

FLOUR MILL EXPLOSIONS INVESTIGATED BY COLLEGE

Prominent Penn State Faculty Members, and Graduates Active During War in Effort to Eliminate Dust Explosions in Feed and Flour Mills, Elevators and Industrial Plants

Penn State will be interested in a little history, and a statement of facts concerning the campaign for the prevention of grain dust explosions in flour mills, elevators and cereal mills, that was inaugurated by the government when this country entered the world war. Penn State will be interested because a number of Penn State men took a leading part in this work, and too, because at this college, in connection with the Department of Flour Mill Engineering, early investigations were conducted two or three years previous to the war.

In an editorial "The Northwestern Millers" in commenting on the valuable work rendered by the staff of trained men in this work, has this to say concerning the Pennsylvania State College: "Most of the early experimental work of the investigation into the causes of grain dust explosions was done in the Pennsylvania State College under a cooperative agreement arrived at between the faculty of that institution and the Department of Agriculture. At the request of the Experimental Mill Department of the college, materials furnished by various milling companies

Work by the Bureau of Chemistry in connection with dust explosions in feed mills, flour mills, elevators and industrial plants was begun shortly after an explosion in a feed grinding plant in Buffalo in June 1914, which caused the death of thirty-three men, injured seventy others and damaged a great quantity of grain and destroyed the plant. It was shortly after this explosion that investigational work was started at the college.

At the time the country entered the war, the campaign was organized and began work under the direction of the Bureau of Chemistry, of the U. S. De-

partment of Agriculture, the work being conducted under the immediate supervision of Mr. D. J. Price of Washington, D. C. The country was divided into six divisions, each with its head who directed the field work and investigation within his division or district. Each district had its headquarters, with a number of field men, each assigned to a certain definite territory in that district. It was in this way that the whole country was covered and inspections made of thousands of mills, elevators and other industrial plants.

The fact that there were less fires and explosions in mills and elevators during the last two years by sixty per cent than ever before (while fires in general throughout the country were greater) is attributed largely to the efficiency of this organization. This meant that millions of bushels of grain, mostly wheat, was saved, much loss of life prevented and the destruction of millions of dollars worth of property prevented.

Had all the emergency war work been run on an economical basis and business like method as this work, a few billion dollars would have been saved the country. Each head was required to make a close estimate of expenses of his district. This estimate included salaries and traveling expenses, the number of miles of each trip and the period of time to cover the same. The appropriation of funds to carry on this important work was very small considering the millions involved, hence it was necessary to plan before undertaking the actual work. The funds

available for this work were barely sufficient to carry the work up to the end of the fiscal year on June thirtieth and as congress made no provision for carrying on this work, though asked and recommended by the Secretary of Agriculture, the work ceased on that date, but shortly afterwards, Julius H. Barnes, president of the U. S. Grain Corporation, made an arrangement with the Secretary of Agriculture whereby the work would continue, still under the direction of the Bureau of Chemistry, but taking the whole staff of the Grain Corporation.

Mr. Barnes considered the assistance of this organization and the work of these trained men as of great importance in the necessary protection of the Grain Corporation stocks, scattered as they are throughout the country, against fire and explosions, and that they could pay particular attention to elevators and plants holding the Corporation's stocks of grain.

Instead of six districts as the country was formerly divided into, it is now divided into four, an eastern with headquarters at Washington, a central with headquarters at Chicago, a northwestern with headquarters at Minneapolis, and a pacific with headquarters at San Francisco. Mr. H. H. Brown, a graduate of the Penn State Milling Department, is head of the eastern district, Prof. B. W. Dedrick, of the Milling Department of Penna. State College, is the head of the central district, Mr. Vernon Fitzsimons another graduate of the Milling Department of Penn State, is head of the northwestern district, and Mr. M. E. McCollum is head of the pacific district. Several more of the men who are engaged in the field divi-

sion of this work, are graduates of Penn State Department of Milling. It is the duty of these men to investigate and report any fires or dust explosions occurring within their respective districts.

On May twenty-second occurred the most disastrous dust explosion on record. Shortly after 6 P. M. the immense plant of the Douglas Starch Works, at Cedar Rapids, Iowa, was almost totally destroyed by a starch dust explosion in which forty-seven men were killed outright and many who escaped immediate death, died later in hospitals. The financial loss was \$3,000,000.00. Only the elevators and one mill and a few other buildings, that stood on the opposite side of a railroad track escaped entire destruction. All the rest of the immense brick and concrete structures were literally blown to fragments. There were twenty-seven buildings or sections in the destroyed area covering seven acres. Had the explosion occurred a half hour sooner, the death lists would probably have reached five hundred or more. The destruction was more than could have been done with a hundred of the most powerful shells or bombs that have ever been made.

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STUDENTS SHOULD GUARD AGAINST FOREST FIRES

The following statement regarding the fall fire season in the forests has been made public by Mr. John W. Keller, the state forester located at Bonksburg:

After the frequent rains of the past few weeks, which made it impossible for the lovers of nature to get out in the "Great Out-of-doors", will come the delightful Autumn days. The instances of man turn him naturally towards the woods where he can let behind the cares of the business world and feel free to enjoy nature as God intended it to be. Many people, more than we suppose, will frequent our mountains for recreation purposes during the next two months.

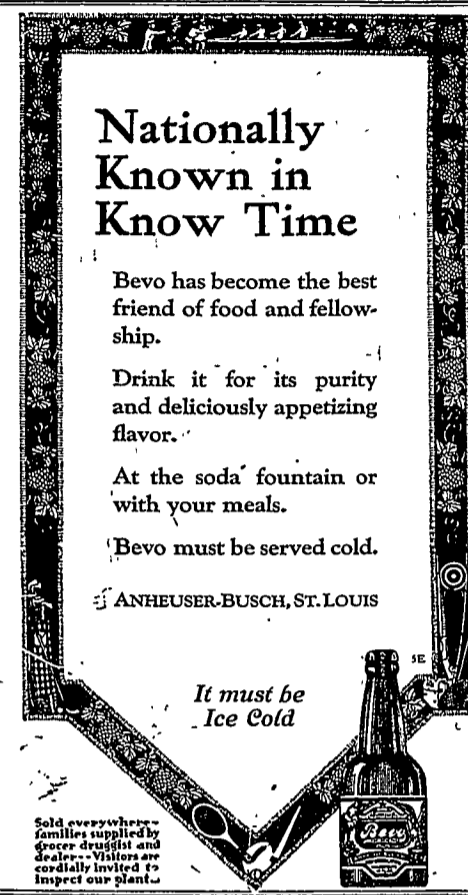
The leaves are falling and a few bright sunny days will make them dry under and the Fall Fire Season will be on. The Pennsylvania Department of Forestry not only invites but urges you to use the State Forests for your play ground but the carelessness of one person by leaving a camp fire before it is extinguished, by throwing a-

way a lighted cigar or cigarette, or after lighting his pipe throws away the burning match will cause a forest fire which may burn over thousands of acres before it can be controlled, and destroy the recreation ground of thousands of our nature lovers.

During the year 1918 over 230,000 ac-

res of forest were burned in Pennsylvania and in almost every instance it was through carelessness on the part of some person. Everybody should feel interested in keeping the mountains of Centre County green by being exceptionally careful with fire while in the woods.

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How on earth did it happen?
IMAGINE any first-class, medium-priced car (\$1500 or \$2000) ever becoming so well liked that even the millionaires would prefer it for their own use to even the highest priced cars.
Impossible.
You're right. Such a thing couldn't happen with a medium-priced automobile—nor, you would think, with anything else.
And yet this "impossible" thing has happened with a medium-priced cigarette. Just note, if you please, the evidence below, at the left.
How on earth did Fatima do it?
What is it—what does Fatima give that these wealthy smokers prefer to anything given by even the highest-priced cigarettes?
The answer is "Just enough Turkish"
Until they had tried Fatima, most of these men had been smoking straight Turkish cigarettes—because, of course, until a year or so ago these fancy-boxed, expensive straight Turkish cigarettes were practically the only cigarettes on sale at places like those named below.
Gradually, however, it seems that these men have learned two things about Fatima:
1. That Fatima's famous blend (containing more Turkish than any other blend) has just enough Turkish for full flavor; and
2. That the blend is so "balanced" as to offset entirely that over-richness or heaviness of straight Turkish.
Which proves again that Fatimas are a sensible cigarette—that they leave a man feeling fine and fit even after smoking more heavily than usual.
Has your present cigarette—has any cigarette—so strong a claim for your serious consideration as has Fatima?
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