

shall be controlled by acquisitive groups, commercial or professional, or by bodies which, whether voluntary or governmental, are broadly representative of public and professional interests, and which proceed in policy and in administration by democratic process."

As Michael Davis saw the future, the ideal for medical care would be to preserve individuality within organization "by participative processes of political, economic and intellectual democracy." To achieve this aim "Our hopes must rest upon the courage of those who appreciate human needs and are willing to face mistakes rather than to delay action; upon the wisdom of those who think of social accomplishments as well as of science; and upon the good will of the millions who have it in their hearts to fulfill democracy as well as to defend it."

It was the qualities of sound judgment, common sense, intellectual and moral courage, combined with human understanding and clear thinking that made Michael Davis a pioneer in medical care. It was these qualities that made it possible for him to work with vision and steadfastness for better health service for millions of Americans.

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Editor*

Child-Proof Packaging For Drugs: Any Action?

Last fall the Food and Drug Administration began to require special packaging for drugs that children might accidentally swallow in the home. Included in this group were narcotic, depressant and stimulant drugs, totaling several thousand items. The regulations proposed a type of package that could be opened and closed by 90 out of 100 adults, yet could not be opened by about the same proportion of children between the ages of 42 to 51 months.

Certainly this is a form of environmental protection which should be acceptable to a society concerned about the health and welfare of its children. Yet since October 1971 nothing more has been heard about this requirement. Is there information available on how many drug companies have complied or are trying to do so, how many are recalcitrant, what steps the Food and Drug Administration is taking to implement its regulations and to inform the public about such packaging? Clearly, a progress report is in order.

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How Hazardous are Low Concentrations of Inhaled Particles?

For about a hundred years it has been known that high concentrations of inhaled particulate matter can produce interstitial fibrosis of the lungs, a condition that may be associated with pathological complications.¹ This pathological process and its consequences have been observed in many occupations, e.g., among miners, knife grinders, sand blasters, asbestos workers and others. Relatively less is known, however, about the effect of inhaling low concentrations, especially over a longer period of

time. Two studies recently reported throw some light on this problem and raise wider issues.

Murphy and his co-workers at the Harvard School of Public Health and the Boston University School of Medicine present the results of a survey in which they endeavored to determine the prevalence of asbestosis in pipe coverers in a shipyard who had not been engaged in repair work, and consequently had not been subject to massive exposure.² These workers (101) employed at this work for an average of 17.4 years, were compared with a matched control group (94) who worked there for an average of 17.1 years as shipfitters and pipefitters. The findings showed that asbestosis, as defined by three or more standardized clinical abnormalities, was eleven times more common among the pipe coverers than among the controls. The earliest case was found after 13 years of employment, and after 20 years the prevalence was 38 per cent. The authors conclude that continuing exposure to low concentrations of asbestos is dangerous and can lead to pulmonary fibrosis. They propose that the threshold limit values for asbestos should be lowered.

The question whether low concentrations of respirable microscopic fibers can cause disease is raised more generally by a study of "ferruginous bodies" in lung tissue reported by Rosen, Melamed and Savino of the Memorial Sloan-Kettering Cancer Center.³ They point out that certain microscopic fibers become coated with an iron-protein matrix after inspiration into the lungs, and that this reaction may be elicited by a variety of respirable fibers, not only asbestos. These coated fibers, called ferruginous bodies, were first recognized among asbestos miners and persons subject to heavy industrial exposure. Over the past decade, however, observations in different geographic areas have revealed that ferruginous bodies occur in the lungs of urban residents who have not had any known exposure to asbestos. Rosen and his associates used chemical digestion of lung tissue to determine the number of ferruginous bodies in comparable specimens of lung tissue from a group of 86 patients, and to relate the number of these bodies to certain clinical data.

On the basis of their findings these investigators suggest that there is nearly universal exposure in the urban environment to respirable fibers capable of being converted to ferruginous bodies. A variety of such fibers are relatively new environmental contaminants and probably account for some of the ferruginous bodies found in the lungs of individuals not exposed to asbestos. The authors do not reach any conclusions concerning the possible pathogenic role of ferruginous bodies. But they do suggest further research which may help to clarify the significance for disease causation of inhaling low concentrations of such fibers over periods of time. As they point out it would be of considerable interest to know "if there has been an increase in the number of ferruginous bodies in the lungs of the general population in recent years. Such information could be derived from quantitative studies carried out on pulmonary tissue stored several decades ago.

"Ultimately, the crucial question is whether fibers other than asbestos which produce ferruginous bodies can cause disease." Clearly, an answer to this question requires