

## Science Notes.

## THE MYSTERIOUS ELEMENT.

Radium—the newly-discovered and mysterious element, and the most costly substance on earth—is now for the first time to be seen by the British public in the mineral gallery of the Natural History Museum at South Kensington.

The specimen on view contains about twelve milligrammes, or about £5 worth. It is exhibited in a box covered with black velvet, as it is difficult to recognise it in ordinary light.

It is not, of course, the pure radium, but a solution spread over a specially prepared card coated with sulphide of zinc. It is not particularly attractive to look at, and a visitor, unless informed of the fact, would probably take the exhibit for a strip of blue flannel. Screened from the light, it yields a faint gleam, like luminous paint.

The salts of the pure compound of radium are very like grains of common salt. The compound occurs as an impurity in masses of pitch-blende, being so rare that only a few grains are yielded from a ton of pitch-blende. Great care has to be taken to separate the radium from barium—a kindred substance.

A few grains of the pure compound will be exhibited a few days hence. They are very small, and look like pin-points of chaff. The samples were bought by the Museum authorities from a German firm.

To give one instance of its mysterious qualities. It can transmit sparks of light through solid bodies. A grain or two will shine through a rouleau of coins as effectively as a Röntgen ray. At present there is not enough of the substance for any utilitarian purpose.

During the International Congress for Applied Chemistry, held last week in Berlin, Sir William Crookes delivered an address entitled "Modern Views on Matter: The Realisation of a Dream." The lecturer said that for nearly a century men of science had been dreaming of atoms, molecules, and ultramundane particles, and had been speculating as to the origin of matter. They had now got so far as to admit the possibility of resolving the chemical elements into simpler forms of matter, or even of refining them away altogether into ethereal vibrations or electrical energy.

Sir William Crookes then gave a brief account of some investigations bearing on the constitution of matter and the possibility of dissociating the chemical elements. He remarked that a number of isolated hypotheses as to the existence of matter in an ultragaseous state, the existence of material particles smaller than atoms, the existence of electrical atoms or electrons, the constitution of Röntgen rays and their passage through opaque bodies, the emanations from uranium, and the dissociation of the elements were now welded into one harmonious theory by the discovery of radium. After paying a high tribute to the labours of M. and Mme. Curie and M. Bémont, he proceeded to describe some of the characteristics of radium. He said that the most striking property of radium was its power to send forth torrents of emanations. Sir William Crookes

remarked with regard to this and other experiments:—

"Indulging in a 'scientific use of imagination' and pushing the hypothesis of the electronic constitution of matter to what I consider its logical limit, we may be, in fact, witnessing a spontaneous dissociation of radium—and we begin to doubt the permanent stability of matter. The chemical atom may be actually suffering a catabolic transformation, but at so slow a rate that, supposing a million atoms fly off every second, it would take a century for its weight to diminish by one milligramme. Our views to-day of the constitution of matter may appear satisfactory to us, but how will it be at the close of the 20th century? Are we not incessantly learning the lesson that our researches have only a provisional value? A hundred years hence shall we acquiesce in the resolution of the material universe into a swarm of rushing electrons? This fatal quality of atomic dissociation appears to be universal, and operates whenever we brush a piece of glass with silk; it works in the sunshine and rain-drops, and in the lightnings and flame; it prevails in the waterfall and the stormy sea. And although the whole range of human experience is all too short to afford a parallax whereby the date of the extinction of matter can be calculated, 'protyle,' the 'formless mist,' once again may reign supreme and the hour-hand of eternity will have completed one revolution."

## Professional Review.

## THE ART OF COOKING FOR INVALIDS IN THE HOME AND HOSPITAL.

One of the features of the present day is the amount of attention paid to the domestic arts, to the better ordering of households, and to the small refinements and daintinesses which mark the difference between a household where personal supervision, based on personal knowledge, is exercised, and one which drifts along on the paid service which, even when the best is employed, leaves something to be desired. In short, the modern woman, keenly interested in all that goes on around her in the world at large, and knowing that efficiency is required of her in work of all kinds, has learnt that it is also the basis of comfort in her own home. Consequently the domestic woman, who has cast eyes askance at her more progressive sister, finds herself outstripped even in her own special domain and is learning with surprise that her feckless, unmethodical, incompetent ways make a poor show in the home beside the results of the well-ordered method displayed in the household of the woman she has contemptuously regarded as a "blue stocking." The domestic woman, in short, has received a severe shock, and is rubbing her eyes in wonderment with a keener appreciation of the all-round woman. So as the press reflects the temper of the hour, quite a little crop of books bearing on domestic details have found their way recently to our editorial table. Amongst them three by Miss Florence B. Jack, on the "Art of Cooking for Invalids," "Breakfast and Savoury Dishes," and "Hot Puddings, Soufflés, and Fritters." They are published by Messrs. T. C. and E. C. Jack, of 34, Henrietta Street, W.C., and the Causeway, Edinburgh, and should be acceptable to the thrifty housewife who knows the pleasure of trying new recipes.

[previous page](#)

[next page](#)