rise to glucose-6-phosphate and to glucose-1-phosphate. The results presented point to the correctness of the mechanism of action of this enzyme as formulated. It was possible to study the two-step mechanism and identify the products, As stated, it is not necessary to assume that the enzyme-phosphate bond in reactions 1 and 2 is of one type. If more than one exists, it would necessarily mean that they must interact in order to maintain the catalytic function of the enzyme.

References and Notes

1. M. Doudoroff, H. A. Barker, and W. Z. Hassid, *J. Biol. Chem.* **168**, 725 (1947).
2. V. Jagannathan and J. M. Luck, *J. Biol. Chem.* **179**, 569 (1949).
3. V. A. Najjar, in the symposium on *Mechanism of Enzyme Action*, by McElroy and Glass (Johns Hopkins Press, Baltimore, 1954) p. 731.
4. M. E. Pullman and V. A. Najjar, *Fed. Proc.* **13**, 277 (1954).
5. The conditions employed in the experiments necessitated the use of small quantities of hexose phosphates in order to approximate the order of magnitude of the available enzyme concentration. It was, therefore, impossible to measure the glucose-1-phosphate that was formed owing to the unfavorable equilibrium in that direction (4.5 percent as glucose-1-phosphate) (*6*).
6. V. A. Najjar, *J. Biol. Chem.* **175**, 280 (1948).
7. P. J. Keller, unpub. observations.
8. C. E. Cardini, A. C. Paladini, R. Caputto, L. F. Leloir, and R. E. Trucco, *Arch. Biochem.* **22**, 87 (1949).
9. E. Racker, *J. Biol. Chem.* **167**, 843 (1947).
10. O. Warburg, W. Christian, and A. Griese, *Biochem. Z.* **282**, 157 (1935).
11. B. L. Horecker, *J. Biol. Chem.* **183**, 593 (1950).
12. We are indebted to Bernard Horecker for a gift of TPN cytochrome c reductase, to Ralph De Moss and Charles R. Park for Zwischenferment preparations from *Leuconostoc mesenteroides* and brewers yeast, respectively.
13. The glucose-1-phosphate (Schwarz) contained negligible amounts of glucose diphosphate (3×10^{-5} μM/μM of the monoester). Glucose-6-phosphate (Schwartz) contained no measurable quantity of the coenzyme.
14. We are grateful to Luis Leloir for a sample of glucose-1,6-diphosphate.

Frank Henry Pike: 1876–1953

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DR. Frank Henry Pike died in New York, on November 13, 1953. Thus, science lost one of its keenest contributors, and neurophysiology lost one of that generation of scientists through whom it came of age in America.

He was born in Aurora, Illinois, January 20, 1876, the eighth child of William Dana Pike and Maria Wilmoth Pike. Shortly thereafter the family returned, for a stay of 4 years, to Brattleboro, Vermont. They then took up a farm near Plainfield, Illinois. Here Frank Pike grew to the age of 15. Then he and his brother Henry drove their wagon to Colorado to homestead near Montrose. The adventure lasted 2 years, and the joy of it lasted all his life. On his return, age 17, to the Middle West, he alternately taught school and studied, first at Valparaiso University and then at Indiana University, from which he was graduated in 1903.

Thence, he went to the University of Chicago where he began his work in the physiology of respiration under the guidance of Professor A. G. Mathews, whom he always regarded as a major source of his own scientific inspiration. He received his Ph.D. in 1907 and remained there as instructor in physiology for 4 years. As yet, there is no complete bibliography of his writings, but it is safe to say that during those 4 years he began his terse articles for which we, as readers of science, are so much in his debt.

In 1911, Dr. Pike came to the City of New York as assistant professor in the Department of Physiology of the College of Physicians and Surgeons of Columbia University. Because the teaching of physiology in medical schools is inevitably slanted toward clinical problems, his influence was uniquely important, for he preserved an interest in comparative physiology and a broad clear academic vision of the relevance of other fields of science to physiology. Moreover, none of his students could escape knowing the progress of physiology as a history of ideas impelled and controlled by experiment. Although he spoke very slowly, even those of us who were most familiar with his way of thinking had to hurry to keep pace with his ideas. This was apparent in 1921 when he became associate professor, and it remained true of him, despite his official retirement in 1941, throughout his special lecturer days, and terminated only at his death.

During his later years, he started two major works and, for each, amassed much material organized in outline of increasing detail. The first concerns the historical development of those concepts that are of importance to a full knowledge of the functions of the central nervous system, including much of psychology. The second is a study of the evolution of the nervous system from a functional point of view. Probably, he never would have completed them to his satisfaction, but it is the hope of his friends, students, and admirers that these voluminous manuscripts may be arranged for publication in a form that he would have tolerated.