

tion alone was only one of the factors involved, but not sufficient to cause cancer. It is my opinion that this sort of reasoning is not entirely convincing as long as data are not available on the duration and severity of the vesical infection in the cancer positive and negative cases, as it has been shown that at least in the experimental production of parasitic liver tumors, this factor plays a definite role in determining the incidence and occurrence of these neoplasms in the liver of rats.

There exists, however, circumstantial evidence which throws some serious doubts on a direct and chief causative role of the parasites located in the bladder. In spite of the fact that pulmonary schistosomiasis is not a rare occurrence, this condition has so far never given rise to the development of a pulmonary tumor, although it results in circulatory disturbances which are considered by some investigators as a fundamental cause of malignant neoplastic growth (chronic impairment of the blood supply). To this it may be added that the incidence of intestinal *Bilharzia* carcinoma is negligible when compared with the high frequency of *Bilharzia* papillomatosis of this organ, and that there is a great rarity of intestinal cancer in general among the inhabitants of Egypt (Dolbey and Mooro). The predominant occurrence of the *Bilharzia* tumors in the dependent and posterior parts of the bladder, that is, in locations identical with those of the cryptogenetic tumors, suggests that not the intravascularly located parasites or their ova, but some unknown nonparasitic agent plays apparently an important role in determining the site as well as the character of the proliferative epithelial response. It is scarcely conceivable that this part should be assumed by a hypothetical virus harbored by the worms, as no such tissue response is observed in other locations in most instances and does not represent even in the bladder a constant occurrence.

The conception of a significant etiologic role of a nonspecific chronic irritation of the bladder mucosa may be dismissed not only on general grounds as unsatisfactory, but can be disregarded because the chronic cystitis with stagnant urine so often existing in old men with hypertrophy of the prostate gland as well as with old women with a cystocele on account of a uterine prolapse, does not show any excessive tendency toward vesical cancer. The etiologic role of a chronic mechanical traumatization of the bladder tissue by the ova and their spines can also be discountenanced, as chronic mechanical trauma is scarcely ever the direct and main cause of any cancer. The remarkable rarity of cancer of the uterine cervix in completely prolapsed uteri, in which the cervix is exposed in the vulva not only to a continuous chemical irritation from urine and feces, but also to various kinds of mechanical injury, such as friction, etc., should discourage any attempt to attach any appreciable weight to this factor.

Every one of the theories cited focuses its entire attention upon the pathologic conditions present in the bladder. None gives any consideration to the fact that schistosomiasis is a disease affecting several organs in addition to the bladder, which may very well exert a definite influence upon the