the hydrogen isotope of mass 2, HH^2O would indicate water one half of the hydrogen of which contained the isotope of mass 2, the other half having mass 1, and H_2O standing for water containing only the isotope of mass 1. While these designations appear to be satisfactory for simple compounds, the use of superscripts introduces difficulties when the formulae of complex organic molecules are involved, particularly so if one desires to write graphic formulae. There is also an appreciable increase in printing cost to be considered.

I would like to suggest a further alternative. Hydrogen of mass 2 is already extensively referred to as "heavy hydrogen." This could be designated in typesetting by a bold-faced letter "**H**." Thus, we can have $\mathbf{H}_2O$, **H**HO, and H_2O, indicating, respectively, water containing only heavy hydrogen, water containing one-half heavy hydrogen and water containing no heavy hydrogen. Similarly, we can write organic formulae in exactly the same way that we write them at the present time, excepting that all the hydrogens or particular hydrogens are printed, using the bold-faced type to indicate that these hydrogens have mass 2.

If hydrogen of mass 3 is ever produced in sufficient quantities to be used in preparing chemical compounds of known structure, its presence can be indicated by a bold-faced Old English letter "H."

Similarly, oxygen of mass 18 can be indicated by a bold-faced letter "O" and oxygen of mass 17 (which appears to be the rarer of the oxygen isotopes) can be indicated by a bold-faced Old English letter "O."

Such designation of the hydrogen and oxygen isotopes will make possible the use of graphic formulae of organic compounds which differ in no way from the present formulae, excepting that particular hydrogens or oxygens will be designated as for a special mass, differing from the mass of other hydrogens or oxygens which may be united to form similar compounds, but compounds which have different physical (and perhaps chemical) properties. Thus, for example, we may have mono-**H**-benzene, *o.* (or *m.* or *p.*) di-**H**-benzene, 1.2.3. (or sym.) tri-**H**-benzene, etc., for all the known organic compounds, without introducing any ambiguity into the nomenclature.

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PARA-ORTHO CONVERSION OF DEUTERIUM[1]

USING thermo conductivity method we have succeeded in showing the para-ortho conversion of deuterium at 78°, 53°, 20.4° Kelvin changes in readings relative to normal deuterium being in ratio 3 to 11 to 30, respectively. This agrees with the Bose-Einstein statistics if the nuclear spin of the deutron [deuton?] is the one which gives excess concentration of 3.3, 11.1 and 31.2 per cent., respectively, of orthodeuterium at these temperatures relative to normal deuterium. Velocity constant of reconversion of orthodeuterium by oxygen at room temperature is sixteen times smaller than that of parahydrogen, being 0.57 liters per mol, per min.

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[1] Received by cable.

GOVERNMENT RESEARCH

IN a recent number of SCIENCE (January 26) attention was called to the reduced appropriations to the U. S. Department of Agriculture, which have necessitated drastic cuts in experiment and scientific research, including the dismissal of 567 workers in scientific projects. It is rather difficult to understand the necessity for so much retrenchment in established activities when the government is at the same time spending vast sums (stated to be over $200 per second) on its national recovery program. An explanation attributed to Assistant Secretary Tugwell is given in an editorial review in the current number of *The Reader's Digest.* This statement repeats the basic idea of the New Deal, that the purchasing power of the farmers and factory workers must be restored, for which at least 5 billions of dollars was needed. It then adds: "Meantime ordinary government expense had to go on *and this expense had to be kept down and carefully watched.* To take care of the extraordinary expense there had to be also an extraordinary budget. . . . A business man may borrow large sums to modernize his plant or find new markets."

Probably no one will deny the advisability of a business man borrowing, under certain conditions, to modernize his plant or to find new markets, but his wisdom might well be questioned if, in making these improvements, he allowed his existing efficient machinery to deteriorate so that it would have to be replaced, resulting not only in additional cost but also in delay in getting into effective production on the new scale. Similarly, even though we may be in sympathy with the government's recovery program and appreciate the need of efficiency and economy in ordinary government operations, nevertheless we may question whether wisdom is being shown in drastic budget reductions which mean actual elimination of many lines of investigation and consequent interruption of fact-finding activities vital to the efficient administration of many government functions.