

fore, the spread of disease may be greatly accelerated.

Trailer tourists cannot depend on the milkman or the city water works to supply them with safe milk and drinking water. They must find these for themselves. Penalty for not using a safe supply may be a serious case of typhoid fever or some other ailment from contaminated water or milk.

Gravest danger of all is the trailer tourist's garbage and other waste. If this is not properly disposed of, it will scatter disease along the highways and in tourist camps, villages, farms and cities.

A recent conference of health officers suggested many ways to meet this danger. Among them was the radical step of requiring health department approval of every trailer's sanitary arrangements before a license is issued.

In the end, however, it is up to the trailer tourist to make his trailer a Dr. Jekyll instead of a Mr. Hyde. Specific directions for this can be obtained from any health department.

Science News Letter, July 3, 1937

ENGINEERING

Steam Equals Electricity In Speed and Heavy Power

THE BATTLE between electricity and steam as the motive power in America's railroad locomotives has entered a new phase with the announcement that a 110-foot long giant of 6,000 horsepower is being planned by the Pennsylvania Railroad. Hauling heavy 14-car trains at 100 miles an hour is the goal of this newest locomotive and, when achieved, will make steam equal with electricity in combining speed and heavy duty power.

Engineers of the railroad and of the Baldwin, American and Lima Locomotive Companies have cooperated on the new design which, from artist's conceptions, looks like a giant, blunt-nosed lead pencil on wheels. There is no visible smokestack and all surfaces are as smooth as those on the more familiar Diesel-powered Zephyrs and Comets that have caught the public's train-traveling fancy.

One hundred and ten feet long, including the tender, the proposed steam locomotive will burn soft coal, fed automatically so that its engine crew will still remain at two.

It will carry 26 tons of coal and 25,000 gallons of water and have a cruising radius, to borrow aviation's phrase, of 100 miles.

Science News Letter, July 3, 1937

PUBLIC HEALTH

Dust Fights Dust in New Silicosis Control Method

PREVENTING silicosis by adding dust to the air sounds like a strange paradox, since silicosis is the lung disease resulting from breathing dusty air containing silica particles. Yet prevention of this disease, to which a million or more American workers are exposed, may in future be accomplished by fighting dust with dust.

This is the possible solution of the silicosis problem suggested by results of a mineralogical study by R. C. Emmons, professor of geology, and Ray Wilcox, of the University of Wisconsin.

The idea is to add protector mineral dusts to the air containing silica dust. Scavenger cells function poorly in removal of colloidal silica or any pure mineral dust. However, inhalation of one or more additional dusts, whose electrical charges are opposite to that of the noxious material, may result in aggregation of all dusts into large particles which can be normally removed before chemical action occurs.

Silicosis, prevalent in atmospheres heavily laden with siliceous dusts, is apparently caused by the chemical reaction of mildly alkaline lung fluids on the dust particles, producing a colloidal suspension of silica which collects on the cell walls and destroys living tissue. Based on experiments using beef and human blood sera in an attempt to approximate actual lung conditions, the suggestion is made that other minerals, particularly sericite, biotite and talc, may be susceptible to the same chemical reaction and consequently act as causative agents for silicosis.

Mixture of protector dusts with contaminated air can prove effective and economical only when preceded by a

microscopic examination of the noxious dust to determine size distribution and mineral content.

The study by the Wisconsin geologists was undertaken after recognition of the fact that modern preventive methods are expensive and incompletely successful, and in an attempt to substantiate the idea that minerals other than silica and asbestos can cause the disease.

Science News Letter, July 3, 1937

SOCIOLOGY

Child Marriages Banned In 39 States and D. C.

PUBLIC feeling aroused by publicity given to a number of child brides early this year has apparently resulted in general tightening of regulations to prevent such marriages of very young children.

A survey by the U. S. Children's Bureau shows that the legal minimum marriage age for children has now been raised above the common-law age in 39 states and the District of Columbia. In all but nine states the youngest age at which a girl can legally marry is between 14 and 16 years. For boys in these states the legal minimum marriage age varies from 16 to 18 years. The highest statutory minimum age, found in New Hampshire, is 20 for boys and 18 for girls.

In Colorado, Florida, Idaho, Maryland, Mississippi, New Jersey, Rhode Island, Tennessee and Washington the common-law marriage age still applies and boys of 14 and girls of 12 years are considered able to give valid consent to marriage.

Science News Letter, July 3, 1937

● RADIO

July 6, 4:15 p.m., E.S.T.

BABYLONIANS: FATHERS OF SCIENCE—
Dr. Waldo H. Dubberstein, Oriental Institute of the University of Chicago.

July 13, 4:15 p. m., E.S.T.

FOUR RULES OF THE ROAD — H. C. Dickinson of the National Bureau of Standards.

In the Science Service series of radio discussions over the Columbia Broadcasting System.

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