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OCCUPATIONAL AND ACCIDENTAL TUMORS OF THE NERVOUS SYSTEM

1. GENERAL ETIOLOGICAL ASPECTS

THE occurrence of benign or malignant tumors of the nervous system resulting from some injurious occupational activity is not known, according to the data available at the present time. The prevalent theoretical conceptions as to the causative factors active in the cancerigenesis of the nervous system, especially the brain, are not favorable to a serious consideration of such interrelations, as they are based mainly upon the theory of *Cohnheim* (misplacement of embryonic nerve tissue and tissue malformations) (Cushing; Bailey and Cushing; Ostertag; Fischer-Wasels; Globus; Henschen; Dietrich; and Gruber). Apart from the fact that the alleged embryonic character of the glial foci, which are claimed to represent the potentially blastogenic anlagen, has been challenged with good cause by other investigators, the successful production of cerebral gliomas by the action of recognized chemical carcinogens, accomplished in recent years, provides additional evidence in support of the conception that other factors, especially exogenous chemical agents, than embryonic cellular foci may be involved in the causation of neoplasia of the nervous tissue. Such a possibility deserves serious attention for several additional reasons. The experimental carcinogenesis obtained with various chemicals in different organs (skin, lung, liver, and bladder) has shown definitely that embryonic rests are neither involved nor essential for the development of these malignant tumors, and that they do not play any important role in the production of the great majority of the known occupational neoplasms. Toxicological studies have demonstrated that a great number of chemical agents (mercury, lead, manganese, arsenic, aniline and other aromatic nitro- and amino-derivatives of benzol and naphthalene, carbon monoxide, *hydrogen sulfide, carbon disulfide, ethylene glycol dinitrate, and nitroglycerin*) exhibit a definite and even a marked affinity for the tissues of the nervous system, and are the cause of more or less extensive degenerative as well as regenerative and reparatory lesions (Bumke and Krap). Inasmuch as some of these chemical agents listed exhibit definite carcinogenic properties in other organs than the brain, it must appear peculiar that none of these chemicals, frequently causing occupational poisoning of acute and chronic type, should ever have caused a cerebral tumor, especially if an activation of the dormant neoplastic potentialities of the numerous embryonic rests, said to be scattered throughout the brain, would represent the only action necessary. If physical