

for each substance the minimum daily ration which will protect the experimental animal. A committee on accessory food factors, with Professor Hopkins as chairman and Dr. H. Chick as secretary, has been sitting during the year, and has prepared a monograph to meet the needs of the general scientific and medical reader.

#### SCIENCE IN AUSTRALIA

THE newly founded Commonwealth Institute of Science and Industry, Melbourne, has begun the publication of a monthly journal entitled *Science and Industry*. The editorial foreword says:

No competent scientific investigator need fear the coming of the institute. It will not attempt to do work that others are doing already. There is more than sufficient work for all. No one needs to look round for a job. They are everywhere at hand. While there is still dust in Sydney's streets, or smoke issuing from the chimney stacks at the factories at Footscray, while there is waste timber being eternally burnt around the saw-mills of the west, while the molasses expressed from the sugar-cane of the north still finds its way down to the sea, who can deny the width of the field for scientific investigation? While the rich lands of Queensland are continually being given over to the prickly pear, and arable areas of Victoria to St. John's wort, while artesian water ceases to flow, or the bores to corrode, while stock die of strange diseases in the night, and their young perish before birth, while there are still mineral treasures that have not yet been exploited by the prospector, while air transport is still with us an undeveloped means of locomotion, while a thousand and one articles of daily use are still being imported from foreign lands that could easily be manufactured by our own people, who will say that there is no room for science?

Hitherto in Australia, and in most other English-speaking countries, the scientist is only now beginning to get back some of his own. In the past there has been observable a certain suspicion of science. The primary producer used to regard the man of science as a dreamer or at best a theorist. They talked of Collins-street farming. The scientific man, on his part, had little respect for those who allowed their actions to be hampered by the ideas of their grandparents. But gradually it was seen by producers that the man of science

had something to teach them if they were only prepared to listen, and if he was willing to express his thoughts in every-day language. The man on the land no longer despises science as he did a quarter of a century ago—at least, the more progressive do not. The manufacturers are not precisely in the same plight. With some few and notable exceptions, they have been inclined to ignore the lessons of science. The scientists themselves are somewhat to blame for this, or, at any rate, they have themselves to thank. Business men have one test of value, and that is cost. Scientists who love their science place it above money. Much of the most valuable scientific work done in the world has been done for a pittance. The reward of the investigator was not necessarily expressed in the augmentation of his banking account. Business men could not understand this. Services that could be had cheaply were nasty. If they were valuable, they would be much sought after in the market. So argued these men of affairs, and this was the basis of those advertisements asking for the services of fully-qualified chemists at £200 a year or less. These bad old days must end if science is to come into her own. In the field of science the laborer is worthy of his hire.

The institute is the youngest department of the commonwealth government. It is not yet old and effete, with a large number of its officers eagerly looking for the retiring age. It represents the young commonwealth, youthful and virile, and realizes, as it has been expressed, that "the frontier of knowledge is the starting point of research."

#### SIGMA XI AT SYRACUSE UNIVERSITY

THE Society of Sigma Xi at Syracuse University has elected as officers for the ensuing year the following: *President*, Edward D. Roe, Jr.; *Vice-president*, C. C. Adams; *Secretary*, Geo. T. Hargitt; *Treasurer*, Henry F. A. Meler. During the past year the following scientific program has been presented by members of the society:

November 18. Edwin F. McCarthy. Occurrence of knots and spiral in Adirondack red spruce.

Carl J. Drake. Notes on *Nezara viridula*, a serious plant pest in the south.

December 13. R. S. Boehner. Gas warfare.

E. N. Pattee. The outlook for chemical industries in the United States.

January 10. T. C. Hopkins. Exploring and

prospecting for oil in Wyoming and Kentucky.

Chas. H. Richardson. Some results of recent geological research in Vermont.

February 6. H. S. Steensland. The action of benzol on animals.

Frank P. Knowlton. The electrocardiogram, with demonstration.

March 14. E. D. Roe, Jr. The irreducible factors of  $1 + x + x^2 + \dots + x^{(n-1)}$ .

R. R. Tatnall. The production and measurement of low pressures.

April 11. L. M. Hickernell. The habits and structure of the 17-year cicada.

H. F. A. Meier. The fixation of atmospheric nitrogen by plants.

May 9. Louis Mitchell. The use of diagrams in the solution of hydraulic problems.

Rich D. Whitney. The destruction of underground structures by electrolysis.

#### THE TROPICAL RESEARCH STATION OF THE NEW YORK ZOOLOGICAL SOCIETY IN BRITISH GUIANA

AFTER two years of temporary suspension on account of the war, the Tropical Zoological Station of the New York Zoological Society, in British Guiana, is again proceeding with its various activities. Director William Beebe now has with him Inness Hartley, research associate, Alfred Emerson, research assistant, and John T. Van, artist. In a short time two visiting zoologists will arrive at the station for the pursuit of special studies.

In order to live and work in close proximity to the jungle and the river life of British Guiana, the old station at Kalacoon was vacated, and the new one was planted in the government Penal Settlement, at Katabo. There, in an ideal spot, a commodious laboratory and dormitory have been developed, and an extensive program of investigation has been laid out. Three tropical rivers of considerable importance, the Essequibo, Cuyuni and Mazaruni, render the whole western half of British Guiana available to the station near the meeting-place of their waters. The Mazaruni Rapids are eight miles above the station.

A garden has been planted, and Indian hunters bring to the table of the station varied supplies of tapir, deer and agouti meat and fish. Animal life in close proximity to the

station is abundant, and the choice of subjects for investigation is fairly bewildering.

Again has the government of British Guiana been most liberal in promoting the objects of the station, and the Zoological Society looks forward with lively interest to the year's record of results.

#### SCIENTIFIC NOTES AND NEWS

THE RT. HON. JOHN WILLIAM STRUTT, LORD RAYLEIGH, the great English physicist, died on July 1, at the age of seventy-six years. His eldest son is the Hon. Robert John Strutt, professor of physics in the Imperial College of Science, London.

WESLEYAN UNIVERSITY, at its recent commencement, conferred the degree of doctor of science on Edward Lee Thorndike, '96, professor of psychology at Teachers' College, Columbia University; Frank Bowers Littell, '91, astronomer, Naval Observatory, Washington, D. C., and George Arthur Burrell, recently in command of United States Army Chemical Service.

At the commencement of the University of Vermont the degree of doctor of letters was conferred on Dr. Liberty Hyde Bailey, formerly director of the college of agriculture of Cornell University, and the honorary degree of doctor of science on Dr. Marshall Avery Howe, curator of the museums of the New York Botanical Garden. Dr. Bailey delivered the commencement address, taking for his subject, "The aspiration to democracy."

THE honorary professional degree of master of horticulture has been conferred upon Edmund H. Gibson, of the U. S. Bureau of Entomology, by the Michigan Agricultural College.

THE agricultural building at the Kansas State Agricultural College has been named Waters Hall in honor of Dr. Henry Jackson Waters, former president of the college, now managing editor of the *Kansas City Weekly Star*.

DR. D. T. MACDOUGAL, director of the department of botanical research, Carnegie Institution of Washington, was elected a corresponding member of the Société Nationale