sixty years after the founding of Sigma Xi at Cornell University.

The Western Reserve University Chapter has elected the following officers for 1945–46: *President,* Dr. Helen A. Hunscher; *Vice-president,* Dr. Harry Goldblatt; *Secretary,* Dr. Moffatt G. Boyce; *Treasurer,* Dr. A. Sidney Harris.

At the Princeton University Chapter on June 5, the following new officers were elected: *President,* E. W. Engstrom, director of research, RCA Laboratories, Princeton; *Vice-president,* Professor W. O. Puckett, department of biology; *Secretary,* Professor M. H. Nichols, department of physics; *Treasurer,* Professor R. H. Wilhelm, Engineering School; *Committeeman,* Dr. W. M. Stanley, the Rockefeller Institute for Medical Research.

The Purdue University Chapter initiated twenty-five new members and associates at a meeting on May 8. At the close of the initiation exercises, new officers were elected as follows: *President,* W. L. Ayers; *Vice-president,* L. Greene; *Secretary,* Elizabeth Mackay; *Treasurer,* J. Tiffin. An important feature of the initiation dinner was the presentation of the first annual research award to be made by the chapter. It was presented by Professor C. V. Ludy, a charter member, to Donald J. Belcher in recognition of research on engineering characteristics of soils determined from studies of aerial photographs. The award consisted of a certificate, fifty dollars in cash and a plaque to commemorate the establishment of the award on which Mr. Belcher's name is the first to be engraved. Mr. Belcher has been invited to discuss his work before the chapter on some future date.

At a meeting which celebrated the tenth anniversary of the Smith College Chapter Dr. Albert Blakeslee, president, reviewed the decade of scientific achievement at Smith and welcomed seven graduate students and nineteen seniors into associate membership in the society. Dr. Katharine Blodgett, of the General Electric Company, gave an address on "The Colors of Thin Films."

The Abbott Laboratories Science Club, Chicago, is the first research group in the pharmaceutical industry to qualify for and be granted affiliation with the Society of the Sigma Xi. One hundred and eighty-four chemists, engineers, pharmacists, bacteriologists, pharmacologists, physiologists, physicians, botanists and other scientifically trained personnel of the laboratories attended the installation, which was held at the Georgian Hotel at Evanston, Ill. Dr. George A. Baitsell, professor of biology at Yale University and executive secretary of the society, conducted the installation ceremonies and presented the charter. Dr. Michael Heidelberger, professor of biochemistry at the College of Physicians and Surgeons of Columbia University, gave the address of the evening. It was entitled "Blood Complement."

SCIENTIFIC NOTES AND NEWS

THE honorary degree of doctor of science was conferred on the occasion of the one hundred and ninety-first commencement exercises of Columbia University on Professor Edwin Joseph Cohn, of the Harvard Medical School, and on Dr. Herbert Gasser, director of the Rockefeller Institute for Medical Research.

DR. W. B. R. KING, Woodwardian professor of geology in the University of Cambridge, has been awarded the Prestwich Prize of the Geological Society of France in recognition of his "distinguished researches and also for his services to France in *la géologie militaire* during the War of 1914–18 and 1939–45 as geological adviser to the British Army."

THE medal of the Liverpool Geological Society has been awarded to Dr. Douglas A. Allan, director of the Royal Scottish Museum, Edinburgh, in recognition of his original geological work, mainly connected with the structure and petrology of the Highland Border of Scotland and Angus, and in acknowledgment of his great services to the society.

THE Trudeau Medal of the National Tuberculosis Association was awarded at a meeting of the executive committee of the association on June 6 to Dr. Florence R. Sabin, emeritus member of the Rockefeller Institute for Medical Research, in recognition of her work on the pathology of tuberculosis and on the origin, nature and activities of the white blood cells. The medal is given annually for "meritorious contribution to the cause, treatment or prevention of tuberculosis."

THE Chauvenet Prize for 1941–43 has been awarded by the Mathematical Association of America to Professor R. H. Cameron, of the Massachusetts Institute of Technology.

ACCORDING to a wireless dispatch to *The New York Times,* Prince Louis de Broglie was admitted to the French Academy in the first public session that it has held since 1939. The address of welcome was made by Duc Maurice de Broglie, his brother, who was elected to the academy ten years ago. Both are physicists.

DR. GEORGE D. STODDARD, Commissioner of Education, and president of the University of the State of New York, who was for seventeen years a member

of the faculty of the State University of Iowa, has been elected president of the University of Illinois, where he will take up the work on July 1 of next year. He will succeed President Arthur Cutts Willard, who reaches the retiring age in August, 1946.

DR. JOHN LEWIS JONES, since 1920 head of the department of mathematics of the University of Akron, will retire from active work in September.

THE retirement in July is announced of Dr. J. H. McDonald, professor of mathematics at the University of California at Berkeley. He joined the faculty in 1902.

DR. JOHN HASTINGS, for twenty-one years professor of anthropological and economic geography at the College of the City of New York, has retired.

DR. RAYMOND M. FUOSS, research chemist of the General Electric Company, has been appointed Sterling professor of chemistry at Yale University, the appointment to take effect on July 1.

DR. FRANK M. CARPENTER has been promoted to a professorship of entomology and to the Alexander Agassiz professorship of zoology at Harvard University.

DR. H. B. TUKEY, professor of pomology at the New York State Agricultural College, has been appointed head of the department of horticulture of the Michigan State College.

H. K. WILSON, professor of agronomy at the University of Minnesota, will become head of the department of agronomy of the Pennsylvania State College. He has been for the past eighteen years a member of the Division of Agronomy and Plant Genetics at the university.

DR. WENDELL F. HESS, head of the welding laboratory at the Rensselaer Polytechnic Institute, has been promoted to a professorship of metallurgical engineering.

IT is reported in *Nature* that the Association of British Zoologists, which owing to the war had not met since January, 1939, held its tenth annual general meeting on March 24 in the rooms of the Zoological Society of London. Professor James Ritchie was elected president and Dr. John Smart, British Museum (Natural History), London, was elected honorary secretary.

DR. H. S. SOUTTAR, consulting surgeon to the London Hospital and formerly chairman of the council of the British Medical Association, has been elected president of the association in succession to the late Lord Dawson. He has also become manager of the Royal Institution, London.

THE retirement is announced of Sir Edward B. Bailey, D.Sc., F.R.S., director of the Geological Survey of Great Britain.

DR. J. E. WALTERS, professor of personnel administration at Purdue University, has been elected president of Alfred University, New York.

DR. EDMUND GIFFEN, since 1940 director of research at the British Institution of Automobile Engineers, has been appointed to the chair of civil and mechanical engineering of the University of London, tenable at Queen Mary College.

BRAYTON EDDY, administrator of entomology and plant industry for Rhode Island, has been named curator of insects and of reptiles at the New York Zoological Park. The late Dr. Raymond L. Ditmars was in charge of reptiles for more than forty years.

DR. ALEXANDER N. WINCHELL became emeritus professor of geology of the University of Wisconsin at the end of May, 1944. Since then he has served as consultant for industrial research laboratories in Louisville, Ky., Neenah, Wis., Cincinnati, Ohio, Niagara Falls, N. Y., and Cleveland, Ohio. On May 1 he accepted a position as resident consultant to the American Cyanamid Company at Stamford, Conn.

A GRANT of $6,000 has been made by the Corn Products Research Foundation to the University of California in aid of the researches of Dr. W. Z. Hassid on the chemistry of starch and other carbohydrates.

DR. ANTON J. CARLSON, emeritus professor of physiology of the University of Chicago, gave on May 28 the annual address of the Chapter of the Society of Sigma Xi of the University of Cincinnati. His subject was "Footnotes on the Core of Science in Liberal Education."

PROFESSOR EDWARD KASNER, of Columbia University, gave on May 16 before the forum of the Scripta Mathematica a lecture on "Mathematics in Hollywood."

DR. HUDSON HOAGLAND, executive director of the Worcester Foundation for Experimental Biology, on June 3 made the address at the one hundred and twenty-fourth commencement of Colby College.

IN connection with the fourteenth refresher course of the Canadian Medical Association at the University of Alberta, Edmonton, held from May 7 to 11, Colonel Richard Pearson Strong, director of tropical medicine, Army Medical School, Washington, D. C., delivered three lectures on "Tropical Diseases in Relation to the Present War."

DR. WALTER V. BINGHAM, chief psychologist in the Classification and Replacement Branch of the War Department, gave an address on "Psychology and the

War" before the Canadian Psychological Association during its annual convention which was held in Montreal on May 28 and 29. Presiding was Colonel William Line, of the University of Toronto, who is serving with the Canadian Army as director of personnel selection.

THE G. J. Symons Memorial Lecture of the Royal Meteorological Society was delivered on April 18 by G. E. R. Deacon. The title of his lecture was "Water Circulation and Surface Boundaries in the Oceans."

THE two hundred and sixty-sixth meeting of the American Physical Society with limited attendance at the Ohio State University was held on June 15 and 16. It included the second annual meeting of the Division of Electron and Ion Optics of the society, and a group of invited papers on biophysics, arranged by Dr. Detlev W. Bronk, Johnson professor of biophysics at the University of Pennsylvania. This meeting was held under the regulation of the Office of Defense Transportation limiting attendance to people living in Columbus and its local commuting zone and to not more than fifty coming from elsewhere.

A CONFERENCE of the Arts, Sciences and Professions in the Post-War World will be held on June 22 at the Waldorf-Astoria Hotel, New York City, under the auspices of the Independent Citizens' Committee of the Arts, Sciences and Professions. Dr. Harlow Shapley, director of the Harvard College Observatory, is chairman of the conference. Subjects to be discussed in the Science and Technology Panel are the discovery and development of science talent in American youth; the role of science in the development of regional resources; science opens up production; and post-war research possibilities. Professor Paul Sears, of the department of botany at Oberlin College and government consultant on agricultural problems, will speak on regional resource development. The problems of developing social talent will be discussed by Lieutenant Steuert Henderson Britt (USNR), formerly director of the Office of Psychological Personnel of the National Research Council. Professor Walter Rautenstrauch, of the department of industrial engineering of Columbia University, will discuss the relationship between science and industry.

THE seventh annual summer conference of the New England Association of Chemistry Teachers, to be held at Massachusetts State College, Amherst, on August 9 to 13, will be in the form of a symposium on chemical equilibrium.

A CONFERENCE on industrial ophthalmology, in cooperation with the National Society for the Prevention of Blindness, was held by the College of Physicians and Surgeons of Columbia University from May 7 to 11. Representatives of forty-seven four-year medical schools were represented at the conference, in addition to the representatives of various government agencies.

A CONFERENCE of a few research workers interested in the application of carbon isotopes to the study of biochemical problems is to be held on June 19 and 20 at the Lankenau Hospital Research Institute in Philadelphia. The meeting will be devoted to discussion of the present and future application of carbon isotopes in biochemical studies, as well as of their methods of concentration and measurement. Those interested are cordially invited to attend. Further details may be obtained by writing to Dr. Stanley P. Reimann, director, Lankenau Hospital Research Institute, Philadelphia 30.

ACCORDING to the will of the late Fred K. Hinchman, the Southwest Museum will receive a bequest, the income from which will provide, among other things, storage cabinets for the study collections of the museum. Mr. Hinchman, for many years supervisor of education extension, also left to the museum his extensive Indian collections and his anthropological library.

ACCORDING to *The Experiment Station Record,* a ten-year agreement signed on July 15, 1944, by the Governments of the United States and Guatemala provides for cooperation in establishing and operating an agricultural experiment station in Guatemala to promote the cultivation of cinchona in the Western Hemisphere. The general functions of this station include not only investigations necessary to establish and maintain a permanent cinchona industry in Guatemala, but, if found desirable, to carry on agronomic production investigations on other complementary crops. Cooperation is provided in the establishment of approved agricultural practices and the propagation of planting materials and in the promotion of tropical agriculture in cooperation with other agricultural institutions and official agencies in the Western Hemisphere. The Government of Guatemala will provide land, laboratory and office space, tools, office, field and laboratory assistants and unskilled labor, and at least one assistant to cooperate with each investigator detailed to the station by the United States. The United States agrees to provide a scientific staff to direct the station and conduct its investigations, publication facilities, scientific equipment and land motor vehicles if available. The scientific staff is empowered to assist in the work-training programs of the students approved by the Guatemalan School of Agriculture for studies on scientific problems. The agreement runs for ten years, unless one party fails to provide funds.

EQUIPMENT for a National Institute of Physiology in China, devoted entirely to the study of developmental physiology, is now being purchased in the United States by its future director, Dr. S. C. Shen,

who is working in the Highpolymer Research Bureau of the Polytechnic Institute of Brooklyn. He is in this country as a representative of the Ministry of Education of the Chinese Government. After the war the new institute will be in Shanghai, since it is considered advisable to have it near a seaport. Dr. Shen plans to take an ultracentrifuge back with him and is now purchasing basic equipment which is being shipped out as rapidly as possible. The first project will be an investigation of the nutritional status of Chinese children with a view to improving the content of foods with essential minerals and vitamins. Since going to the Polytechnic Institute this year, Dr. Shen has been collaborating with Dr. Kurt G. Stern, who is working with Dr. Herman F. Mark, director of the bureau, under a grant from the Carrie S. Scheuer Foundation of New York, on the application of the ultracentrifuge to highpolymer chemistry.

DISCUSSION

ANTHONY ASKHAM, THE AUTHOR OF THE VOYNICH MANUSCRIPT

IN 1912, in an Italian monastery, the late Wilfred M. Voynich found a manuscript which some of the world's best cryptographers have called undecipherable. Recently I have found the key and some of the details, including the name of the author and the language used, which are here presented for the first time.

The dating of the Voynich manuscript beyond 1493 by O'Neill,[1] restricts considerably the search for the key to the cipher. This determination of a date is based upon the inclusion in "the most mysterious manuscript in the world" (Manly[2]) of the common sunflower, *Helianthus annuus* L., and the pepper plant *Capsicum*, two plants, native to the Americas, which were unknown to Europeans before the return of Columbus from his second voyage. Recently, this key has been determined and some of the biological material contained in cipher has been decoded. Due, however, to present war conditions, it seems undesirable to publish, at this time, the details of the key.

The peculiar use of a double system of arithmetical progressions of a multiple alphabet indicates that the author of the Voynich manuscript was familiar with the ciphers discussed by Trithemius,[3] Porta[4] and Selenius.[5] It is not wise to date a manuscript based upon the dates of these published works, since the material is known to have been circulated in manuscript for many years. The format and use of certain peculiar symbols (mirror images of the Italian d or di and el, respectively) are evidences that the author was probably familiar with the manuscript of Leonardo da Vinci's "Anatomy"[6] (written about 1510). The symbols used in the Voynich indicate, however, origins from many and unknown sources. The text, so far decoded, is in Medieval English and deals with (1) the effects of plants on physiological processes in health and disease, especially, the diseases of women, and (2) a conception of pre-Harveian[7] generation and parturition. As an illustration, the following description of the birth of an infant was decoded from folio 78: "When skuge uf tun'c-bag rip, seo oogon kum sli of se mosure-issue ped-stans sku-bent, stokked kimbo-elbow crawknot." That is, put into modern English this passage becomes, "when the contents of the womb rip (or tear the membranes), the child comes slyly from the mother-issuing with the leg-stance scewed and bent while the arms, bent at the elbow, are knotted (above the head) like the legs of a crawfish." Among the many examples of the effects of plants on human beings, several references to the use of antibiotics have been determined from the decoded material. From folio 93, was decoded, as the author of the manuscript, the name of Dr. Askham. On several previous occasions the opinion has been expressed that the manuscript was written in Latin by Roger Bacon.

According to the "Dictionary of National Biography," Anthony Ascham (older spelling Askham), fl 1553, astrologer) studied at Cambridge, became M.B. in 1540, and in 1553 was presented by Edward VI to the vicarage of Burneston, Yorkshire. He is probably to be identified with Anthony, the brother of Roger Ascham.[8] Anthony Ascham wrote several almanacs, a "Treastise on Astronomy" and more especially "A Little Herbal, etc.," 1550. The author has been unable to study the herbal yet. Larkey and Pyles,[9] however, state that in comparison with other writers of herbals published about this time (Banckes, 1525, etc.), Ascham refers to a very large number of the diseases of women.

[1] Hugh O'Neill, *Speculum*, 19: 126, 1944.
[2] John Matthews Manly, *Speculum*, 6: 345, 1921.
[3] Johannes Trithemius, Steganographia, 1551 (?); Polygraphia, 1518.
[4] Joan Baptista Porta, De Furtivis notis vulgo. De Ziferus Libri IIII. 1563.
[5] Gustavi Seleni, Cryptomenytices et Cryptographiae Libri IX. 1624.
[6] T. Sebachnikoff, "I Manoscritti di Leonardo da Vinci della reale Biblioteca di Windsor"; "Dell' Anatomia." Parigi. Rouverge Fogli A. Torino. Viarengo. Fogli B. 1898 and 1901.
[7] Wm. Harvey, "Exercitationes de generatione animalium." London: W. Dugard. 1651.
[8] Grant, Vita Aschami in Ascham's works et Giles IV, 307.
[9] S. V. Larkey and T. Pyles, "An Herbal" [1525], 1941, footnote p. xix.