

FROM MONSANTO CHEMICAL COMPANY  
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NEWS

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ATLANTIC CITY, N. J., Oct. 7 -- Greatly advanced developments in science brought about during the war, the discovery of new elements and the newly acquired radioactive substances have greatly increased the need for alert industrial medicine and hygiene, Dr. R. Emmet Kelly, of St. Louis, medical director of Monsanto Chemical Company said here last night.

Addressing the 75th annual meeting of the American Public Health Association here, Kelly said that health problems associated with the nation's newer technology have emphasized the need for more immediate physiological and biological investigations.

Kelly stressed that radioactive materials can be manufactured shipped and handled safely and that, to date, the record has been excellent. He warned, however, that as the use of the substances becomes more widespread, greater danger may exist through complacency and lack of appreciation of their hazards.

"The deleterious effect of radioactive materials on humans," Kelly said, "is produced by setting up destructive ionizing reactions in the tissue. The response varies with the type and amount of exposure. Damage to the germinal cells, the bone marrow, and the lymphatic tissues, and the occurrence of malignant changes comprise the conditions to be expected and guarded against."

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"For the future," he added, "I see three health problems in the radioactive field. The first is accidents such as spillage, breaks and their prevention. The second is unfamiliarity and insufficient knowledge of how to handle these materials. The third problem is that of chronic, low level exposure. Most investigators and workers will be using negligible amounts of radioactivity in tracer experiments and only simple precautions will be needed. However, when we calculate the sum total of all the radioactive isotopes used over the entire country, the serious character of the disposal problem becomes evident. Simply diluting the material and letting it pass into our streams and rivers will not suffice."

The industrial chemical field, Kelly asserted, is broadening too rapidly and too extensively for toxicological investigations to keep pace. Although many new products are being developed by manufacturers, the problem is to make certain that no new chemical is used in a manner in which systemic toxicity or skin irritation might result either in workers making the product or in consumers.

"For example," Kelly continued, "every new textile chemical developed by Monsanto is subjected to a laboratory study for such reactions culminating in patch testing on 200 human subjects. In plastics, experimentation involving, in some cases, two-year feeding tests, must be made before they can be marketed. Some substances are so innocuous that they can be used in any application, while the use of others must be more limited."

In discussing the new use of the rarer metals such as vanadium, beryllium, tellurium, cadmium and uranium, Kelly said there is no common

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toxicological action or symptom associated with them. "Very little is known about some of these substances, because as yet they have been used in limited amounts in restricted work or have not been recognized as having distinctive physiological properties."

Kelly also mentioned the use of high frequency radiation popularly called microwaves. These radiations are the basis of the electronic field and have wide industrial application. It is important that their effect on the human being be determined, he stated.

"Private industry and government agencies are spending annually on scientific research over \$1,200,000,000," Kelly concluded. "This work will narrow the gap between visionary products of today and the activities of tomorrow and will furnish us a constant source of associated health problems."

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