident are the lower death rates from lung cancer among male ex-smokers. But the antismoking program has been less effective among young people, and increased sales of cigarettes indicate that purely informational approaches have not eliminated the health risks from the use of tobacco.

Smoking cessation clinics are another approach to the problem. Latest data from The American Health Foundation's Smoking Cessation Clinic show that about 30 percent
of those smoking 30 or more cigarettes per day who attended the clinic stopped smoking for a year. Additional research is needed to find methods that will help smokers give up—and stay off—the habit.

The development of tobacco products that provide satisfaction to smokers but do not damage their health is a practical goal. Progress has been made with lower tar and nicotine levels of cigarettes manufactured in many countries. Studies have shown a reduced risk of lung cancer among people who have smoked filter cigarettes for 10 years or more, compared with those who continue to use nonfilter cigarettes. This trend is evident, even when the concomitant reduction of tar and nicotine levels in nonfilter cigarettes is considered. As a result of this lower tar yield and less tumorigenicity of today’s cigarettes, we are beginning to see a plateau, if not an actual decrease, in lung cancer incidence.

In another paper, Treves and associates (The Weizmann Institute of Science, Rehovet, Israel) reported on mice treated with syngeneic lymphocytes sensitized against tumor cells in vitro to study the effect of the immune system on tumor metastases. Only 30 to 40 percent of control animals survived, compared to about 70 percent survival for treated mice. Apparently sensitization in vitro of lymphocytes can induce a more effective immune reaction than that produced by the tumor itself in vivo. The authors postulate that sensitization in vitro may be a useful form of immunotherapy for cancer.

Pogosianz (Institute of Experimental and Clinical Oncology, Academy of Medical Sciences of the U.S.S.R., Moscow) reviews experimental and cytogenetic data on the Djungarian hamster, a small Asiatic rodent. This animal, which develops spontaneous and induced tumors and has a simple karyotype, is a new, suitable tool for cancer research and cytogenetic studies.

The relationship between coffee drinking and cancer of the lower urinary tract was investigated by Simon et al. (Harvard School of Public Health, Boston, Massachusetts) in a case-control study of white women from hospitals in urban areas of Massachusetts and Rhode Island. Data on coffee and tea drinking, use of coffee additives, and cigarette smoking were obtained by mail questionnaires. Information was available for 135 women with cancer of the lower urinary tract and for 390 controls. No dose-response relationship could be shown between the malignancy and the usual daily coffee consumption. Use of nondairy creamers, saccharin or cyclamates was not associated with increased risk of the disease. For cigarette smokers, the risk relative to nonsmokers was 1.6. The lack of a dose-response relationship between coffee drinking and cancer of the lower urinary tract suggests a noncausal association.