This group includes the New York Hospital, Cornell University Medical College, with which Memorial Hospital is affiliated, and the Rockefeller Institute for Medical Research.

THE INSTITUTE OF NUCLEAR STUDIES AND THE INSTITUTE OF METALS AT THE UNIVERSITY OF CHICAGO

IT is planned to establish at the University of Chicago an Institute of Nuclear Studies and an Institute of Metals. Dr. Samuel K. Atkinson, professor of physics, will serve as the director of the Institute of Nuclear Studies.

Dr. Enrico Fermi and Dr. Harold Urey, both of Columbia University, have been appointed professor of physics and professor of chemistry, respectively. Members of the institute will include Dr. Philip W. Schutz, professor of chemical engineering, Columbia University; Dr. Edward Teller, professor of chemistry, George Washington University; Dr. Joseph E. Mayer, professor of chemistry, Columbia University, with his wife, Maria Goeppert Mayer, who will serve as research associate; Dr. Walter H. Zinn, associate professor of physics now in war research in Chicago, and Dr. John Simpson, Dr. Robert F. Christy and Dr. Donald J. Hughes, all of the University of Chicago.

The staff of the Institute of Metals will consist of Dr. Cyril Stanley Smith, director, and Dr. Clarence Zener, professor of metallurgy.

SCIENTIFIC NOTES AND NEWS

THE University of Southern California, Los Angeles, conferred on June 23 the honorary degree of doctor of science on Dr. Walter L. Treadway, Los Angeles, formerly assistant surgeon general of the U. S. Public Health Service.

THE degree of doctor of laws of Queens University, Ontario, Canada, has been conferred on Dr. Walter R. Bloor, professor of biochemistry at the School of Medicine and Dentistry of the University of Rochester.

DR. ALBERT D. KAISER, professor of child hygiene at the School of Medicine of the University of Rochester, was recently awarded the Rochester Civic Medal by the Rochester Museum Association. Dr. Kaiser has also been elected for a three-year term to the Board of Trustees of the Rochester Academy of Medicine.

THE Government of Panama has conferred upon Dr. J. C. Geiger the decoration of the Orden de Vasco-Nunez de Balboa, grade of Knight Commander. This is granted with the same citation as previously bestowed by Panama in 1942: "For distinguished, distinctive and generous services in public health given over a long period of time to the residents from Panama and to Panama, and a living example of the perpetuation and enrichment of Pan Americanism."

DR. CORNELIA T. SNELL, of Brooklyn, has been elected chairman of the New York Section of the American Chemical Society.

DR. C. E. GORDON, professor of geology and mineralogy at the Massachusetts State College, has resigned as chairman of the division of science, a position that he has held since 1927.

DR. ARTHUR P. WYSS, head of the department of pharmacy of the University of Buffalo, has been appointed dean of the School of Pharmacy at Western Reserve University.

LIEUTENANT COLONEL HARDY A. KEMP, M.C., A.U.S., was recently named dean of the College of Medicine of Wayne University, Detroit. Since his return from two years service over-seas which included duty in the West Indies, British and French West Africa and India, he has been secretary of the Army Medical School in Washington, D. C. At the time of his return he was deputy theater surgeon for the China-Burma-India Theater. Prior to his taking active duty in February, 1942, Colonel Kemp was formerly dean of the Medical College and director of the University Hospital of the Ohio State University.

DR. WILFRED W. WESTERFELD, associate in biochemistry at the Harvard Medical School, Boston, has been appointed professor of physiology at the College of Medicine of Syracuse University.

DR. CARL G. HELLER, assistant professor of physiology at the College of Medicine of Wayne University, has been appointed associate professor of physiology and medicine at the School of Medicine of the University of Oregon.

DR. A. GLENN RICHARDS, JR., assistant professor of zoology at the University of Pennsylvania, has been appointed associate professor in the Division of Entomology and Economic Zoology of the University of Minnesota to teach and direct graduate research in insect physiology and insecticides.

DR. EDWARD P. CLAUS, formerly of the University of Pittsburgh, has been appointed assistant professor of botany and pharmacognosy at the College of Pharmacy of the University of Illinois. During the 1944–45 term he taught at the College of Pharmacy, University of Puerto Rico.

THE College of Medicine of the University of Tennessee announces the following promotions and new appointments: Dr. S. R. Bruesch and Dr. Frank Harrison have been promoted from assistant professorships to associate professorships of anatomy; Dr. Francis Murphey from assistant professor to associate professor of neurosurgery; Dr. James R. Reinberger from associate professor to professor of obstetrics and gynecology, and Dr. R. O. Rychener from assistant professor to associate professor of ophthalmology. Dr. Frank E. Whitacre has been promoted from associate professor to professor of obstetrics and gynecology, and has been made chief of the division. Dr. I. N. Dubin, of Duke University, has been appointed assistant professor of pathology and bacteriology; Dr. John Hunter becomes instructor in physiology, and Dr. Hugo Krueger, associate professor of pharmacology.

DR. A. C. HARDY, of Exeter College, has been appointed to the Linacre professorship of zoology and comparative anatomy at the University of Oxford from such date, not being later than January 1, 1946, as he can assume the work.

DR. NATHAN FASTEN, who recently resigned as professor and head of the department of zoology at Oregon State College, has been appointed chief biologist for the State of Washington Pollution Control Commission. His office is in Bagley Hall, University of Washington, Seattle, Wash.

WALLACE E. PATT, petroleum geologist, has retired as a director and member of the executive committee of the Standard Oil Company of New Jersey.

DR. IRVING H. BLAKE, professor of zoology at the University of Nebraska, has been granted leave of absence for the fall semester in order to continue his ecological research on "A Seasonal Study of the Animal Communities of Mt. Lincoln, Colo.," which he has been carrying on during the summers in the Rocky Mountains.

THE Federation of British Industries, of which Dr. B. J. A. Bard, chemist, is chief of the executive staff, has voted to establish a special research committee to maintain close liaison between industry and science. A committee of twenty members presided over by Sir William Larke has been appointed. The chief objectives of the group are to maintain contact between British companies and research organizations to encourage British industry to extend its research facilities and to see that the results of research are utilized to the fullest. A two-day conference on "Industry and Research" is planned in London, at which special emphasis will be laid on the practical means by which research can assist industry and promote industrial efficiency, exports, full employment and a higher standard of living.

THE Gerontological Society, Inc., an outgrowth of the American Division of the Club for Research on Ageing, founded in 1939, plans to establish *The Journal of Gerontology,* to be issued quarterly beginning during the first quarter of 1946. The Committee on Publications consists of Dr. Roy G. Hoskins, Harvard Medical School, *chairman;* Lawrence K. Frank, New York; Dr. William de B. MacNider, University of North Carolina, and Dr. Edward J. Stieglitz, Washington, D. C. The editor-in-chief is Dr. Robert A. Moore, Washington University School of Medicine, St. Louis.

DR. WM. RANDOLPH TAYLOR, of the University of Michigan, writes to SCIENCE that a card received from Professor Paul van Oye of Ghent, student of the freshwater algae of Belgium and its possessions, indicates that he is well and apparently has been able to continue scientific work during the war. Professor A. Conard wrote indicating that the *Jardin expérimental Jean Massart* at Brussels, and its collections, had suffered little during the German occupation. Professor Conard has returned to his work at the experimental gardens. A letter from Dr. Josephine Th. Koster, phycologist and assistant in the Rijksherbarium, Leiden, indicates that that institute, its staff and collections, survived the German occupation without loss.

PROFESSOR AUSTIN M. PATTERSON, of Antioch College, writes to SCIENCE that Dr. W. P. Jorissen, Hooge Rijndijk 15, Leiden, Holland, editor of *Chemisch Weekblad* and *Recueil des travaux chimiques des Pays-Bas,* reports that the Dutch need American chemical literature, and he hopes that American colleagues will send reprints of their publications during the last six years. Review copies of new books will of course be very welcome. Dr. Jorissen offers to arrange for the distribution of books and reprints which may reach him. He and his family are recovering from malnutrition due to insufficient food.

THE officers, executive committee and members of the Division of Geology and Geography of the National Research Council, for the year beginning on July 1, 1945, are as follows: *Chairman,* William W. Rubey; *Vice-chairman,* Lester E. Klimm; *Executive Committee,* William W. Rubey, Lester E. Klimm, Charles H. Behre, Jr., Monroe G. Cheney, Otto E. Guthe, Marshall Kay; *Representatives of Societies,* Marland Billings and Marshall Kay, Geological Society of America; J. F. Schairer, Mineralogical Society of America; L. W. Stephenson, Paleontological Society; Otto E. Guthe and Glenn T. Trewartha, As-

sociation of American Geographers; Raye R. Platt, American Geographical Society; Charles H. Behre, Jr., Society of Economic Geologists; Monroe G. Cheney, American Association of Petroleum Geologists; L. H. Adams, American Ceramic Society; John A. Fleming, American Geophysical Union; *Representative of the Government designated by the President of the United States,* W. E. Wrather; *Members at Large,* W. Storrs Cole, Lester E. Klimm and William W. Rubey.

SPECIAL ARTICLES

THE *IN VITRO* PROTECTION OF PENICILLIN FROM INACTIVATION BY PENICILLINASE

RECENTLY the authors reported a method for the production of an anti-penicillinase immune serum.[1] As readily as the acquisition of immune sera would permit, the investigations were extended to evaluate the therapeutic utilization of such a preparation.

Chow and McKee[2] demonstrated the delayed action of penicillin by combining it with human plasma proteins. They further state that this penicillin-albumin complex, unlike the sulfonamide-albumin complex believed not to possess bacteriostatic activity,[3] does demonstrate antibiotic activity. It was therefore believed that a penicillin-immune plasma protein complex would possess bacteriostatic activity and what is probably more important, also offer protection to the penicillin from destruction by penicillinase.

EXPERIMENTAL

Normal rabbit serum and penicillinase immune rabbit serum were added in varying amounts to a solution containing 4,000 units of penicillin. The volume was restored to 2 cc and after 6 hours' contact, with occasional shaking at 5° C, penicillinase (purity-380 units/mgm) was added in varying amounts, the volume restored to 5 cc, shaken well and incubated at 37° C for one hour. The samples were removed, cooled in an ice bath and immediately assayed by the agar cup plate method.

Experiments were made at two levels of penicillin, with a more pronounced effect at the lower level.

It was found that under the conditions of the experiments, 4,000 units of penicillin were protected from inactivation by as high as 100 units of penicillinase through the addition of 0.25 cc of immune serum. In the control series with normal serum or saline no protection was afforded and less than 25 units of penicillinase were needed for complete inactivation of the penicillin in one hour at 37° C.

TABLE 1

	Serum volume (ml)	Penicillinase units	Penicillin (Oxford units)	Activity (after 1 hour)
Normal serum	0.25	5	4,000	+
	0.25	10	"	+
	0.25	15	"	+
	0.25	20	"	+
	0.25	25	"	0
	0.25	30	"	0
	0.5	5	"	+
	0.5	10	"	+
	0.5	15	"	+
	0.5	20	"	+
	0.5	25	"	0
	0.5	30	"	0
Immune serum	0.25	70	"	+
	0.25	80	"	+
	0.25	90	"	+
	0.25	100	"	+
	0.25	110	"	0
	0.5	80	"	+
	0.5	90	"	+
	0.5	100	"	+
	0.5	110	"	+
	0.5	120	"	0

TABLE 2

	Serum volume (ml)	Penicillinase units*	Penicillin (Oxford units)	Activity (after 1 hour)
Normal serum	0.25	1	1,000	+
	"	3	"	+
	"	5	"	0
	"	7	"	0
	"	9	"	0
	"	11	"	0
Immune serum	"	25	"	+
	"	30	"	+
	"	35	"	+
	"	40	"	+
	"	45	"	+
	"	50	"	+
	"	55	"	0
	"	60	"	0

* A unit of penicillin[4] is that amount of enzyme which in 11 ml of pH 7.0 solution containing 50 Oxford units of penicillin will destroy in one hour at 37° C an amount of penicillin equal to 57.5 per cent. of the penicillin recovered in the control.

In Table 2 it will be noted that the protective effect of immune sera for penicillin is exaggerated by the use of less penicillin (1,000 units instead of 4,000 units) under the same test conditions. It was found that 1,000 units of penicillin was protected from inactivation by as high as 50 units of penicillinase through the addition of 0.25 cc of immune serum, whereas in the control series with normal serum less than 5 units of penicillinase was required for complete inactivation of the penicillin in one hour at 37° C.

It is not known whether a true chemical compound is formed by the addition of penicillin to immune plasma protein, but should this be the case, there would result not only a slower excretion of this com-

[1] D. Perlstein and A. J. Liebmann, SCIENCE, this journal.

[2] B. C. Chow and C. M. McKee, SCIENCE, 101: 67, 1945.

[3] B. D. Davis, SCIENCE, 95: 78, 1942.

[4] E. B. McQuarrie, A. J. Liebmann, R. G. Kluener and A. T. Venosa, *Archiv. Biochem.*, 5: 307, 1944.