

# Fatal Gas Used in Few Refrigerators

Engineering

Deaths as a result of gas leaks from automatic refrigerators, such as occurred in Chicago recently, are unlikely to be repeated very extensively elsewhere, in the opinion of government experts. Of 63 makes of electric and automatic refrigerators compiled in a recent list, only 23 make use of methyl chloride, the gas responsible for the Chicago fatalities, as a refrigerant. Of these, only one is a nationally advertised make. Furthermore, the only danger comes from central refrigerating plants, used in apartment houses, where the refrigerant is piped to a number of cold boxes throughout the building. Even when methyl chloride is used in a small independent home unit, a leak would not liberate enough of the gas to cause danger.

Sulphur dioxide, the choking gas that results from the burning of sulphur, is the most popular cooling compound, and is employed in the two most widely used electric refrigerators. While this is irritating to the nasal passages, it is not really poisonous, in the same sense as the poison gases used during the war. Its pungent smell is recognized before it reaches dangerous concentrations. Ammonia, used in many refrigerators, is safe for the same reason.

Methyl chloride is odorless, and, while it is not poisonous in itself, a large concentration would exclude the necessary oxygen, and death would result if a person were kept in a closed room with it. Many manufacturers use it in combination with

either ammonia or sulphur dioxide, which have characteristic odors that reveal leaks. For a similar reason, manufacturers of illuminating gas, which consists largely of odorless and poisonous carbon monoxide, mix other gases with it that give the characteristic odor. One manufacturer of refrigerators makes use of ethyl chloride, which is not poisonous but is highly inflammable. Attempts have been made to mix methyl bromide with it to lessen the fire danger, but methyl bromide is truly poisonous.

Carbon dioxide, which makes up a large percentage of our very breath, is used in one make of refrigerator. This is also the refrigerant used in cooling systems of battleships.

*Science News-Letter, July 13, 1929*

## Edison's Search for Genius—Continued

the U. S. Civil Service Commission. This psychologist, who directs the planning of tests for the government service, says that the varied ways of selecting a genius tried out by the 48 governors and the commissioners of the District of Columbia should present striking comparisons and contrasts, and these should serve as a challenge to research students to improve their methods of selecting individuals with talent.

Dr. O'Rourke further suggests that it would be an attractive proposition, though a difficult one, to follow the careers of all the 49 boys; to compare the contributions to science that may be made by the boys with the highest ratings on the competitive examinations with the contributions to science made by boys rating the lowest on the tests. These 49 careers, if they could be followed, might furnish valuable evidence as to the success of different methods of detecting symptoms of genius.

The boyhood of scientific geniuses, past and present, offers some guidance as to the sort of boy who grows up to be a giant in the world of science and invention. When Dr. Catherine Cox of Stanford University studied the boyhood of 282 geniuses of history she found 39 scientists among the set. A striking fact about these boys is their early attraction to science. Newton, destined to make his famous observation on apples and gravity at the age of 23, was the sort of boy who spends his time with ham-

mers, saws, and hatchets, constructing models of machines and other contrivances. Young Galileo's favorite pastime, Dr. Cox found, was the construction of ingenious toy machines. The boy Franklin had a special liking for the water, and his boyish inventions included a kite for accelerating progress through the water and pallets for rapid swimming.

Approaching more recent times, we find Alexander Graham Bell amusing himself as a boy collecting beetles, wild flowers, and minerals. He was an early pioneer in amateur photography. Being the son of a well-known teacher of elocution and authority on mechanics of speech, Bell became attracted to the problems of voice transmission at an early age, and kept up his interest in this subject all his life.

C. Francis Jenkins, one of the inventors who has made possible our moving pictures, was at his life work of inventing before he was out of baby skirts. He tells how, while still wearing dresses, he sawed a hole in the barnyard fence and solved the problem of a locked gate that kept him away from the horses and cows. As a youngster, he invented a jack to raise wagon wheels, for use in greasing axles, and so popular did the design become in his neighborhood that Francis and his brother pooled their capital and made five jacks to sell in the city. An air pump and other scientific apparatus at the district school was presented to young Jenkins on one occasion, because it

was little used and "he seemed the only one liking it."

Little Carl Steinmetz had a hard time learning the multiplication table, and his early teachers thought him a dull pupil. The fact was, he had been spoiled by an indulgent grandmother and had never set his mind to doing difficult tasks. By the time he was ten years old, however, interest in arithmetic awakened, and he grew up to be one of the few scientists who could understand the work of Einstein.

Persistency of interest is a trait which has appeared again and again in the boyhood careers of the inventors of the past and present times. Among the geniuses of the past studied by Dr. Cox more than three-fourths belonged to upper, educated classes, and the average child genius had an unusually good opportunity for education and inspiring social contacts. But often the education was not of the standard classroom variety. That of Edison, the inventor that the present quest aims to match, certainly was not acquired by the usual formal methods.

After all, perhaps the best way to find another Edison would be for the inventor himself to take the most up-to-date tests that psychologists have devised. Then, using his ratings on the tests as a standard, he could proceed to give the tests to the boy competitors, and find the mind most like his, making some allowance for differences in age and experience.

*Science News-Letter, July 13, 1929*