

DR. CRALLEY:

Our next speaker is going to talk about some of the Basic Considerations in the Pathological Studies of Ferruginous Bodies. Many of us know Dr. John Davis. Just a couple of interesting sidelights: he is an associate of Dr. John Beatty, who many of us know and deeply respect. Another interesting sidelight: he broke the equivalent of the sound barrier in Cambridge, he was the first person to receive a fellowship paid by an industrial supported group, which is the Asbestos Research Council, if I am not mistaken. This is quite an accomplishment and an attest to the esteem to which they hold him. It is indeed a pleasure to have Dr. Davis discuss our next subject.

PATHOLOGICAL STUDIES OF FERRUGINOUS BODIES: -
BASIC CONSIDERATIONS

John M. G. Davis, Ph.D.*

Before the advent of electron microscope studies comparatively little was known about the structure and methods of formation of asbestos bodies. These structures were first observed by Fahr and Feigel in 1914,¹ but they were not immediately associated with asbestos exposure. They were later described by other workers including Cooke in 1924² and Stewart and Haddow in 1929.³ Gloyne in 1932⁴ gave detailed descriptions of the very pleomorphic gross anatomy of asbestos bodies, and also demonstrated that each body contained a central core of asbestos dust surrounded by a coating containing both iron and protein material. Electron microscope studies, commenced in 1962 (Davis 1965),⁵ and still in progress, have given a great deal of new information which is best summarized as follows:

1. Asbestos body formation is an intracellular process and the bodies are formed mainly in giant cells, although single macrophages and fibroblasts may be involved.
2. The body coating consists largely of small dense granules approximately 60A° in diameter which are believed to be Ferritin.
3. The coating is usually laid down as a single layer, but sometimes there are several layers of varying thickness and density.
4. The outer layers of a few bodies consist of fine filaments about 60A° in diameter that appear to be Apatite Crystals.
5. Only a small proportion of asbestos fibers ever become coated.

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