Book Reviews

Cancer: radiations, virus, environment. (Vol. II.) J. Maisin. Paris, France: Casterman, 1949. Pp. 306. 120 fr.

Volume II, comprising Chapters V to VII of Dr. Maisin's treatise on cancer, is a critical review of the literature on the relationship of radiations, viruses, and environment to cancer.

The importance, in the etiology of cancer, of various agents, such as X-rays, radioactive substances, ultraviolet light, certain animal parasites, coal tar, and some hydrocarbons which produce prolonged or chronic irritation is now generally recognized. Cutaneous contact with solar rays or X-rays causes cancer of the skin. Inhalation of radioactive substances causes cancer of the lung. Ingestion of radioactive substances causes cancer of the bone. These phenomena belong to the category of environmental cancer. Dr. Maisin believes that cancerization by these rays, whether internal or external, is the result of mutation of normal cells into neoplastic cells. Another characteristic property of all the cancers caused by radiation is a long period of latency. In man, this period is from 10 to 20 years (from the last irradiation to the onset of the cancer). It seems, therefore, that the cell which has undergone mutation rests dormant for years without division. The altered gene, one could call a mutagene. The atomic bombs that wiped out the cities of Hiroshima and Nagasaki in 1945, although they spared a certain number of humans, different species of animals, and numerous plants, have tragically placed these survivors under ideal experimental conditions for the study of the mutagenic action of penetrating rays. All have been largely irradiated with sublethal doses of α, ß, and γ rays. It will be of great value to observe what becomes of their descendants. The accident having occurred, it will be a pity if science cannot profit from it.

It is now well recognized that cancer in animals can be caused by parasites *Gongylonema neoplasticum*, and *Cysticercus fasciolaris*, and by viruses—Rous chicken sarcoma, Fujinami fowl myxosarcoma, Shope rabbit papilloma, Lucké frog kidney carcinoma, Bittner mouse breast cancer, and Yoshida rat ascites sarcoma. (YOSHIDA, T., MUTO Y., and SASAKI Z. *Proc. imp. Acad., Tokyo*, 1944, *20*, 611. Note by K. Sugiura.) However, there is no evidence that cancer in man is caused by parasites or viruses, although this assertion has been made frequently. Carcinogenic parasites or viruses themselves would not be able to initiate a malignant tumor if the environment and genetic factors of the host were not favorable.

Although cancer is not properly termed an hereditary sickness, heredity plays an important role in the genesis of cancer. In certain types of cancer, hormone influence also plays a role in the formation of malignancy. Without this hormonal influence, in spite of heredity, these cancers will not appear. The influence of external environment in the development of human cancer has long been recognized. Percival Pott, in 1775, noted that cancer of the scrotum was unusually common among chimney sweeps. Subsequently, various environmental or occupational cancers have been described. Thus cancer of the skin, lung, and bone by contact with radioactive substances and X-rays; cancer of the scrotum, face, hands, bladder, and liver by contact or ingestion of hydrocarbons; and skin cancer by solar rays. Thus a number of human cancers are known to be of extrinsic origin, but a substantial proportion can be prevented by environmental control in industry.

Finally, Dr. Maisin hopes for discovery of a "penicillin or sulfonamide" for cancer cells. He thinks, however, that the discovery of a carcinolytic substance is further off than the means for the ultimate prevention of cancer.

Dr. Maisin deserves to be congratulated for this valuable addition to cancer literature, and students of cancer may greatly profit from it. The bibliography includes 739 papers, written by 626 individuals and joint authors. The first four chapters, treating the subject of heredity, hormones, and carcinogenic substances, form Volume I of this work.

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Human ancestry from a genetical point of view. R. Ruggles Gates. Cambridge, Mass.: Harvard Univ. Press, 1948. Pp. xvi + 422. (Illustrated.) $7.50.

Nowadays a book on human evolution has a definite reader appeal. This fact imposes on the author a demand for a generally high level of performance—quite apart from his obligation to anthropology, to the reader, and to clear, simple writing. We have every right to expect authoritative reporting and objective interpretation. There are certain descriptive facts concerning fossil man and modern races that are the common possession of the literature in this field and these can be brought together with reasonable facility. It is not so much, therefore, the assembling as the interpreting that becomes important.

Human ancestry does not fulfill this demand. It is unevenly written; one has the feeling that it was written in spurts, with parts, or even whole chapters, inserted as afterthought. Well-established evolutionary concepts are presented almost as though they were unique to the present volume. For example, much is made of "parallel evolution" as a relatively neglected avenue of interpretation; yet Le Gros Clark for the Primates and Olson for the mammals have developed this theme in precise detail.

The lay reader will be dismayed by the interjection into an acceptable literary style of very technical botanical and zoological material as evidence to support sweeping generalizations. The result is rather like encountering a number of road repair and detour signs along a fine concrete highway.

Prof. Gates insists that there are five species of living *Homo: H. australicus, H. capensis, H. africanus, H. mon-*