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RESEARCH DEPARTMENT Box 431, Whiting, Indiana - March 12, 1948

Dr. Robert A. Kehoe
Kettering Laboratory of Applied Physiology
University of Cincinnati
Cincinnati 19, Ohio

Dear Dr. Kehoe:

We have the continuing general problem of safeguarding the health of our employees who may be exposed to toxic materials in either experimental or manufacturing operations. Our usual procedure in the past, where such hazards were known to exist, has been to set up working conditions in which the exposure of the operators or experimenters to toxic substances would be nil or of a very low order. This, it seems to us, is quite adequate in most cases, but in operations where the toxic effects of the substances are cumulative it is difficult, if not impossible, to determine whether the safeguards are inadequate until an obvious case of poisoning results. It would be desirable to discover any low order of poisoning or cases of cumulative poisoning, before the symptoms became obvious, by some sort of periodic examination of the persons involved. Also in some cases people may even be working with materials, the toxic nature of which may not be known or suspected.

It is our understanding that the medical staff of one large chemical company has reached the tentative conclusion that the first evidence of poisoning of any kind in the human body is shown by a lowering of the blood pressure. Consequently, this company has adopted the practice of taking the blood pressures, at frequent intervals, of those persons who may be exposed to toxic substances. Where any lowering of the blood pressure from that which is normal for the individual is observed, poisoning is suspected. This method, if adequate, would be simple for us to employ as an added safeguard to the health of those persons working where actual or potential hazards exist. We should like to have your opinion of the value of the above method, as a general test, and for various specific types of poisoning likely to be encountered in industry.

We have been galvanized into action on this matter by an uncertainty in our minds concerning the potential hazard of one of our experimental operations. In this work some people are exposed day after day to materials containing very minor amounts of cobalt carbonyl (less than 0.1% concentration). Cobalt carbonyl is known to be toxic but earlier estimates by us appraised the hazard as being essentially nil, because the quantity which could get into the

body during any working day would be extremely small. We have been unable to find in the literature any definite statement that cobalt carbonyl is a cumulative poison but, if it is, the hazard may be greater than we previously thought.

We should appreciate receiving any information and opinions which you may have concerning the toxicity of cobalt carbonyl and any comments you may wish to make regarding the handling of it. We would also appreciate receiving your comments as to the significance of blood pressure changes in cases of cumulative poisoning.

Very truly yours,

B. H. Shoemaker

B. H. SHOEMAKER
Asst. Director of Research

CEA/ss
cc - Dr. F.F. Heyroth