

STUDYING THE ENVIRONMENT

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FIRST, Dr. Hasterlik showed how a typical case of occupational illness can be detected by means of a thorough clinical examination. Dr. Lauer, in turn, pointed out how the pertinent plant operations can be surveyed comprehensively to uncover all contributing factors which predisposed to the patient's illness. After this survey has highlighted the potentially hazardous exposures of the worker, an industrial hygiene study of the environment is undertaken.

Such a study is a qualitative and quantitative investigation to evaluate in detail the actual exposures experienced by the worker. Toxic materials which are encountered in industry may enter the body by inhalation, ingestion or cutaneous absorption. The particular mechanism of intake involved will ordinarily be indicated by the findings of the preliminary survey, as indicated by Dr. Lauer. On considering in this instance the findings of the clinical examination and of the plant survey, it seems plausible to suspect that the worker's most significant exposure was to an atmosphere contaminated with beryllium fume and dust.

One of the initial steps in undertaking an investigation of this nature is to review the worker's job, the duties which are performed by him during the course of his entire work day. This analysis will indicate all of the potentially hazardous beryllium exposures experienced by the worker and will show the amount of time involved in each instance. Each of these exposures will be evaluated later by air sampling.

Another factor which deserves consideration is the effect of any ventilation or air currents in the vicinity of the operator. Control ventilation should be tested to determine its effectiveness and, if possible, a pattern of the air currents should be made to demonstrate how the contamination spreads from its source of generation. With an understanding of these factors it is possible to proceed with the actual evaluation of the worker's exposures by air sampling.

The selection of air sampling instruments and technics is dependent on several considerations, such as the type of subsequent laboratory analyses to be performed, the type of materials involved and the estimated level of contamination which is anticipated in the workroom air. Although there are several different types of instruments which can be applied to an appraisal of beryllium exposures, a few representative types will be demonstrated in the illustrations which follow.

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