

tend to leave the impression that occupational cancer is an unimportant subject or that epidemiologic investigation and laboratory experimentation are so flawed as to be useless. Clearly, I failed in my first objective as far as Dr Saracci and his cocorrespondents are concerned. They apparently did not hear me say that "Even if the proportion of cancer deaths attributable to occupation is only 2 %, it provides no basis for complacency. Two percent of all cancer deaths still represents a lot of deaths and a lot of suffering [p 183]." In so far as they do not, in their letter, dismiss out-of-hand Doll & Peto's (1) estimate of the contribution of occupation to the causation of cancer in the United States, it may seem that I was preaching to the converted on this topic. But that was not true for all members of the audience at my lecture in Dublin. After my lecture one member of the audience, to my amazement, announced that, in his opinion, if any working person develops cancer it should be *presumed* that his/her cancer is of occupational origin. It has always been my view that an occupational cause should routinely be *considered* for every case of cancer whether occurring in an actively working person or in a pensioner, but to *presume* that all cancers are work-associated is, in my opinion, nonsensical.

I do not disagree with some of the additional perspectives to occupational cancer which Dr Saracci and his cocorrespondents seek to provide in their letter, but it worries me that, by confining their comments to occupational causes of cancer, they once again draw attention away from nonoccupational causes which, overall, are at least an order of magnitude more important.

I take more hardly the criticism that I left untouched the question of how false results can be reduced to a minimum in laboratory tests. Surely, from what I said on page 185 of my paper, it was possible to deduce that false results in carcinogenicity tests in animals could be reduced by the avoidance of overfeeding and by the provision of diets that are correctly balanced in respect of mineral content? If not, then may I be permitted to direct attention to other papers that I have written on this important and complex subject (3, 4, 5, 6). Since I am not an epidemiologist, I hesitate to advise on how that profession can do better research than now. Nevertheless, I permit myself to be horrified every time I hear, as I not infrequently do, of recently started epidemiologic studies aimed at defining occupational lung cancer risks while little or no attempt is being made to gather information on smoking habits.

Since my first involvement in the field of cancer prevention during the 1950s and 1960s (2), I have been conscious of the need not only to set priorities for research, but also to keep such priorities under constant review. For the reasons stressed by Dr Saracci and his cocorrespondents, occupational cancer merits a higher priority in relation to cancer prevention than its overall contribution to the human cancer burden may suggest. Nevertheless, it would be wrong to leave

Author's reply

The objectives of my review "Occupational Cancer: Where Now and Where Next?" (*Scand J Work Environ Health* 11 (1985) 181—187) were, first, to provide a perspective for viewing occupational cancer against the much broader background of all causes of cancer, most of which are nonoccupational, and, second, to stress the difficulties of epidemiologic and laboratory research in relation to cancer etiology. I did not in-

the general public with the impression that the complete elimination of occupational cancer would radically change the present cancer scene.

References

1. Doll R, Peto R. The causes of cancer: Quantitative estimates of avoidable risks of cancer in the United States today. *J Natl Cancer Inst* 66 (1981) 1191—1308.
2. Raven RW, Roe FJC, ed. The prevention of cancer. Butterworths, London 1967, pp 1—397.
3. Roe FJC. Are nutritionists worried about the epidemic of tumours in laboratory animals? *Proc Nutr Soc* 40 (1981) 57—65.
4. Roe FJC. Testing *in vivo* for general toxicity and carcinogenicity. In: Gorrod JW, ed. Testing for toxicity. Taylor and Francis Ltd, London 1981, pp 29—43.
5. Roe FJC. Testing for carcinogenicity and the problem of pseudocarcinogenicity. *Nature* 303 (1983) 657—658.
6. Roe FJC, Tucker MJ. Recent developments in the design of carcinogenicity tests on laboratory animals. *Eur Soc Stud Drug Toxicity* 15 (1973) 171—177.

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