

## **Historic, Archive Document**

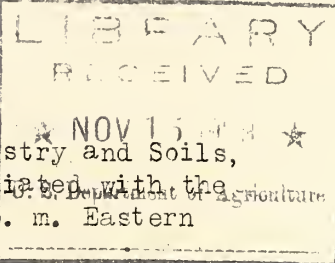
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UNCLE SAM LOOKS AT SPONTANEOUS IGNITION

A radio talk by Dr. W. W. Skinner, Bureau of Chemistry and Soils, delivered through Station WRC and 32 other stations associated with the National Broadcasting Company, November 4, 1929 at 1:35 p. m. Eastern Standard Time.



The loss from fire in the United States exceeds 450 millions of dollars annually and approximately one-third of this loss or 150 millions - results from fires on farms or in rural communities. Many of the causes of this enormous fire loss are well understood, and effective measures have been developed for their prevention and control. One prominent cause, however, has always been somewhat of a puzzle, that is, "spontaneous combustion."

The loss from the spontaneous ignition of agricultural products and from the spoilage of such products by spontaneous heating even when no fire results, amounts to many millions of dollars each year. Agricultural products subject to this phenomenon include hay, grain, feeds, fertilizers, and farm manures. Spontaneous heating and ignition also cause tremendous losses of industrial products such as unrefined sugar; hemp, and other combustible fibres; paints and varnishes; animal and vegetable oils; coal; charcoal; and sawdust.

Although it is an established fact that spontaneous heating and ignition occur in certain products, very little is known concerning the exact cause. Take hay, for example. Improperly cured hay (especially the legumes) when stored in large piles, or hay which has become wet subsequent to storage, will heat spontaneously. Under certain conditions this heating will progress until the dangerous temperature of ignition is reached. It is generally believed that the initial heating is caused by the action of micro-organisms. The bacteria are eventually killed by the heat which they produce, at a maximum temperature somewhere in the neighborhood of 160° F. It is thought that the subsequent higher temperatures developed in the hay are the result of chemical reactions.

The phenomenon of spontaneous combustion constitutes one of the greatest problems confronting scientists today. The United States Department of Agriculture, recognizing its economic importance, has undertaken research on this subject, both in the laboratory and in the field. The studies are being made on hay but the investigation will later be broadened to include other agricultural and industrial products. A very interesting series of experiments is being conducted at the Department's experiment farm at Beltsville, Maryland, near Washington, where quantities of alfalfa in storage are being studied under conditions believed to be ideal for spontaneous heating and simulating as nearly as possible conditions on farms. It is expected to obtain from these experiments, which will be carried on over a period of years, results that will assist in materially reducing the large loss from the spontaneous heating and the ignition of agricultural products.

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The United States Department of Agriculture in cooperation with the National Fire Protection Association is calling a conference on the spontaneous ignition of agricultural and industrial products, to be held at the Raleigh Hotel, Washington, D. C., on November 14 and 15. The purpose of this conference is, to discuss work which has already been done on the subject of spontaneous ignition, to determine the most urgent problems in this field which confront agriculture and industry, and to formulate a national correlated plan of fundamental research. Addresses will be delivered at the conference by Mr. Frank C. Jordan, President of the National Fire Protection Association, by Hon. R. W. Dunlap, Assistant Secretary of Agriculture, and by speakers of National prominence in fire prevention activities. Scientists of the government departments and of various organizations and corporations as well as representatives from interested agencies also will be present.

I wish to point out that this conference will be open to any one, and I cordially invite any one either directly or indirectly interested in this problem to attend. A program will be gladly sent to any one requesting it of the United States Department of Agriculture, Washington, D. C., or of the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts.