

"ALCHEMISTS" OF 1934 BRING NEW MATTER CONCEPT

By HOWARD W. BLAKESLEE
(Associated Press Science Editor)
NEW YORK, Jan. 5.—(AP)—To Mme. Curie's daughter, Irene Joliot-Curie, and her young husband goes the palm for 1934 scientific discovery—for finding something more astounding than the elder Curie's discovery of radium itself.

The public, which has heard vaguely of this discovery under the prosaic name of artificial radio-activity, does not realize that it means 90 per cent of the earth and all things in it are different from anything man even dreamed before 1934.

Artificial radio-activity is the conversion of ordinary, inert or stable chemical substance, into something different, into materials which give off powerful rays of several kinds. It is obtained by use of high-power rays that strike the nuclei of atoms.

99 Per Cent Of You
The nuclei themselves change. These nuclei are 99 per cent of all mass. Ninety-nine per cent, that is, of you, of your home, your possessions and of the most distant stars. Thousands of years ago philosophers dreamed that there must be some unseen power in the universe which could by a touch change the nature and the substance of everything.

But the young Curies have discovered that man himself has this power. More—they have put the power into his hands, and the great experiment is on in many laboratories.

Linked with the details of the discovery is the story, now told for perhaps the first time outside scientific circles, of how the young Curies caught the scientific ship of fame, after twice just missing the boat.

Their laboratory was one of the first places where strange things began to appear when the light metal beryllium was bombarded with powerful radiation. There was a scintillation which nobody understood. The Curies saw it but failed to realize its significance.

Ultimate Particles of Matter
Oswald, in England, recognized the scintillation as neutrons, ultimate particles of matter never before known.

Again a little later, the Curies while watching the trails drawn like sky-writing smoke by electrons diving through the vapor of a cloud chamber, saw some tracks curving in the wrong direction.

These tracks were in a magnetic field, in which electrons could not curve in the direction seen. The Curies suspected they were made by some hitherto unknown kind of particle. They wrote one of the foremost scientists asking him whether these strange trails could possibly be made by some foolish-sounding things predicted by a theory of a brilliant young Englishman, P. A. M. Dirac.

The theory said there would be "holes" in electrons or "anti-electrons." The scientist replied it was just a theory—not practicable.

So the Curies remained puzzled. Meanwhile Anderson, the American discovered that the trails were made by positive bits of electricity—new particles of matter. Again the Curies had missed.

Probing the After-Effect
But all this work was in the same unknown world—the peculiar behavior of nuclei of atoms. In the Curies' laboratory and in most of the other great laboratories there was another strange thing, that everyone had seen and nobody thought much about.

After ordinary substances had been bombarded by radium rays, or other extra-powerful rays, there was an "after-effect." The stuff bombarded continued for a short time to give off radiation. It was thought that "things just didn't settle down at once."

For Suffering Humanity
It was the Curies who first discovered why, and that was the greatest discovery of all three. These bombarded substances were no longer the same things which the scientists had placed under the high-power rays.

The atomic nuclei had changed; that is, a considerable part of the substance had completely altered its nature, had become something else. The "after effect" rays were these newly created substances disintegrating like radium.

Already half the substances in existence have been bombarded and have changed into something different. Uranium, the heaviest of all, yielded when Fermi, the Italian, rayed it with neutron beams. Gold likewise changed.

The Curies, with humanity's suffering in mind, concentrated upon trying to produce artificial radium which they hope may be more useful than real radium. They have named it radiophosphate.

Radium is too dangerous to take inside the body except in needles or seeds which can be removed, for its searing rays continue unabated for hundreds of years.

The artificial radium disintegrates rapidly. At the longest so far it lasts only a few days.

Some of the changes are surprising. At the University of California Dr. E. O. Lawrence bombarded the sodium of table salt and it changed into a different kind of sodium, giving off rays more powerful than radium itself. But after disintegrating this new sodium did not change back into ordinary sodium.

It became magnesium, quite a different chemical. That is like saying you may take some common table salt, which will change into radium, and after a short time will change in your body to the magnesium familiar to you in citrate of magnesia.

Changing Earth's Story
These experiments hardly begin the story. What is happening in the great laboratories is alchemy on a wholesale scale. The alchemy still is atomic, that is too small in most cases to be seen directly, and too small, except for the possibility of cancer treatment, to be of practical use yet.

Twice at least this year the discoveries have led to scientific guesses that the story of the origin of the earth will have to be rewritten.

Instead of the earth continually growing older and colder, it may be that the radiation from the outside, like the cosmic rays, are continually creating new supplies of the material substances forming the earth's crust.

With their new, high-power tubes, the scientists seem to be creating the "machines" with which man may take a hand in shaping this recreation of the elements of his planet.

EXTRAS PLAY AT WEALTH; POVERTY LIES IN WAIT!

Poverty and despair sit in the shadows behind the immaculately garbed men at the left and the beautifully dressed women at the right, a throng that well might grace a Gold Coast lavish social affair. The impression of wealth that they convey belongs only to the make-believe. They are the "dress extras" of Hollywood, gathered in a theater to face the elimination tests that cut their number from about 1500 to less than a sixth of that figure, so a living wage can be paid those surviving the ordeal.

SPOUTS SPIRES OF FLAME!

Pillars of smoke shot through with sheets of flame spouted from this oil well three days after it blew in as a big producer near Trinity, Houston county, Tex. Fire crews fought vainly for more than a week to control the roaring blaze, which took a heavy toll.

COUNTY 4-H CLUBS TO ENTER CONTEST

The Lane county 4-H organization has entered the national county program contest, supervised by the national committee for boys and girls club work and sponsored by the Sears, Roebuck company which is supplying the funds for the award.

The coveted award if won for the Lane clubs would be \$10,000 for a club building.

The contest is divided into several divisions, so many points for each. Five points would go for assistance given in the county by state extension service; 10 points would go on organization of the work in the county; 20 points for leadership; five points for cooperation by other groups; 20 points for enrollment completion; 15 points for activities; 25 points for influence of club work in community in 1934, such as on agriculture, home economics, social, on adult organizations, and other miscellaneous influences.

Reports for the state competition must be in by January 15, the state winners to be picked February 15 and the national on March 15.

Location of the club building in the winning county would be determined by whether there was a functioning organization, if land available, and other factors. Much enthusiasm is being shown over the contest, according to R. C. Kuehner, county club leader.

Fashion Showings—Lingerie Set

Edited by LAURA I. BALDIT, A. M.
For many years Assistant Professor of Household Arts, Teachers College, Columbia University, New York, N. Y.

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MARTIN-THACHER RECITAL JAN. 13

Gertrude Graves Martin, soprano, and Jane Thacher, pianist, accompanied will be presented in concert at the University of Oregon music auditorium Sunday, January 13 at 3:00 o'clock.

Mrs. Martin had an enviable reputation throughout the east and Canada as a concert singer and was soloist at the Strand theatre in New York City.

Mrs. Thacher, well-known to Eugene music lovers, is considered by critics to be one of the best pianists on the Pacific coast.

Phi Mu Alpha, men's national music honorary will act as sponsor for the concert with the proceeds to be used as part of the fund which the honorary is gathering to provide tuition for four high school students next year. The scholarships will be in four departments in the University of Oregon school of music and will include piano, voice, violin and woodwinds.

WOMEN'S GROUPS STORY

(CONTINUED FROM PAGE 1)

newspapers for the publicity given; to the Pioneer Grocery company for supplies; to Chase Gardens and University Florist for flowers; and to the Eugene Farmers' creamery for the ice cream birthday cake sent the federation in celebration of its first birthday.

The Eugene hostess clubs were extended thanks for the successful meeting.

Speakers on the program during the two days included Mrs. Dunbar, Mrs. Nicholson, Mrs. Norton, John W. Anderson of the Morning News, Miss Jeannette Calkins, editor of the Oregon Clubwoman, official magazine of the state federation, Mrs. Ralph Crow, Dean John J. Landsbury and Mrs. Anne Landsbury Beck of the University, Marian Lowry Fischer of the Register-Guard. The federation extended its thanks to those taking part on the program; also, to Mrs. Beck, Dean Landsbury, Mrs. Lora Teshner Ware, Mrs. Buford Rorch, Miss Maude Denmore, and the assisting young people, all of whom arranged and took part in the musical program given during the two day meeting.

Mrs. Nicholson, Mrs. Dunbar, and Mrs. Norton gave various reports on federation activities.

Miss Calkins pointed out the value of the state magazine as a medium of expression for the club women and as a vital link in the "freedom of the press" issue, since through it club women of the state could have freedom of opinion on projects and endorsements undertaken by the clubs. The magazine is entirely self supporting and must be supported by club women of the state in order to continue, she said.

Mrs. Crow, president of the Eugene Women's City club, gave an interesting talk on the "Three M's for the Clubs," method, management, and manners, and warned groups not to build up too top-heavy organizations, weakened because of too many committees and too many projects.

Retiring officers of the federation are: Mrs. G. A. Harnden, River Road, president; Mrs. H. R. Emerson, Santa Clara, first vice-president; Mrs. K. K. Fogeladlen, River Road, second vice-president; Mrs. Mary Hilburn Jackson, Eugene, secretary; Mrs. Pearl Shantol, Glenwood, treasurer; Mrs. G. H. Davidson, Creswell, Mrs. Ira Williams, Lone Pine, Mrs. Lucella Henigan, Coburg, Mrs. John P. Patton, Glenwood, Mrs. D. O. Fisher, Springfield, directors.

Training School Bids Are Due Jan. 28

LA GRANDE, Ore., Jan. 5.—(AP)—Bids for the construction of the \$130,000 training school building on the Eastern Oregon Normal school campus are to be opened by the state board of higher education January 28, it was announced here today by President H. E. Inlow.

The building will be constructed with funds jointly furnished by the La Grande school district, the state of Oregon and the public works administration.

Actual construction may begin late this winter, with the architect allowing about five months time for completion of the building.

Troop Two, Eugene, Makes Fine Record

The four year record of Troop 2, Eugene, would be an enviable one to any scout master registered in the Boy Scouts of America, according to H. B. Sallee, scout executive.

During the four years the troop has registered 58 different boys. Out of this number 13 have reached the highest rank, that of Eagle Scout. The troop has had only two scouts in four years dropped from records who had not advanced to first class and higher rank, these two scouts being registered in the past four years.

34 of them are still registered. Those graduating from the troop

visited at the Hughes home Wednesday.

News has been received of the marriage of Mrs. Frieda Close McCoy, former post-mistress at Siltcoos. She was married in Hollywood on December 30, to Walter Durrell Cobhill of Oakland, California. They will make their home near Oakland.

A watch party was held at the G. G. Ehrhart home New Year's eve. Those present were Mr. and Mrs. J. T. Miller, Mr. and Mrs. Gordon Hines and little son, Raymond, John Hamersley, Frank Olsen, Con Schuster, and Bradford Miller and the Ehrhart family. A watch party was also held at the Hughes home by Rubie Delmater, Mrs. Addie Alton and the Hughes family. The evening was spent listening to the radio and playing games.

Mr. and Mrs. Geo. Coffin returned to Siltcoos Friday from Portland, where he has been in a hospital for several months with a broken leg. Mrs. Coffin's brother, Darrell Prescott of Portland is visiting at their home.

Willamette Dance Argument Revived

SALEM, Ore., Jan. 5.—(AP)—The dance problem cropped out again at Willamette university today. Independent students—those not affiliated with Greek-letter fraternities or sororities—announced the organization of an independent social association to demand "our rightful social privileges."

About 125 men were said to be members of the new group, which denied any campus political ambitions although an independent man, Dick Lueke, was last fall elected student body president over Mike Balkovic, fraternity man, by eight votes.

Organized living groups last year were given the right for the first time in history to hold dances. The independents, say now that they want the same right.

Siltcoos News Notes

SILTCOOS, Jan. 5.—(Special)—Mr. and Mrs. Duway Powers of Medford visited with the latter's parents, Mr. and Mrs. Grant Ehrhart, during the holidays. Miss Ethel Ehrhart of Portland also visited at the parental home, accompanied by two of her friends of Portland.

Mr. and Mrs. J. J. Miller and son, Bradford, spent New Year's day at the Millard Martin home at Ada.

Mrs. Martin Christensen and daughter, LaVelle, of North Beach

EARLY RETIREMENT OF LIBERTY BONDS TREASURY PROGRAM

By RICHARD L. GRIDLEY
United Press Staff Correspondent
WASHINGTON, Jan. 5.—(AP)—Treasury financial plans pointed today toward early retirement of the last of \$24,072,111,400 in war time Liberty and Victory Loan bonds.

The ability of the government to borrow now at cheaper interest rates prompted plans for early retirement or conversion of the bonds into lower interest bearing securities, treasury officials said. Present interest rates are around 3 per cent as compared to a high of 4 1/2 per cent on some war time borrowings.

There remains outstanding among the 25,000,000 persons who responded to the Victory and Liberty Loan drives above \$5,122,827,000 in war bonds. Approximately \$19,000,000,000 has been retired out of taxes or refunded into lower interest bearing securities.

Of the remaining bonds—representing First Liberty Loan 3 1/2, and 4 1/2 per cent bonds, and Fourth Liberty Loan 4 1/2 per cent bonds—\$1,875,000,000 of the \$3,189,117,450 of outstanding Fourth 4 1/2s will be called for redemption on April 15.

Despite an all time record public debt of \$28,478,963,925 at the end of 1933, treasury officials see little difficulty in a possible calling of all the remaining Liberties and their conversion into lower interest bearing securities.

The original sale of the Liberties comprised \$1,989,455,450 First 3 1/2s; \$3,807,865,000 second 4s; \$4,175,050,050 Third 4 1/2s; \$6,964,581,100 Fourth 4 1/2s and \$4,495,373,000 Victory Loan 4 1/2s.

Heavy costs of the recovery program have piled up the government debt far in excess of that contracted with the sale of liberties.

Liberties have been replaced by other obligations and the country is now further in debt than at the end of the World War.

Treasury officials figure the annual interest charge on the present government's debt of \$28,500,000,000 at \$820,000,000, compared with an interest charge of \$1,020,251,622, at the peak debt of less than \$26,000,000,000 in 1920. The average computed rate of interest on the public debt is now \$3.021 per cent, compared with a maximum of 4 1/2 per cent for war time bonds.

Credit Agencies Elect Officers

The semi-monthly meeting of the Lane County Association of Collection Agencies was held at the McCrady cafe Friday and the usual business was attended to as to checking of lost addresses and comparing data on bad accounts.

As this was the first meeting of the new year it was decided that all agencies should list claims coming into their offices during the week with the Lane county credit bureau as this would be a benefit to each member and make a better and more complete reporting.

The following officers were elected: S. H. Seashore, president; C. S. Dillon, vice-president, and Edward Trapp, secretary-treasurer.

TAYLOR TO SPEAK
Dr. Howard Taylor, of the psychology department of the university, will talk on "Boy Psychology," at the regular Sunday leadership training course sponsored by the Wallamet scout council at Condon hall. The meeting will start at 3 p. m.

Estimates have placed more than 75 per cent of the population of the United States as living along surfaced roads.

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