CHEMISTRY

Chlorine Tied to Natural Gas To Give Cheaper Chemicals

THE MANUFACTURE of valuable industrial products from natural gas by the aid of the powerful chemical chlorine, a project long desired by chemists, is now in sight. Recent investigations of H. B. Hass and E. T. McBee of Purdue University are bringing to light the chemical laws by which the obstreperous chlorine may be controlled.

Molecules Broken Into

Organic chemists have realized for decades that the so-called hydrocarbons of which natural gas is composed are very closely related in formula to such valuable and relatively costly products as chloroform, formaldehyde, and several kinds of valuable alcohols. Although natural gas has appeared in stupendous quantities, nobody has yet succeeded industrially in making the necessary substitutions of atoms in its structure which would yield the above products. Apparently chlorine is about the only chemical agent which will break into the refractory molecules of the gas and give the manufacturer a chance to elaborate the desired substances.

Unfortunately chlorine in the past has behaved like a wild horse, doing all sorts of violence to the material under treatment. No consistency of production was attainable, and the process was hazardous. In such work it was always worth remembering that chlorine was the first poison gas used in the World War.

Many Products Possible

Following the recent success of a Philadelphia manufacturer in chlorinating light gasoline, yielding valuable solvents, Messrs Hass and McBee have worked out experimentally the chemical rules of the game by which chlorine can be controlled. Among other items, it is found that the operations proceed quite differently at dull red heat than they do at room temperature. Much of the investigation is a highly technical reckoning of the proportionate yields of two or more products in each case where the chlorine performs more than one act at a time. The aim is now naturally to slow down the undesired act, and emphasize the useful process.

Perfection of these processes will mean an almost unlimited supply of some very useful liquids, ranging from anaesthetics to lacquer solvents and even whisky. For this enterprise there will be required, in addition to the natural gas, only such readily available agents as electric power, common salt and coal.

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ARCHAEOLOGY

Graves Suggest Origin of Plague Burial Custom

SKELETONS lying in their graves face down, others on their backs but with their skulls detached and placed between their legs, others subjected to still further indignities, all discovered in a fifth-century burial ground near Breslau, Germany, suggest the possible origin of strange things done with the dead in medieval times when the plague was in the land, and continued in outlying communities even today.

The remarkable find is described and discussed in the German scientific periodical *Forschungen und Fortschritte* by Dr. Lothar F. Zotz, curator of prehistoric monuments in Breslau.

The burial place, Dr. Zotz states, contained a great mixture of grave styles. In many the dead were laid out in an orderly, "comfortable" position on their backs or sides, with rich gifts of weapons and ornaments. Mingled with such burials were the others, in which the corpse had been treated as though it were hated or feared. Some of the corpses had not only been decapitated, as indicated by the displacement of the skull, but were buried with the feet tied, and sometimes the hands bound as well. Some of the graves were shallow, and contained two or more burials apiece.

Two of the burials showed singular indignities: one had a big piece of bone between its jaws, its position indicating that it had been jammed down the throat; the other had a great rock weighing down the skull.

The suggestion that those maltreated corpses were those of enemies or captives Dr. Zotz does not accept. He points out that the normal and abnormal burials are all mixed together in most brotherly fashion, something unlikely to be done for an enemy. But he thinks he has a clue in certain burial customs that were resorted to during plagues in medieval Europe.

The idea prevailed then, and remains in some places even now, that corpses of persons dead of the plague first ate the burial gifts placed in their graves, then their grave-clothes, and finally began devouring their living relatives and friends. To prevent this vampirish behavior the dead were treated exactly as they were in this graveyard of a thousand years before: buried face down, or decapitated, or gagged, or mutilated.

The Breslau burial ground was filled with its dead during the time of the great folk migrations that finished the Roman empire in the West and ushered in the Dark Ages. Dr. Zotz inclines to the belief that this Germanic tribe, in its more or less temporary abiding place, fell victim to an epidemic. At first the burials were dignified and decent, but as the plague waxed worse, hasty and abnormal burials were resorted to in the effort to quell the unappeasable appetites of the ghoulish dead.

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SEISMOLOGY

Severe Earthquake Shakes Southeastern Siberia

SOUTHEASTERN Siberia, in the region of the Amur river, was shaken by a heavy earthquake on the morning of Friday, Sept. 23, according to calculations made by seismologists of the U. S. Coast and Geodetic Survey, based on data collected by Science Service. The quake began at 9:22.3 a. m., eastern standard time, and was centered in 50 degrees north latitude, 135 degrees east longitude, approximately. Since the region is off main lines of communication, it may be weeks or months before direct word of the disturbance comes out.

Seismograph observatories reporting to Science Service were the Seismological Laboratory, Pasadena; the University of Pittsburgh; stations of the Jesuit Seismological Association at St. Louis University, St. Louis, Mo., Georgetown University, Washington, D. C., and Canisius College, Buffalo, N. Y.; and stations of the U. S. Coast and Geodetic Survey at Sitka, Alaska and Honolulu, T. H.

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