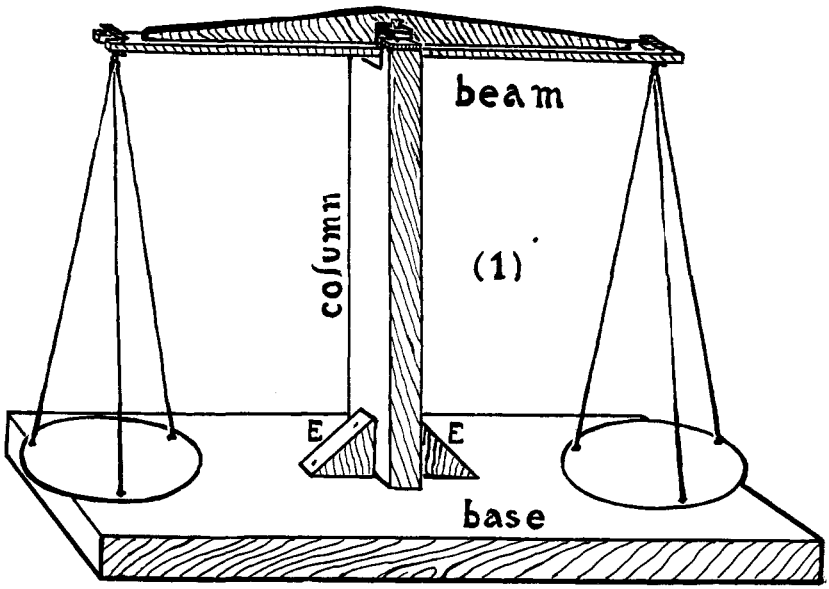
into account, the *total* α-ray activity of any uranium compound is strictly proportional to its percentage of uranium. This is a direct confirmation of the theory that radioactivity is an atomic property.

February 8, 1905.

NOTE.

A Home-made balance.—It is thought that the balance figured below may prove useful in schools to illustrate the law of conservation of mass, and for other chemical and physical experiments. It can be made for less than a dollar; and when carrying a kilogram on each arm, half a gram additional is enough to move the pans through three inches.

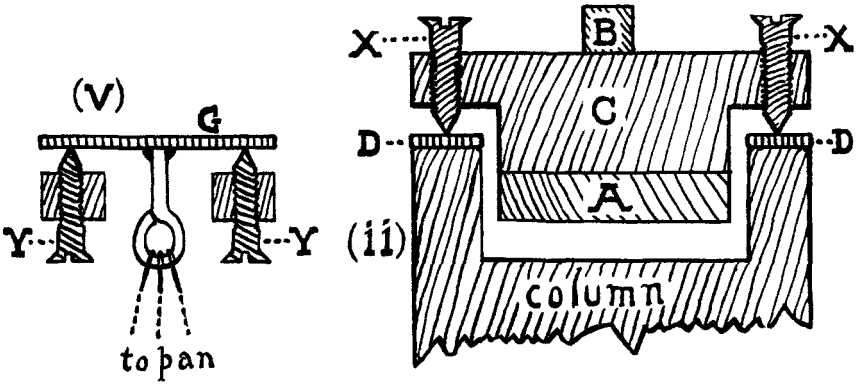
In the figure (i) shows the balance in perspective, (ii) is a trans-



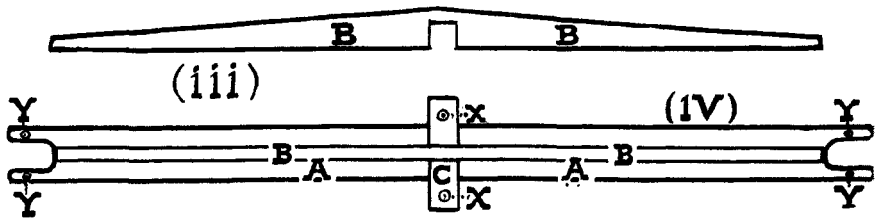
verse section through the beam, column and screws which serve as "knife edges," (iii) is the stiffening piece, (iv) is a view of the beam from above, and (v) is a section through the beam near the end, to show how the pans are supported.

The base is a piece of board 8 x 30 inches. *The column* is of

wood, 3 inches from front to back of (i), 1 inch from right to left, and 18 inches high, screwed to the base and supported by two triangular pieces E; a notch $\frac{5}{8}$ inch deep x $1\frac{3}{4}$ inches is cut out of the top, as shown (in ii), and two small pieces of brass are screwed on at D. *The beam* is a lath, A, 25 inches long, $\frac{1}{4}$ inch thick and



$1\frac{1}{2}$ inches wide, with a notch at each end $\frac{5}{8}$ inch wide and 1 inch long; it is stiffened by a vertical piece, B, of the same thickness, 23 inches long and 1 inch high in the center, tapering to both ends and fastened to A by screws. A transverse piece, C, of the shape shown in (ii) and (iv) carries two screws, X (flat head bright, 1 inch No. 6), whose points are filed sharp and rock on the plates, D. Four more screws Y ($\frac{3}{4}$ inch No. 4), two at each end of the beam, carry small pieces of brass, G ($1\frac{1}{2}$ x $\frac{3}{8}$ inches), to each of which is soldered a wire loop; *the pans*, of galvanized iron, $6\frac{1}{2}$ inches diameter, are hung from the loops by three strings



each, so as to come about 3 inches above the base. Punch marks may be made in the brass plates, G, to keep them from slipping off the screw points; the plates, D, should be left smooth.

The points of the six screws, X, Y, and the center of gravity of the beam should be nearly in the same plane; the delicacy of the balance is increased by screwing down the two screws, X; if they are too low, however, the beam will overbalance on either side and will not rise. The balance should be adjusted once for all, best when weighted; a pointer with small adjustable weight may be added, if desired. W. LASH MILLER.

REVIEW.

SOME ABSTRACTS FROM RECENT FOREIGN LITERATURE UPON INDUSTRIAL CHEMISTRY.

BY FRANK H. THORP.

Received February 2, 1905.

IN THE preparation of this article the purpose has been to bring together some of the papers published in the foreign journals during the past year, and which have not been included in the *Review of American Chemical Research*. In the interests of brevity exhaustive reviews have not been attempted and only the more prominent points have been touched upon. Several articles are the continuation of work abstracted in this Journal, **26**, 192.

TECHNICAL EDUCATION.—The teaching of Industrial Chemistry and Chemical Engineering continues to receive much attention in papers and addresses before scientific societies. Frequent references to it were made by Sir William Ramsay during his tour of this country last summer, and by other authors in papers read at the St. Louis Congress for Applied Chemistry. The subject was also referred to; and an extended review of the situation in America appears in the reports of the Mosely Educational Commission, issued early in 1904. Procter (*J. Soc. Chem. Ind.*, **1904**, 1074) discusses the relation of the University to Technology in his annual address to the Yorkshire section of the Society of Chemical Industry. Dealing with the question mostly from the British standpoint, he finds conditions in England unsatisfactory and insists that fees are generally too high, and that the scholarship system in vogue in that country does not meet the necessities of the case. He doubts the value of the teaching in the ordinary trade schools and evening classes. More attention to technical research should be required in the universities, and manufacturers should offer more inducements for men to take up chemical technology by better remuneration and opportunity for individual experiment in the works.

PROGRESS IN THE CHEMICAL INDUSTRIES.—Moulton (*J. Soc. Chem. Ind.*, **1904**, 1063) considers the trend of invention in chemical industry under three heads: (1) The products; (2) the sources of material; (3) the processes of chemical industry. Concerning