

CHEMISTRY

Chemists Now Puzzled By Two Kinds of Element No. 93

AMERICAN scientists are wondering if famous element 93, which the Italian physicist Enrico Fermi created artificially with much labor recently, may not have existed undiscovered on the earth all the time.

Support of such suspicions comes from Yugoslavia where Dr. O. Kobic reports the discovery of a new element christened bohemia, which is heavier than uranium, having such an arrangement of atom parts that it, too, may be called element 93. Dr. Kobic has something more than a transitory element like that of Dr. Fermi, for he has a tiny speck of yellow powder which consists of silver combined with the new bohemia.

Thus, at present, two elements 93 have been found; the Italian variety breaking up to half the original amount in 12 minutes, the Yugoslavian kind seemingly an inert, permanent substance.

The two kinds can hardly be the same thing.

Dr. Kobic's bohemia is apparently named after Bohemia just as Madame Curie named the element polonium after her native Poland.

Bohemia was extracted from the substance pitchblende which also yields many other radioactive compounds like polonium and radium. The new element is said to be present in relatively high concentrations of one per cent.

How the presence of bohemia has been overlooked for the last thirty years is a mystery. In that time many of the best scientific minds of the world have investigated pitchblende for everything it contains. Chemical methods detect substances in much less than the reported one per cent. concentration.

The present answer to the mystery would seem to be that bohemia is an inert element which does not blow itself apart rapidly enough to make its presence known as do all the rest of the heavier elements that disintegrate by radioactivity.

Scientists may have plenty of work deciding how the two kinds of element 93 come about and their relation to one another. At present one might be likened in the way it acts to an active, bouncing baby; the other to a sedentary, elderly grandmother.

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SEISMOLOGY

Greatest Concentration of Earthquakes For Years

ABARRAGE of earthquakes shook various parts of the world during the last five days of the week ending July 21 and seismologists pronounced the earth more uneasy than it has been in several years.

The telegraphic collecting system for seismological information operated by Science Service in cooperation with the U. S. Coast and Geodetic Survey, the Jesuit Seismological Association and some 30 seismological observatories throughout the world showed that there were at least 17 earthquakes during the five-day period strong enough to jiggle recording instruments far distant from their origins. At least three of these were world-shaking earth movements.

The Panama-Costa Rica border and the New Hebrides region of the South Pacific were the two important centers of the quakes, although there may have been activity centered at other locations.

Off Mexico

The earthquake that was recorded on seismographs of the North American continent on Monday (July 16) has been located as centered on the west coast of Mexico in the state of Guerrero. It was comparatively weak.

The Jesuit Seismological Association central station at St. Louis determined the epicenter, using seismological station reports collected by telegraph from the Tucson, Ariz., station of the U. S. Coast

and Geodetic Survey, Georgetown University and Fordham University.

The latitude and longitude of the epicenter was determined as 16.9 degrees north and 100.1 degrees west, and the time was 3:19 a. m. E.S.T.

Tuesday's Felt at Sea

A severe earthquake was felt by ships at sea off the coast of Central America Tuesday night, July 17.

The center of the disturbance was located by the U. S. Coast and Geodetic Survey from seismological reports collected by Science Service as being near Panama. The epicenter was calculated to be 8 degrees north latitude and 83 degrees west longitude, and the exact time was 8:36.4 p. m., eastern standard time.

The shock of the quake was felt distinctly on two ships at sea, reports to the Hydrographic Office of the Navy indicated. Those on board the *S. S. Tuscaloosa City* about 61½ miles southwest of Montuosa Island, which is off the coast of Panama in the Pacific Ocean, felt the shock for a full 20 seconds. Reports from the *S. S. Point Sur*, 11 miles southwest of Bruica Island, indicated that the shock was felt severely on board for ten seconds.

Great Activity

Extraordinary seismological activity on the following day was dominated by one rather strong earthquake originating near the New Hebrides island in the Pacific and another which was an aftershock of Tuesday's Gulf of Dulce quake.

At least nine different shocks were recorded on seismographs Wednesday and early Thursday with such quick succession that the trembling of one had hardly ceased writing its lines on the seismological record before another quake started.

The Panama after-shock occurred a tenth of a second after noon, E.S.T., while the shock centered near the New Hebrides occurred at 2:40 p. m. E.S.T.

Three of the series of shocks that were felt in Panama were sufficiently severe to set in motion the special strong motion seismographs that have been installed by the U. S. Coast and Geodetic Survey at Balboa Heights. These machines start recording only when the earth moves sufficiently to make a local record worthwhile. These special seismographs were originally designed for investigating California earthquakes.

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