

Letter to the Editor

Cancer of the Nasopharynx

Marvin A. Schneiderman in reviewing the U.I.C.C. Monograph Series, Vol. 1, "Cancer of the Nasopharynx," [C. S. Muir and K. Shanmugaratnam (eds.)] (8) raises the question of how justifiable it is to spend money and the time of expert scientists on problems which are of no imminent concern to the countries which supply the funds. "Should Europeans or Americans, in whose countries this disease is so rare, devote their skills to this problem in preference to the problems derived from their own industrial cultures — where the possibility for life saving (*i.e.*, prevention) is much greater?"

There is no general answer to this question. However, the particular case of nasopharyngeal tumors can illustrate how difficult it is to foresee where any piece of research may lead and who may benefit from its results.

Three years ago we became interested in nasopharyngeal tumors of the Southern Chinese; we decided to reexamine Chinese incense smoke for carcinogens, in spite of previous evidence which was not encouraging.

In searching for nitrosamines by the method of Preussmann *et al.* (7) a bright reddish spot was noticed on thin-layer chromatographs sprayed with sulfanilic acid (9). Following this observation the constituent of Chinese incense smoke giving this result has been identified as sinapylaldehyde (3,5-dimethoxy-4-hydroxycinnamaldehyde) derived from sandal wood (10). Other angiospermous woods also yield sinapyl (and related) aldehyde (5); its concentration is particularly high in eucalyptus wood, an introduced species that grows successfully in Kenya. Among inhabitants of the Highlands of Kenya, nasopharyngeal tumors are quite frequent (3).

Since we started this work unexpected findings have been published indicating that among furniture workers in England the incidence of adenocarcinomas of nasal sinuses is rather high (1, 2). Similar reports have also come from Holland (4) and from France (6). Although this tumor differs histologically from the nasopharyngeal epithelioma, the possibility is not excluded that a similar etiological factor is involved in both types of nasal tumor, the difference being due to the physical properties of the respective materials, smoke in one case and hardwood dust in the other.

The role of α,β -unsaturated aldehydes from wood lignins in the etiology of nasal tumors requires much more detailed study. The problem might be complicated by additional factors. However, it shows how concern with an "exotic" type of cancer became in the course of 1 to 2 years an

urgent industrial problem in England and in other European countries.

From its inception humanity has lived under conditions such as can still be encountered only in a few areas of the world and was exposed to "natural" environmental carcinogens, the identification of which has only begun. There is great urgency to investigate now the disease patterns and the possible etiological factors of tumors in developing countries as long as there remain communities as yet little affected by the industrialized way of life. From these no doubt much could be learned about our own diseases which, having become "diluted," are more difficult to correlate with the specific causative agents. Moreover every discovery of carcinogens having new chemical structures brings nearer the identification of the essential features and of the biochemical processes which form the basis of tumor induction.

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