

shown that it is at least a thousand times larger than it was thought to be before the distances to the clusters were measured. Dr. Shapley has discovered, furthermore, that the sun is not at the center of the sidereal universe, as was formerly supposed, but several hundred quadrillion miles away from it.

Dr. Shapley's studies of the famous star-cluster in Hercules known as "Messier 13" have proved that this cluster has a diameter of more than two and a half quadrillion miles, and contains probably more than 50,000 stars, each of them intrinsically brighter than the sun. His researches have also played a large part in establishing the fact that the great star-clusters are found only at immense distances from the plane of the galaxy, or Milky Way, but appear to be falling into it. Dr. Shapley's hypothesis is that the Milky Way itself may be composed of former star-clusters which have dissolved.

Dr. Shapley is also known as an entomologist, and has done interesting work in investigating the ants of the California mountains. He discovered that the speed at which these creatures move depends on the temperature, and that for some species the time of running through a "speed-trap," as shown by the stop-watch, gives the temperature of the surrounding air within one degree. He found that the ants went twelve times as fast at 100 degrees as at 50 degrees.

Professor Solon I. Bailey, who has been associated with the Harvard Observatory for more than thirty years and has been Acting Director since the death of Professor Pickering, expects to leave Cambridge within a few months for Arequipa, Peru, to take charge of Harvard's South American astronomical station there and place it again on a productive basis after a period of dormancy due to war conditions. He will resume his observations on the variable stars in southern clusters.

#### A SOUTHERN FOREST EXPERIMENT STATION

DURING July a new forest experiment station was established by the Forest Service of the U. S. Department of Agriculture, with

headquarters, for the present, at New Orleans, La. Experiments will be conducted in the large and important timber region extending from eastern Texas, through Louisiana, Arkansas, Mississippi, Alabama, Georgia, Florida, to the Carolinas. Mr. R. D. Forbes, until recently superintendent of forestry for the Conservation Commission of Louisiana, has accepted the directorship of the station. Mr. Lenthall Wyman, formerly a member of the Forest Service in Arizona and Montana, and more recently in the State Forester's office in Texas, will be one member of the staff. Mr. W. R. B. Hine, a recent graduate of the Cornell School of Forestry, is the second member. One vacancy in the technical staff remains to be filled.

The importance of this region, in which large areas of land are suitable only for growing timber, makes the establishment of this station, to work out the best methods of producing, growing, and protecting the forests, particularly opportune. Such important and valuable species as longleaf, shortleaf and loblolly pines, and cypress amply justify a considerable outlay to insure their perpetuation and increase their production.

The establishment of the Southern Forest Experiment Station was made possible by a small increase in the appropriation for the investigative work of the Forest Service for the present year. It is not sufficient to permit the construction of buildings and laboratory facilities, and it is planned for the first year to concentrate on field work in the most urgent problems.

#### ORGANIZATION FOR RESEARCH AT THE PENNSYLVANIA STATE COLLEGE

THE members of the American Association for the Advancement of Science at the Pennsylvania State College, State College, Pa., held a meeting on November 2. Dinner was served at the University Club to about thirty members. The speaker was Dr. L. R. Jones, professor of plant pathology of the University of Wisconsin and chairman of the Division of Biology and Agriculture of the National Research Council. His theme at this

meeting was "Organization for Research," in which he developed the idea of scientific research as a public service, not only in time of war but in time of peace as well, using the University of Wisconsin as an example of a state university functioning as a great public service institution through research work for the public good. He further showed how the modern state university is distinguished from the academy, the earlier type of educational institution, from the college, the modern institution which has replaced the academy in the matter of instruction, and from the modern endowed university, by the enlarged program of research for the public good which distinguishes the state university. Dr. Jones suggested as a means of fulfilling this public trust at state institutions the organization of "research committees" and "faculty subject groups" which are formed without regard to collegiate divisions. These are definite means of promulgating throughout the institution the relative importance of research as compared with other lines of activity and of emphasizing research as a much needed form of public service.

At the meeting it was voted by the members to petition the national council for a charter to form a local branch to be known as the Pennsylvania State College Branch of the American Association for the Advancement of Science. The purpose of the organization is to promote and stimulate research in the institution.

#### SIGMA XI LECTURES AT YALE UNIVERSITY

At a meeting on November 8 of the Yale Chapter of the Society of Sigma Xi, which was addressed by President James R. Angell of the University, announcement was made of a series of lectures to be given under the auspices of the Yale Chapter on the general topic of "The evolution of man." The lecturers and their subjects are considered of such general interest that it has been decided to hold the series this year in Lampson Lyceum, and to invite the public to attend the lectures without charge.

The first lecture of the series will be given on the evening of December 2, on "The antiquity of man," by Professor Richard S. Lull of the university faculty. The following are the subjects of the succeeding four lectures, which will continue through the month of March:

The natural history of man—Professor H. B. Ferris.

The evolution of the nervous system of man—Professor G. H. Parker.

Societal evolution—Professor A. G. Keller.

The direction of evolution—Professor Edwin G. Conklin.

It is expected that the 1921-22 lectures under the auspices of the Society of Sigma Xi will, as in the past, be published by the Yale University Press.

#### SCIENTIFIC NOTES AND NEWS

As a memorial to the late Edward C. Pickering, for forty-two years director of the Harvard College Observatory, it is proposed to erect near Cambridge an astronomical observatory, whose work will be largely concerned with the study of variable stars.

DR. HARVEY CUSHING, of Harvard University and the Peter Bent Brigham Hospital, was elected president of the American College of Surgeons at its recent meeting in Philadelphia.

THE Franklin Institute of Pennsylvania has awarded its Howard N. Potts gold medal to Dr. E. V. McCollum, professor of chemical hygiene in the School of Hygiene and Public Health of the Johns Hopkins University. The medal is awarded "for distinguished work in science or the mechanic arts," and was presented by the institute in recognition of a lecture on "Nutrition and physical efficiency," delivered before its members in 1920.

SIR J. J. THOMSON succeeds Sir Richard Glazebrook as president of the Institute of Physics, London.

THE Royal Society of Edinburgh has elected as president Professor F. O. Bower. The vice-presidents are Sir G. A. Berry, Professor W. Peddie, Sir J. A. Ewing, Professor J. W.