

## CHEMISTRY

# Element 91 Independently Isolated in Chicago, Berlin

Scientists at Kaiser Wilhelm Institute of Berlin Used Five and a Half Tons of Radium Ore in Research

CHEMICAL isolation of the heavy radioactive element number 91 has been achieved independently in widely separated parts of the world. Element 91 is called protactinium by German scientists and protoactinium by the British.

While Dr. Aristid Von Grosse of Chicago University's chemistry department was describing his method of isolation before the recent meeting of the American Chemical Society, the German scientific journal *Naturwissenschaften*, contained an account of similar work performed at the Kaiser Wilhelm Institute of Berlin by Drs. Georg Graue and Hans Kading.

Like the American experiments of Dr. Von Grosse in collaboration with M. S. Agrusse, the German scientists obtained their protactinium from tons of radium ore residues taken from the world famous radium mine at Joachimstal, Czechoslovakia. Three tons of radium ore residues were shipped to the United States in the American experiments. The German investigators used five and a half tons for their work.

### Half a Gram

According to the British science journal *Nature*, a compound was prepared—protoactinium potassium fluoride—which contained half a gram of the pure element. Dr. Von Grosse in his American work prepared one-tenth gram of pure protactinium.

Drs. H. Schuler and H. Gollnow at

the Astrophysical laboratory at Potsdam used five thousandths of a gram of the German sample to study the spin of protactinium's nucleus. Their work is the first determination of the spin in the nucleus of radioactive elements.

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## MEDICINE

## Injections and Heat Help Chronic Sinus Troubles

CHRONIC sinus trouble may be relieved by under-the-skin shots of blood, peptone, typhoid vaccine or other foreign proteins. Electrical treatments also help. Such treatments hasten recovery by repair work set up in the body, Dr. Ralph A. Fenton of Portland, Oregon, reported to the American Academy of Ophthalmology and Otolaryngology.

Dr. Fenton and Prof. Olof Larsell of the University of Oregon Medical School have been attacking the problem of chronic sinusitis both in the research laboratory and the consulting room.

Using cats as "test tubes" in their laboratory, they first found a method of reproducing in these animals the conditions found in infected sinuses in humans. Next they tried all the various methods to treat the disease in man.

Special vaccines made from the germs causing the disease in an individual case are unnecessary, they found. The same repair process could be stimulated and recovery hastened by injections of the animal's own blood or by injections of foreign proteins such as peptone solutions or typhoid vaccine.

Salt-free, high-vitamin and other special diets did not prevent well-nourished animals from developing chronic sinus disease when infected with germs from human cases.

In the consulting room, they found that X-ray treatments gave only slight temporary relief.

Patients suffering from sinusitis affecting both cheek bones were given diathermy treatments on one side only.

They reported much improvement and examinations of the sinus lining on the treated side showed a speeding up of the repair process not seen on the untreated side.

The nerves on the side of the neck which control the blood supply to the nose play an important part in repairing the damage done to the sinus membranes by infections, the Portland physicians believe, because when they removed these nerves on one side of the cat's neck there was marked increase in congestion of the sinus lining on that side.

Their study also showed that tissue cells which have tried to carry away germs by the lymphatic drainage channels of the sinuses may cause inflammation and temporary blocking of these channels. Such a blockade by swelling may help to lengthen the duration of the sinusitis.

In their studies on the cats, they tried many valuable skin antiseptics but found them too irritating for use in the sinuses. Their use delayed healing. Mild, simple, non-caustic alkaline agents seem the best aids toward repair of the sinus membranes, they reported.

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## PUBLIC HEALTH

## Education of Housewives Urged to Prevent Botulism

PREVENTION of future outbreaks of botulism now depends on teaching housewives all over the country proper methods of canning foods.

Factory canned foods have not caused any outbreaks of this deadly food poisoning in America since 1925, Dr. F. W. Tanner of the University of Illinois reported to the American Public Health Association.

Unfortunately, some state agricultural extension services, newspaper bureaus and manufacturers of supplies for home canning are giving housewives inadequate information on how to can foods. As a result numerous outbreaks of botulism still occur every year, Dr. Tanner pointed out.

Public health authorities have brought commercial food canners into line so that their products are no longer dangerous. Their next step must be to see that information given the home canner is adequate.

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There are at least 32 of the known elements in sea water.

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