ality tied his students and associates to him with a bond of deep affection.

It is small wonder that the occurrence of Timoshenko's sixtieth birthday was seized upon as an opportunity for a demonstration of gratitude, respect and affection, not only by those who had studied under him or had otherwise been associated with him, but also by other engineers of distinction who worked in the field of applied mechanics. The leaders in this field in other countries—in England, Germany, Holland and Turkey—were not to be denied the opportunity of joining in this demonstration.

The "Sixtieth Anniversary Volume of Contributions to the Mechanics of Solids" which was presented to Timoshenko at his birthday dinner contains contributions from thirty scientists. The contributors include Prandtl, G. I. Taylor, von Karman, Southwell, Biezeno, Westergaard, Nadai, Den Hartog, von Mises and other recognized leaders. Their papers cover such problems as buckling, vibration, friction, fatigue, elasticity, dynamic stability, stress analysis, creep and plasticity. The book is a serious contribution to the solution of many problems in the mechanics of solids.

LIONEL S. MARKS

HARVARD UNIVERSITY

DOCTORATES OF SCIENCE CONFERRED BY YALE UNIVERSITY

YALE UNIVERSITY on June 21 conferred the degree of doctor of science on Dr. Hans Zinsser and on Dr. Ross Granville Harrison. The remarks made by Professor William Lyon Phelps, public orator of the university, in presenting the candidates, and the citations of President Charles Seymour, in conferring the degrees, follow:

HANS ZINSSER, SC.D.

Professor Phelps:

After graduating from the School of Medicine at Columbia in 1903, Dr. Zinsser began his lifelong uncompromising war against infectious diseases. Within seven years he had attracted the attention of experts; and was called across the United States to be professor of bacteriology at Stanford University. Three years later Columbia recaptured him and in 1923 he made the Northeast Passage, unfortunately not stopping at New Haven, and became professor of bacteriology and immunology in the Medical School at Harvard.

But the Western Hemisphere was not large enough either to provide sufficient material for research or to contain his rapidly growing reputation. Like Scipio, he carried the war into Africa and later into the Far East. His textbook has been translated into Chinese.

During the World War, he was a member of the Red Cross Sanitary Commission to Serbia and with the rank of colonel he had charge of laboratories to protect the health of American soldiers. He received the Distinguished Service Medal, and his manual for the sanitation of a field army is a model.

Meanwhile his researches continued with unabated energy. Two of his works have served as excellent guidebooks for medical students, physicians and public health officers.

He made an aggressive attack on the dreaded typhus fever, a scourge always accompanying war and famine. He isolated and manipulated the germ of typhus called Rickettsia, and from it succeeded in preparing a protective vaccine. By careful experiments often at personal risk, he has done more than any other investigator to clarify the various forms of these protean diseases, recognizing them in their deceptive disguises. A few years ago Dr. Zinsser gave some of the results of his studies in popular language through his exciting book "Rats, Lice, and History." With impressive logic relieved by original humor he showed the effects of man's poor relations among animals and insects; and this book has not only influenced investigators; it has been profitably consulted by historians.

He is one of the foremost laboratory scientists; and in the midst of his war against disease he has made friends everywhere in the world; his chronic courage is salted with humor; for although he is a medical philosopher, we may say of him what Edwards said to Johnson, "cheerfulness is always breaking in."

President Seymour:

Brilliant in the most daring and dangerous investigation, unmatched in color and clarity of exposition, master of detailed analysis and utilizing a wealth of humanism to enrich and illumine your scientific synthesis, Yale confers upon you the degree of Doctor of Science and admits you to all its rights and privileges.

ROSS GRANVILLE HARRISON, SC.D.

Professor Phelps:

In 1907 a very good thing happened to Yale. Dr. Harrison came hither as Bronson Professor of Comparative Anatomy. The chair was well named, for he had been teaching first at Bryn Mawr, and then at Johns Hopkins. Equipped with a Johns Hopkins Ph.D., and also a charming wife and an M.D. degree acquired at Bonn on the Rhine, the Sheffield mansion became his workshop and the house afterward called Mory's his home. In a few years he created the first university department at Yale, with the perilous honor of serving on both the Sheff and academic faculties as well as those of the Graduate School and the School of Medicine. He planned the Osborn Memorial Laboratories.

His classic papers on the development of the lateral line and the muscle nerve relationships in the frog focussed the attention of American scientists. When the arguments concerning the origin of peripheral nerves had reached a stalemate Harrison answered the question by growing the nerve tissues outside the body. This brain child, known as Tissue Culture, has grown to gigantic size. It is a method universally applied to living systems and to the solution of fundamental problems in both biology and medicine.

As an investigator he is known for his complete, critical and thorough attack upon the very heart of a problem. The experiments are perfectly planned and executed. In his teaching he has been the advocate of the "Sink or

Swim'' method as a result of which his scientific progeny in this country occupy many of the key posts. Strength has produced strength.

His honesty and integrity as man and scientist have received universal commendation. His scientific career has justly secured recognition throughout the world. He bears his honors with simplicity. In all ways he is genuinely and affectionately known wherever biologists are gathered as *''The Chief.''*

In all his honors he has shown the modesty, simplicity and kindness to those less gifted, which are characteristic sometimes of great minds. Retired from the field of active teaching, he gives his full time to research. He carries with him the affection and the respect of all members of the Yale Brotherhood.

President Seymour:

Revered and beloved leader, eminent scholar, selfless and inspiring personality, for the services you have rendered to this university in its laboratories, its schools of the arts, science, medicine—undergraduate and graduate—for your investigations and discoveries, and for the example you have given to American universities as the perfect scientist, Yale honors herself in conferring upon you the degree of Doctor of Science, admitting you to all its rights and privileges.

SCIENTIFIC NOTES AND NEWS

THE doctorate of science of Harvard University was conferred on June 22 on Dr. Percy W. Bridgman, on Dr. Charles F. Kettering and on Dr. Hans Zinsser. President Conant made citations as follows: Percy W. Bridgman, Hollis professor of mathematics and natural philosophy, Harvard University—"An experimentalist who transforms stubborn matter by high pressures; a logician who alters physical theory by acute analysis." Charles F. Kettering, engineer, president of General Motors Research Corporation, Dayton, Ohio—"An engineer in the great American tradition, an inventor whose imagination has quickened both industry and science." Hans Zinsser, Charles Wilder professor of bacteriology and immunology, Harvard University—"A dynamic teacher whose vision extends beyond his laboratory; a famed investigator of the secret ways of man's microscopic enemies."

COLGATE UNIVERSITY, at its one hundred and eighteenth commencement on June 12, conferred the doctorate of laws on Dr. Charles August Kraus, professor of chemistry at Brown University, president of the American Chemical Society.

THE University of Pennsylvania, on June 20, conferred an honorary doctorate on Dr. Joel H. Hildebrand, professor of chemistry at the University of California.

BROWN UNIVERSITY conferred on June 19 the doctorate of laws on Dr. Vannevar Bush, president of the Carnegie Institution of Washington, previously dean of engineering and vice-president of the Massachusetts Institute of Technology.

AMONG the honorary degrees conferred at the one hundred and seventieth annual commencement exercises at Dartmouth College on June 18 was the doctorate of science on Charles Franklin Kettering, president of the General Motors Research Corporation.

THE University of Rochester conferred honorary degrees on June 19 on Dr. Peter Henry Buck, director of the Bishop Museum, Honolulu, and on Dr. Philip A. Shaffer, dean of the Medical School of Washington University, St. Louis.

THE honorary degree of doctor of public health has been conferred by New York University on Dr. Sigismund S. Goldwater, commissioner of hospitals of New York City.

THERE was held at the University of Sofia, Bulgaria, from May 20 to 26 a celebration of the fiftieth anniversary of its foundation. On this occasion there were named ninety-two doctors *honoris causa* for outstanding achievement in various scientific and other directions. Of these the following were from America: Professor G. D. Birkhoff, Professor Claude Burton Hutchison, Professor Vladimir N. Ipatieff, Professor Albert Russell Mann, Professor William F. Russell, Professor Joseph Alois Schumpeter and Nikola Tesla.

THE Theobald Smith medal and prize of $1,000 has been awarded by the American Association for the Advancement of Science to Dr. Albert B. Sabin, of New York City, associate of the Rockefeller Institute for Medical Research, in recognition of his work on pneumococcus infections.

THE Society for the Promotion of Engineering Education on June 21 awarded the Lamme Medal for achievement in engineering education to Dr. Stephen Timoshenko, professor of mechanical engineering at Stanford University.

THE Lord Mayor of London, on behalf of British foundrymen, on June 14 presented a gold medal to Dr. T. A. Schwartz, research manager for the National Malleable Steel Casting Company, of Cleveland, for his research contributions to the progress of the foundry industry. Dr. Schwartz at the time was in London to attend a meeting of the International Foundry Congress.

THE Albert Medal of the Royal Society of Arts for 1939 has been awarded to Sir Thomas H. Holland, principal and vice-chancellor of the University of