

CHEMISTRY

Poles Have Cyanide War Gas, German Scientists Conjecture

Carbonylcyanid, Recently Made for First Time in Lemberg, Said to be More Stable than Wartime Phosgene Compounds

POLAND may have succeeded in making the long-sought war gas containing the deadly cyanogen in effective combination, a German science journal suggests. (*Ber. d. deutschen chem. Ges.* 70, p. 1012).

Cyanogen is the deadliest of all known gases, quicker and more inevitably fatal in its action even than carbon monoxide. But like carbon monoxide it is light and highly volatile, so that in the open air it is quickly dispersed and therefore ineffective as a poison gas for military purposes.

During the World War several powers, particularly France, tried to make a compound containing cyanogen. A phosgene-cyanogen combination was the favorite experimental aim, but results were discouraging.

Now the report reaching the German Chemical Society states, Polish scientists at the University of Lemberg have succeeded in preparing a compound which they call carbonylcyanid. It is a clear, limpid liquid, with boiling point at 65.5 degrees Centigrade, considerably below that of water but much higher than that of cyanogen itself. In pure state it is quite stable. In contact with water it breaks down explosively into carbon dioxide and cyanogen.

Its physiological effects have not been reported by the Lemberg chemists, but the German editor remarks that "it is possible that the new compound has a very high toxicity; and its relatively high boiling point makes its use as a war gas not improbable."

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AGRICULTURE

Heat, Rather Than Drought Blamed for Corn Failure

EXCESSIVE heat in drought years is a more potent cause of corn crop failure than lack of water, declares Senior Meteorologist Charles D. Reed of the U. S. Weather Bureau Station at Des Moines, Iowa.

In support of his thesis, Mr. Reed cites recent drought history in his own state:

"In 1934, summer precipitation averaged 2.08 inches greater than in 1933 in Iowa, yet there was a bumper corn crop in 1933 and nearly a corn failure in the southern counties in 1934, because of the excessive and prolonged heat, with an average of 19.7 days with temperatures 100 degrees or higher, the greatest of record up to that time. This cut the 1934 corn yield to 21.6 bushels as compared with 14 in 1894.

"Then came the calamitous summer of 1936. The heat of July and August averaged 81.3 degrees, surpassing by 3.2 degrees the record hot July and August,

1901, with an average of 25.6 days 100 degrees or higher.

"During the last half of July, 1936, the Iowa crop was reduced 235,000,000 bushels to an average yield per acre of about 17 bushels . . . In small areas the destruction was even more complete than in 1894. Whole townships in the south part of Plymouth and the central part of Woodbury counties, reported only two or three wagon loads of corn.

"We used to say, 'It can't happen in Iowa,' but like the Californians, we must reluctantly admit that we had some unusual weather."

Discussing the much-debated question of weather cycles, Mr. Reed finds some difficulties, but also offered sweltering humanity promise of some relief:

"Considerable has been said about precipitation cycles but since precipitation is a resultant of many complex factors of which temperature is the major



A BIRD-SHELTERING MEMORIAL

Audubon, the great early American naturalist, would delight in this tower of homes for birds which is the accent-note of the museum and headquarters building in Audubon Memorial Park, near Henderson, Ky., where the continent-wandering artist-scientist once owned a mill. The work is being carried out as a cooperative project; bird-lovers made the Audubon Society their medium for the contribution of \$73,000, and the building is being put up as a W.P.A. project with C.C.C. collaboration. It is hoped that formal dedication can take place in the autumn

one, the search for precipitation cycles is not likely to be very fruitful. There is, however, a rough rhythm to the temperature graph for the State of Iowa which can, with a little imagination, be divided into cycles or periods after eliminating volcanic and other influences.

"There is little doubt that we have just passed a historic peak in the temperature cycle that must be followed by a summer in 1937 much cooler than recent summers and probably averaging near or slightly below the long time summer average. And the cycles that have gone before lead one to believe that there will be a tendency for the next 2 or 3 summers to grow cooler."

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Ninety-nine per cent. of the native plant life of North America has been replaced by foreign kinds.