because the two hormones differed only in that, in vasopressin, the isoleucine of oxytocin was replaced by phenylalanine and leucine was replaced by arginine or lysine (*9*). Similarly, the potency of a synthetic peptide which was the same as oxytocin except for the fact that isoleucine was replaced by valine (*17*) fitted well with the classical concept of structural specificity. These findings show that the nature of every amino acid residue in the oxytocin molecule is not crucial for activity. Some can be exchanged for related residues. However, the recent demonstration by Schwarz, Bumpus, and Page (*18*) and by Dekanski (*19*) that angiotonin (hypertensin) has high oxytocic activity (when tested on isolated rat uterus) recalls once again the findings with strepogenin and lycomarasmin and gramicidin S. Angiotonin has the structure aspartylarginylvalyltyrosylisoleucylhistidylprolylphenylalanine (*18*) and thus bears little resemblance structurally to oxytocin. If we may extrapolate from the experience with strepogenin, we might not be surprised to find that a peptide composed of the eight amino acids in natural oxytocin, but with their sequence completely changed, would show oxytocic activity (compare SHLVG with VHGSL in the strepogenin test).

Another case of the lack of structural specificity of a peptidic hormone is the vasopressin activity of pepsitensin. Although the structure of pepsitensin has not been established yet, the evidence (*20*) strongly suggests that it will differ considerably from that of vasopressin.

Because the assay systems for biologically active peptides are complex, there is a possibility that simplification of the systems to single chemical reactions might sharpen the specificity. There is, however, no assurance that this will be the case. Some expansion of the classical view about specificity seems to be required.

Summary

The data now at hand show that specificity among biologically active peptides is probably not as exquisite as might have been deduced from experiences with some of the water-soluble vitamins. It is plain that a given biological effect can be evoked by peptides which differ considerably. It is likewise plain that the effect cannot be evoked by a number of other peptides. There is apparently some specificity, but more is involved than that incorporated in the classical view.

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News of Science

Hughes Appointed to Editorial Board

On 1 August Donald J. Hughes, senior physicist at the Brookhaven National Laboratory, was appointed to the Editorial Board of *Science*. Hughes, who was born in Chicago in 1915, took both his undergraduate and graduate work at the University of Chicago. His research for the Ph.D., which he obtained in 1940, was in the field of cosmic rays, in connection with which he was a member of a cosmic ray expedition to South America in 1941. He remained at Chicago as an instructor in the physics department until the U.S. Navy called him to direct a section on underwater ordnance research at the Naval Ordnance Laboratory in Washington, D.C., in 1942. Until 1943, Hughes remained at the Naval Ordnance Laboratory working with mine and torpedo detectors, including a period spent with the British ordnance at Edinburgh, Scotland.

Early in 1943, Hughes joined the Manhattan Project at the University of Chicago at the time the first pile was starting operation. He did classified pile neutron research, including 1 year (1944) spent at Hanford, Washington, when the large chain-reacting piles for production of plutonium were put in operation. In 1945 he returned to Chicago and became director of the Nuclear Physics Division of the postwar Argonne National Laboratory, which was formed by the Atomic Energy Commission. He left Argonne in 1949 to become a senior physicist in charge of a group doing pile neutron research at Brookhaven National Laboratory. In addition, Hughes served as chairman of the Nuclear Cross Sections Advisory Group of the Atomic Energy Commission.

Hughes has worked in practically every branch of neutron physics that can be handled at the pile. With Spatz and Goldstein, at Argonne, he developed a method for measuring fast neutron cross sections, which became the basis of G. Gamow's theory of the origin of the elements and was also applied to the design of fast neutron breeder reactors, such as the experimental breeder reactor now in operation at Arco, Idaho. At Brookhaven, Hughes' group has done significant work in connection with neutron "mirrors," in which the mirror reflection of neutrons was used to measure the neutron-electron interaction, which has a bearing on modern meson theory. His group has also developed the "fast chopper," which has yielded much nuclear information, and techniques of working

with "cold" neutrons used to study the motions of atoms in crystals.

Hughes has written several books: *Pile Neutron Research* (Addison-Wesley, Cambridge, Mass., 1953), *Neutron Optics* (Interscience, New York, 1954), *Neutron Cross Sections* (Pergamon, New York, 1957), and *On Nuclear Energy* (Harvard University Press, Cambridge, Mass., 1957). In addition, he has written many articles for various technical and nontechnical journals and periodicals. He spent the 1953–54 academic year as a Fulbright professor in Europe, served as chairman of the Federation of American Scientists, and prepared the compilation *Neutron Cross Sections,* which was distributed at the Geneva Atoms for Peace Conference in August 1955. *Pile Neutron Research, Neutron Optics,* and *Neutron Cross Sections* have all been translated by the U.S.S.R. into Russian. At present he is managing editor for a series of books entitled *Progress in Nuclear Energy,* published by Pergamon Press, London. Several trips to Europe have afforded him an opportunity to keep in touch personally with atomic energy research in many countries on both sides of the Iron Curtain, the latest visit having been a trip to Poland and the U.S.S.R. at the invitation of the respective Academies of Science of these countries.

Hughes will be in Geneva, Switzerland, late this summer as one of the U.S. representatives to the Second International Conference on Peaceful Uses of Atomic Energy. He has been requested by the secretary-general of the conference to present a paper reviewing the most recent world-wide nuclear data of technical importance. In connection with the conference, a second, completely revised edition of *Neutron Cross Sections* has recently been completed at Brookhaven National Laboratory under Hughes' supervision. It is now being published by the U.S. Government Printing Office for distribution at the Geneva meeting and for general sale.

The Physical Science Study Committee, recognizing the scarcity of interesting literature of science at the high school level, has launched a new program, under a grant from the National Science Foundation to the Massachusetts Institute of Technology, to revise the teaching of physical sciences in the high schools. As a supplement to this program, Hughes has recently completed a monograph for the committee, entitled *The Story of the Neutron.*

In addition to being an authority on nuclear physics, Hughes has also written on the relationship of science to society for newspapers and magazines, and has recently completed a chapter "Atoms, energy and peace" for Lyman Bryson's

forthcoming book, *An Outline of Man's Knowledge.*

Hughes' wide experience in research and in publishing make him particularly well qualified for membership on the Editorial Board. The editorial staff takes pleasure in announcing his appointment and in welcoming him to the board.

Relocation of the 1959 and 1961 Annual Meetings of the AAAS

When Denver was chosen as the site of the December 1959 annual meeting of the AAAS, it was expected that new, large hotel and exhibit facilities, now under construction, would go into operation by September 1959. It is now unlikely that the contract date will be met. The other facilities of Denver, though some have been increased, are inadequate for a large-scale meeting that would also be compact and convenient. Accordingly, the AAAS Board of Directors authorized a postponement of the Denver meeting until 1961 and other arrangements for next year. The Executive Committee has just approved the following schedule: December 1959, Chicago (instead of Denver); December 1960, Philadelphia (no change); December 1961, Denver (instead of Milwaukee); December 1962, Boston (no change); December 1963, Milwaukee.

It is regretted that these changes are necessary. Some of the societies have already appointed representatives on the AAAS Council from the Denver area and many have already given thought to local program chairmen for 1959. It is hoped, however, that this announcement arrives in time to avert any serious inconvenience.

The association has not met in Chicago since 1947 and next year's meeting there—in large hotels in the "Loop," such as the remodeled Morrison and the Sherman, will be of maximum convenience. The first winter meeting of the AAAS in Denver in 1961 will profit by the 2-year delay.

RAYMOND L. TAYLOR

AAAS

Science Education for Negroes

The National Urban League, New York, a voluntary interracial agency, has announced plans for a nationwide educational program designed to direct a larger number of Negro students into careers in scientific and technical fields. The program, entitled Tomorrow's Scientists and Technicians, will be conducted by local Urban Leagues throughout the nation "to search for and discover youth who have high potential ability for careers as professional workers and technicians, and to provide them with adult encouragement, guidance and assistance to help them reach their potential." While the program is designed especially for Negro youths, it will not be restricted to them.

A National Technical Advisory Committee of scientists and technicians drawn from business, industry, labor, and education will serve as program consultants. This group will be headed by J. Ernest Wilkins, Jr., assistant manager of research and development for the Nuclear Development Corporation of America at White Plains, N.Y. Also, a national sponsoring committee representing varied civic interests is supporting the 10-year effort, which is expected to cost at least $100,000 a year.

The program will acquaint adult leadership groups in hundreds of communities with ways to help motivate students to raise their career aspirations. The program will include group guidance sessions for parents and youth; face-to-face meetings with persons of achievement; visits to colleges to learn about admission requirements; scholarships; occupational trips to offices and industrial plants; visits to science exhibits and fairs; and part-time and summer jobs.

Although the present occupational position of the Negro in America is better than it has ever been, many gains remain to be made. Negroes are very poorly represented among the nation's scientists and in the professions generally. Of the 28,000 engineers who were graduated from the nation's schools last year, fewer than 200 were Negroes. The situation is similar for other professional fields.

Thousands of able Negro youths do not get encouragement, either at home or in school, to work toward high scholastic goals. With no motivation, and with fear that years devoted to difficult studies would lead only to frustration, these