more vigorous exercise of the dormant power which resides in the union of the illustrious bodies which together constitute the International Association of Academies.

ARTHUR SCHUSTER
ROYAL SOCIETY OF LONDON

SIR WILLIAM OSLER'S SILLIMAN LECTURES

SIR WILLIAM OSLER delivered the first of his six lectures on the "Evolution of Modern Medicine" on the Silliman foundation at Yale University on Monday afternoon, April 21. The last lecture was delivered on the 28 ult.

In his first lecture, according to the report in the *Yale Alumni Weekly*, Dr. Osler dealt with the origin of medicine in primitive man and its relation to magic and religion. Certain special practises, such as trephining, were described and illustrated by the lecturer. Egyptian medicine was considered in its three important aspects—magic, the use of animal extracts, and the specialized modes of practise recorded in the famous Ebers, Hearst and Berlin papyri. Divination, particularly by inspection of the liver, astrology and the Hammurabi code, were taken as illustrating the special features of Assyrian and Babylonian medicine. The extension of astrology was traced through Greece and Rome. Among the Hebrews the excellent hygienic regulations were discussed and brief reference was made to the miraculous healing in the New Testament. Dr. Osler showed that the character of ancient medicine may be studied today in China, where charms, enchantments and death-banishing herbs are universally employed.

In the second lecture Professor Osler dealt with the beginnings of science in Greece, dealing first with the nature philosophers of Ionia and south Italy, whose contributions to medicine, while not numerous, were of great importance as influencing the thought of subsequent workers. The physicians of this school were independent of the Osculapian cult, the growth of which he then sketched as met with at Epidaurus and Cos. The work of Hippocrates was discussed and his fundamental proposition that disease was a natural phenomenon to be studied. The high ethical character of Greek medicine was illustrated by the famous oath of Hippocrates. The rise of the Alexandrian School and the study of human anatomy was then considered, and the high-water mark of the period was reached in Galen of Pergamus, whose life and work were described.

In the third of his lectures he treated medieval medicine. He traced the stream of Greek medicine through the three channels in the middle ages—the first continuous Greek tradition in south Italy, which found its highest development in the School of Salernum; secondly, through the Byzantine sources; thirdly, through the Arabs, who by the ninth century had had translated for them all of the Greek writers. From the Spanish translators of the thirteenth century, from Salernum, and by the dispersion of learned Greeks with their manuscript after the fall of Constantinople, Greek medicine reached modern Europe. He then traced the growth of the universities of Bologna and Montpelier and their influence upon medicine, particularly the former, where anatomy was first studied. Medicine of the middle ages was a restatement from century to century of the facts and theories of the Greeks, modified here and there by Arabian practise. In Bacon's phase there was much iteration, small addition.

In lecture four Professor Osler dealt with the beginnings of modern medicine as illustrated in the lives and works of three men. Paracelsus represented the spirit of revolt against authority and tradition. His positive contribution to medicine was small in comparison with the stimulus which his antagonism to the older writers aroused in his generation. Vesalius was the first to describe and illustrate with system and accuracy the structure of the human body. He may be said to be the creator of human anatomy as we know it. Professor Harvey Cushing, of Harvard,

showed a collection of first editions of the works of Vesalius, among which was the Fabrica of 1543, one of the most sumptuous works ever published. Harvey—the first great student of a function of the body—demonstrated the circulation of the blood in a series of masterly experiments which have been a model for all subsequent workers. In the publication of the "de Motu Codris," modern physiology may be said to have had its origin.

In lecture five Professor Osler described the steps by which we had obtained our knowledge of the changes wrought in the body by disease—morbid anatomy, the rise of clinical medicine, the introduction of means of physical diagnosis and the development of experimental pathology. The modern study of infectious diseases was traced, the work of Pasteur and of Koch described, and the practical application by Lister of the antiseptic method. The new problems in relation to the internal secretions were discussed, and it was held that the future would be largely concerned with studies in metabolism and clinical chemistry.

In the last lecture the practical application of the knowledge derived from recent researches was considered in relation to some of the more important diseases. The story of malaria was told in full and it was urged that a more active campaign against the disease should be undertaken in the southern states. The victory over yellow fever was retold, and the experience of the Panama Canal Commission was held up as a model showing what efficient organization will do. The building of the canal was made possible by the work of Laveran and of Ross and of Walter Reed and his colleagues. An appeal was made for more efficient control of typhoid fever and for a continuance of the fight against tuberculosis.

PROFESSOR BOWMAN'S EXPEDITION TO THE CENTRAL ANDES

PROFESSOR ISAIAH BOWMAN, of Yale University, sailed from New York on April 26 to conduct a South American expedition under the auspices of the American Geographical Society. His purpose is to complete the investigations he began in 1907 in northern Chile and Bolivia and continued in 1911 in the basin of the Urubamba River, Peru. His work this summer will be in that part of the central Andes lying in Peru, northwestern Argentina, adjacent portions of northern Chile and southwestern Bolivia. Professor Bowman will be accompanied by Mr. H. S. Palmer as geologist and a surveyor.

His field work will chiefly relate to the anthropogeography and the physiography of this region. The investigation of topography, drainage and climate will thus go hand in hand with the distribution and customs of the people. Part of the work will lie in the driest portions of the Puna of Atacama and the adjacent desert of Atacama where villages in isolated situations, vast salt plains and lofty table lands alternate with rugged volcanic masses and snow-capped sierras. It is a little-known region and some of the most interesting parts of it have not yet been studied scientifically. The climatic conditions are of great interest and the possibility exists of securing critical data on past changes of climate since the region lies in the transition zone of the horse latitudes, between the trades and the westerlies. The shifting routes of trade have had remarkable effects on the towns and villages scattered along them, not only in stimulating them to an unnatural degree, but also in sudden decay.

An attempt will be made to cross the Andean Cordillera and the Desert of Atacama along two different parallels where the contrasts in altitude are most marked and thus to study the distribution of people under extreme conditions of physical environment.

The last part of the field season will be spent in investigating the border of the Titicaca Basin and descending the Desaguadero River as far as possible towards Lake Poopó. The elevation of the ancient strand lines of Lake Minchin, which once occupied a part of the Bolivian high plateau, will be determined. The relations of this now vanished lake and Lake Titicaca have never been investigated and the key to the problem will be sought in the outlet of the Titicaca Basin. There, also,