The method has been used in Russia, Cuba, and Virginia.

The ore of mercury is cinnabar, very heavy and practically a non-conductor of electricity. But the deposits are too small to affect sufficiently the overall density or conductivity of the host rock. However, it occurs in conjunction with dikes and faults which can be found by electrical and magnetic methods.

Most of our nickel comes from Canada. It occurs in connection with pyrrhotite, a very heavy rock easily magnetized and a good conductor of electricity. This one is easy.

Tin, our chief headache, occurs largely in placer deposits like gold. It is frequently associated with magnetite which can be traced by its magnetic properties. Tin is heavy and usually sinks through the gravel beds to the bed rock. The contour and depth of the latter can be determined by seismic and electrical methods. These methods have been successful in locating placer gold deposits. But neither these nor other methods have disclosed any but the most meager and expensive sources of tin in this country.

Tungsten occurs as wolframite, which is dense and moderately magnetic. But, like cinnabar, it occurs in quantities too small to sensibly affect the properties of the surrounding rocks. However, it has one outstanding property, fluorescence. Unfortunately, this property is of no use until samples suspected of ore are found and tested.

Science News Letter, April 4, 1942

CHEMISTRY

Poison Gases May Be Used By Retreating Armies

Persistent Contaminants Such as Mustard Gas or Lewisite May Be Spread After Men Are Safely Away

POISON GAS, thus far unused in World War II, may presently appear in a new role. It may be added to fire and dynamite in "scorched earth" tactics, to render pursuit difficult and occupation of evacuated areas risky for the enemy, suggests Lieut. Col. Alden W. Waitt of the Chemical Warfare Service. (*Army Ordnance,* March-April).

Some of the so-called poison gases, like mustard gas, Lewisite and other vescicants or blister-raisers, are not really gases at all, but liquids which are distributed for tactical purposes in the form of fine sprays or mists. They settle on foliage, soil, anything else they touch and cling there persistently. Any person unlucky enough to make contact with such contaminated objects is certain to be more or less severely poisoned.

To be sure, such contaminated areas may be de-contaminated with suitable chemicals, but this process is both costly and slow, hampering swift pursuit of a retreating foe and forcing occupying troops to move about in a suspected area only with extreme caution.

As retreat-covering weapons, these persistent contaminants may be applied in any one of several ways. Artillery or mortar shell will probably not be used; those are weapons of attack on active enemy positions. But retiring troops can drop small cylinders or other containers that will give out their dangerous contents after the men have moved on to a safe distance. Planes can swoop back and forth, releasing the spray like a curtain.

Specially equipped trucks have been experimented with by some powers: "The principle of action is the same for portable and vehicle appliances and consists of spraying the agent from the container by compressed air or by special pumps operated by hand or motor. The Italian regulations describe similar devices for what they term soil contamination. These seem rather complicated and dangerous. If mustard is to be sprayed, it is best to be a safe distance away. Certainly pumping mustard by hand from a portable sprayer would be anything but healthy."

What seems like an especially effective method of using chemical means for covering a retreat is the chemical mine. It is like the high-explosive land mine now familiar in anti-tank defense, but is loaded with mustard gas or the like, with only enough explosive to throw it out in a great cloud when the firing mechanism is tripped by an incautious enemy. This has a double effect: it looses a high concentration of the deadly mist so suddenly that the unwarned troops may not have time to get their masks on, and it creates a contaminated area which cannot be safely entered until the decontamination squad has completed the clean-up.

Science News Letter, April 4, 1942

RADIO

Saturday, April 11, 1:30 p.m., EWT

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. P. W. Bridgman, of Harvard University, will discuss the problems and techniques of high pressures.

Tuesday, April 7, 7:30 p.m., EWT

Science Clubs of America programs over WRUL, Boston, on 6.04, 9.70 and 11.73 megacycles.

T. Russell Mason, of the Massachusetts Audubon Society, will talk on "Are You Ready for the Birds?"

One in a series of regular periods over this short wave station to serve science clubs, particularly in the high schools, throughout the Americas. Have your science group listen in at this time.