as a name, and would not select it for a scientific child, but he has not bothered to think up another, possibly better and maybe worse. Why should not deuterium be accepted, now that it has been chosen by the discoverers and has been used in print many times? There was no such wild nomenclatural furor a few years ago when Hevesy discovered a new element and patriotically called it "hafnium," after the ancient name of his city. He might have decided upon "copenhagenium," which would have been quite a strain. Urey, Brickwedde and Murphy would have been within their rights as discoverers if they had picked "newyorkium," because "columbium" is occupied, at least in this country, or if in imitation of Hevesy they had gone back several centuries and selected "eboracum."

The case of Mendelejeff and his three "eka-" elements is not quite the same as that of deuterium and its discoverers. The elements of Mendelejeff had not been found and were perhaps merely fancy touches added to attract attention to his revolutionary idea, the Periodic Law. It is not on record that he claimed priority for his names when the predicted elements were finally discovered and patriotically called gallium, scandium and germanium. By the same token, although it may be convenient to call a still heavier isotope of hydrogen "tritium," let us wait to hear from its discoverer before making a final decision.

Is protium needed? Or will it be if we finally agree upon deuterium and perhaps tritium? They are all but names, and there seems to be no necessity, logical or otherwise, to discard an old name for a new, just because it is supposed to suggest a relationship to deuterium. Is it not enough that deuterium, after we have learned what it is supposed to suggest, calls to mind double-weight hydrogen?

A further proof of the demoralization caused by heavy hydrogen is the endless debate about the proper symbols for protium, deuterium and eventually tritium. The writer can see no valid reason for abandoning the time-honored custom of using one or two letters of its name as the symbol for an element. Common consent, and not priority, seems to govern here. There can be nothing simpler than "D" for deuterium, and it is already in use. H^2 is troublesome to the typist and to the typesetter, to say nothing of the confusion of the French chemist, who writes H^2O for water. One difficulty when setting type, as pointed out by an editor of long experience,[1] is that superscripts and subscripts are cast on full-sized bodies, so that it is not possible to set one above the other in proper horizontal alignment. This is shown on the last line of page 203 of SCIENCE for March 2, where the subscript 2 is far too low. On the fourth line of the next page it is in its correct position, because there is no superscript to force it down. An alternative often seen is to waste space thus: $H^2{}_2O$.

A recent suggestion to use a bold-faced H for deuterium would be anathema to the typist, who already has trouble enough with formulas in which Greek letters or special symbols are used. One can imagine, also, the impatience of a lecturer at the blackboard, writing ordinary H's, and trying to make convincing bold-faced ones, too. For his sake and the typist's, one can almost wish that tritium will not be discovered, because Old English letters are bad enough when they are printed.

Already there is evidence of a tendency to see what happens if deuterium is put in place of hydrogen in organic compounds. If this goes far enough, the chemist is confronted with the ghastly prospect of a new edition of "Beilstein" of colossal dimensions. The burden of typing the manuscript, of setting the type and of correcting the proof will not be easy if there are to be innumerable superscripts in addition to the indispensable subscripts, or if two fonts of type must be drawn upon in setting each of hundreds or thousands of formulas. Surely this is an argument for simplicity. Let us continue to use H as the symbol for the common old hydrogen we thought was the only kind all these years. This will also be for the benefit of the numerous public who can say "H_2O" as their one bit of chemical knowledge. When the third isotope is found will be time enough to discuss its symbol.

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[1] E. J. Crane, editor of *Chemical Abstracts*.

THE "FAT-METABOLISM" HORMONE AND HYPERGLYCEMIA

IN 1931 Anselmino and Hoffman[1,2] obtained a fraction from the anterior pituitary which, when injected into rabbits, markedly increased the acetone bodies in the blood. Funk[3,4] showed that this peculiar "fat-metabolism" hormone is present in the urine of pregnancy and in normal urine. Funk obtains an active fraction by precipitating the material in urine with benzoic acid, removing the latter (plus theelin or male hormone, if present) with alcohol and extracting the residue with ammonium hydroxide. Katzman and Doisy,[5] in preparing active extracts from the urine of pregnancy, use essentially the same method, except that acetone instead of alcohol is used to extract the benzoic acid. The active material in the residue is extracted with water. In a subsequent

[1] *Klin. Woch.*, 10: 2380, 1931.
[2] *Klin. Woch.*, 10: 2383, 1931.
[3] *Biochem. Jour.*, 26: 619, 1932.
[4] *Proc. Am. Soc. Biol. Chem.*, 8: 43, 1933.
[5] *Jour. Biol. Chem.*, 98: 739, 1932.

publication,[6] Katzman and Doisy, using their method for getting the gonadotropic factor of pregnancy urine, and applying it to the urine of men, find that hyperglycemia is produced by these extracts. They make one change in their method of preparing the extract, which is not without significance when compared to the method used by Funk: instead of extracting the final residue with water they use dilute alkali (pH 8–9).

The conclusion is pretty well forced upon one that Funk, on the one hand, and Katzman and Doisy, on the other, are dealing with one and the same substance. Funk has confined himself to acetone production and Katzman and Doisy to sugar excretion. That the pituitary is involved in carbohydrate metabolism is indicated by the work of Houssay,[7] Barnes[8] and others. Preliminary work, in which we prepared an extract according to Funk's method, shows quite clearly that a marked hyperglycemia, comparable to that resulting from Doisy's extracts, and a very definite increase in acetone in the blood, can be produced.

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THE USE OF SOLANUM INDICUM IN DIABETES[1]

IN 1927 Dr. Hugh M. Smith reported[2] that the fruit of a certain solanaceous plant growing wild in Siam, when taken orally by diabetics, had a marked influence on the sugar content of the urine. No blood sugar tests were made, and Dr. Smith suggested that the matter be more thoroughly investigated. Through the good offices of Dr. Smith, as well as Dr. A. G. Ellis, of the Rockefeller Foundation, the Siamese Ministry of Agriculture and others, supplies of the fruit were obtained from Siam from time to time and tested clinically.

During the course of these studies two reports appeared, giving negative results following the administration of these fruits parenterally to animals[3] and orally to a very few patients.[4]

Our first experiments were rather favorable. The blood sugar was lowered for a few days, after which the medicament had little or no effect. The question arose whether the potency had been reduced as a result of the drying and aging of the fruit incidental to the long journey from Siam. Moreover, the fruit comprised two forms, one of which bears thorns, while the other does not. The latter, *Solanum Sanitwongsei,* was the form used by Long and Bischoff, and by Bulger, while the first shipment sent us by Dr. Smith consisted almost entirely of the thorned form. The inconstancy of our results, therefore, might have been due to a varying mixture of the two forms. It was accordingly thought advisable to attempt to grow the thorned form and have it "pure" and fresh. Dr. Lela V. Barton, of the Boyce Thompson Institute for Plant Research, succeeded in growing several plants, which were identified as *Solanum indicum* by Dr. E. D. Merrill, of the New York Botanical Garden, where it was successfully grown but fruited so late that frost destroyed most of the fruit. Finally, Dr. T. B. McClelland, of the Puerto Rico Agricultural Experiment Station, Mayaguez, P. R., was successful in growing the plant and in shipping to New York at frequent intervals sufficient fruit for more extensive clinical tests.

The material was dried, ground and encapsulated. It was given to patients under a variety of conditions and in different dosages, with and without insulin. Since the results were negative, or at best inconstant, there is no need to report details. In a few instances the material seemed to replace a small amount of insulin, but in no case was such an effect permanent. The patients usually "felt better" during the treatment, but whether this was due to a psychic effect or to the influence of a glucoside of the digitalis series, which is present,[5] we do not know.

In this study I have had the cooperation of a number of clinicians who have tested the material on patients in their own practises and in the clinics of several hospitals. Among them are Drs. Reginald Fitz of Boston, Benjamin Eis and Lionel Rosenberg of Brooklyn, Sydney Gubin of Mt. Vernon, and P. J. R. Schmahl, Saul Ritter, A. S. Blumgarten, Harry D. Leinoff and the late S. Franklin Adams of New York. I am also grateful to Mr. A. Rosenthal, Miss R. Halpern and Drs. Merrill, McClelland and Barton.

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EXERGIC AND ENDERGIC REACTIONS

SINCE my publication[1] of a note on "Exergic and Endergic Reactions," my attention has been called to the prior use of the words exergic and endergic by Bergen Davis[2] in connection with nuclear transformations. Although he apparently employed these terms

[6] *Proc. Soc. Exp. Biol. and Med.,* 31: 315, 1933.
[7] *Endocrinology,* 15: 511, 1931.
[8] *Endocrinology,* 17: 522, 1933.
[1] Aided by a grant from the Lucius N. Littauer Foundation, Inc.
[2] SCIENCE, 66: 619, 1927.
[3] M. L. Long and F. Bischoff, *J. Pharmacol.,* 38: 313, 1930.
[4] H. A. Bulger, *Proc. Soc. Exp. Biol. and Med.,* 27: 920, 1930.

[5] H. Tauber and I. S. Kleiner, Proceedings of the American Society of Biological Chemists. (In press.)
[1] SCIENCE, 79: 84, 1934.
[2] SCIENCE, 76: 615, 1932.