

The lowest atomic weights of RaG that have been obtained are those of Richards and Hönigschmid, and are 206.08 and 206.05 respectively. These may be a little high due to admixture of other isotopes of lead. The best value for the atomic weight of radium is 225.97 by Hönigschmid, but the difficulties due to incomplete purification and small quantities of material worked with probably make this value less accurate. Nevertheless, if this figure for radium is accepted provisionally, one must conclude that either radium-lead (RaG) has an atomic weight less than the whole number 206, or that the energy is derived from outside sources as suggested by Perrin, or that the equation connecting mass and energy is not correct.

Now I will suggest a more exact method of testing experimentally the above calculation of the atomic weight of Ra. It is evident that the chemical determinations of the atomic weights of Ra and RaG cannot be made with sufficient accuracy due to difficulties inherent in such determinations and to the probable presence of isotopes in the samples used. When the method of positive ray analysis is extended so that it is accurate to 1 part in 10,000, then we would have a method of determining the masses of Ra, RaG, and He with sufficient accuracy. This refinement does not seem utterly impossible. Though the method is relatively in its infancy, yet Aston claims in the case of helium an accuracy of 2 or 3 parts in 1000. By the positive ray analysis all difficulty with contaminating isotopes in the case of RaG and Ra would vanish. The calculated atomic weight of Ra could be checked by data thus obtained, and the conclusions ought to show whether the relation of mass and energy based on the theory of relativity holds. In any case, the results would be valuable.

HAROLD S. KING.

Wolcott Gibbs Memorial Laboratory of Harvard University,
Cambridge, Mass., U.S.A., March 13.

Safeguarding of Industries Act, 1921.

FROM time to time complaints have been made in NATURE and received at the offices of this Union against the operation of the Safeguarding of Industries Act, 1921. It has been asserted that the Act greatly increases the running cost of laboratories, which are still, to some extent, dependent upon other countries for supplies of scientific apparatus, laboratory ware, and fine chemicals; and this increased cost has fallen upon research and teaching institutions at a time when the Government is restricting grants.

In consequence of the complaints received, this Union approached the British Medical Association, and a joint committee of the two organisations was formed, with the view of exploring the ground, and making representations in the proper quarters. If sufficient information is forthcoming, it is the intention of these two associations to arrange for a deputation to wait upon the Rt. Hon. H. A. L. Fisher, Minister of Education, following upon the suggestion made by Viscount Peel in the House of Lords on November 10 last. It is intended that this deputation should be representative of all scientific and educational bodies, and we are already assured of the support of some of them.

A letter has been addressed to the Deans of the Faculties of Science and Medicine of all British Universities and University Colleges, to Deans of Medical Schools, to Principals of Technical and Agricultural Colleges, and to the Institutes of Physics and Chemistry, and the various teachers' associations.

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This has asked for information under the five following headings:—

"1. The difficulties experienced by members of your" [University, society, etc.] "in obtaining British materials and laboratory ware of the requisite quality and quantity.

"2. The difficulties experienced in obtaining British scientific instruments.

"3. Detailed particulars of instances where difficulties and delays have been experienced through the action of the customs authorities, in obtaining consignments from abroad. (N.B.—It would be well to indicate here from which countries the greater bulk of the goods are obtained.)

"4. The increase in the running costs of laboratories which can be directly attributed to the operation of the Act.

"5. Details of cases where researches have been hindered or had to be definitely abandoned owing to the difficulties of obtaining materials from abroad or their excessive cost in this country."

A fair number of replies has been received, though in many cases the information given is not in sufficient detail. I should be glad, therefore, if all scientific workers, including those engaged in industry, would supply me with detailed information under these five headings at the first opportunity.

A. G. CHURCH,
General Secretary.

National Union of Scientific Workers,
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London, S.W.1.

Discovery of Gold in Devonshire.

I HAD occasion recently to conduct a party of my students from King's College, London, over the Devonian rocks in the neighbourhood of Torquay, Devon, and had the good fortune to discover an interesting occurrence of gold in the fault-rock of a small fault cutting the limestones near Hope's Nose. As it may prove of some interest, I take the opportunity of recording the find in the columns of NATURE.

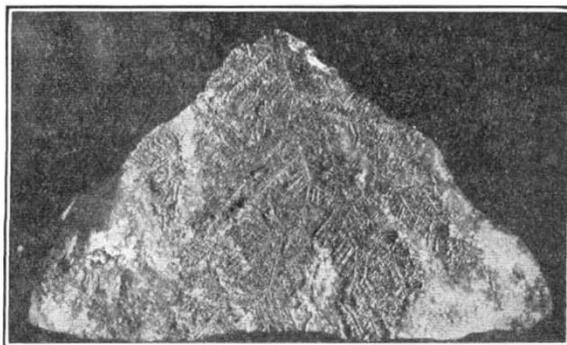


FIG. 1.—Dendritic gold in Devonian limestone. ($\times 3$.)

The fault-rock is a limestone-breccia cemented by crystalline calcite, through which the gold is distributed in a dendritic fashion, as indicated in the accompanying figure (Fig. 1). It is premature to dogmatise on the possible commercial value of the gold, since time did not permit of a thorough examination of the locality, and a former find at Daddy's Hole proved too poor to work, but it is intended to proceed further with the matter in case it may prove worth exploitation.

W. T. GORDON.