cipal rivers, capitals and the largest cities in the different states are also embodied.

The map is of special interest from the fact that it is based on the same system of projection as that employed by the armies of the allied forces in the military operations in France. To meet those requirements and at the request of the army, special publications were prepared by the Coast and Geodetic Survey.

Many methods of projection have been designed to solve the difficult problem of representing a spherical surface on a plane. As different projections have unquestionable merits as well as equally serious defects, the announcement states, any region to be mapped should be made the subject of special study and that system of projection adopted which will give the best results for the area under consideration.

The Mercator projection, almost universally used for nautical charts, is responsible for many false impressions of the relative size of the countries differing in latitude, according to the survey statement. The polyconic projection, widely used and well adapted for both topographic and hydrographic surveys, when used for the whole of the United States in one map has the serious defect of unduly exaggerating the areas on its eastern and western limits. Along the Pacific coast and in Maine the error in scale is as much as 6½ per cent., while at New York it reaches 4¼ per cent.

The value of the new outline map on the Lambert projection can best be realized when it is stated that it shows that throughout the largest and most important part of the United States, that is, between latitude 30½ degrees and 49 degrees, the maximum scale error is only one half of 1 per cent. This amount of scale error of one half of 1 per cent. is frequently less than the distortion due to the method of printing and to changes from the humidity of the air. Only in southernmost Florida and Texas does this projection attain its maximum error of 2 1-3 per cent.

The Lambert projection is well adapted to large areas of predominating east and west dimensions in the United States where the distance across from east to west is 14.5 times that of the distance north and south.

The strength of the Polyconic projection, on the other hand, is along its central meridian. The merits and defects of the two systems of projection may be stated in a general way as being at right angles to each other.

Special features of the Lambert projection that are not found in the Polyconic may be stated briefly as follows:

1. The Lambert projection is conformal—that is, all angles between intersecting lines or curves are preserved, and for any given point (or restricted locality) the ratio of the length of a linear element on the earth's surface to the length of the corresponding map element is constant for all azimuths or directions in which the element may be taken.

2. The meridians are straight lines, and the parallels are concentric circles.

3. It has two axes of strength instead of one, the standard parallels of the map of the United States being latitudes 33 degrees and 45 degrees, and upon these parallels the scale is absolutely true. The scale for any other part of the map, or for any parallel, can be obtained from special publication number 52, page 36, U. S. Coast and Geodetic Survey. By means of these tables the very small scale errors which exist in this projection can be entirely eliminated.

The map measures 25 inches by 39 inches and will be sold by the government at 25 cents.

THE LECONTE MEMORIAL LECTURE IN THE YOSEMITE, 1919

THE University of California through its university extension division will offer free to the public a course of scientific lectures in the Yosemite Valley during June and July, 1919. These are to be known as the LeConte Memorial Lectures in the Yosemite in honor of the name of Joseph LeConte, the famous naturalist and geologist who was for many years a member of the faculty of the University of California. The lecturers and topics for 1919 and the tentative dates are as follows:

I. Professor W. L. Jepson, department of botany, University of California.

1. The Origin and Distribution of But-

tercups in Yosemite, Tuesday, June 24.
2. The Biology of the Chaparral, Thursday, June 26.
3. The Ancestry of the Yosemite Pines and Sequoias, Friday, June 27.

II. Professor Frederick William Bade, lecturer, literary executor of John Muir.
1. John Muir, Nature and Yosemite, Tuesday, July 1.
2. Muir's View of the Valley's Origin Thursday, July 3.
3. Muir's Services to the Nation, Friday, July 4.

III. Dr. F. Emile Matthes, geologist, U. S. Geological Survey, Washington, D. C.
1. Origin of Yosemite Valley, as Indicated in the History of its Waterfalls, Tuesday, July 8.
2. The Highest Ice Flood in the Yosemite Valley (to be delivered at Glacier Point) Wednesday, July 9.
3. The Origin of the Granite Domes of Yosemite, Saturday, July 12.

IV. Professor A. L. Kroeber, department of anthropology, University of California.
1. Tribes of the Sierra, Friday, July 11.
2. Indians of Yosemite, Saturday, July 12.
3. Folk-lore of Yosemite, Sunday, July 13.

It is planned to give most of the lectures at the Village of Yosemite, probably in the pavilion or the open air. Certain of the lectures, especially those by Professor Jepson and Dr. Matthes, will be delivered at places in Yosemite which give concrete illustration of the scientific subjects under discussion.

SCIENTIFIC NOTES AND NEWS

Dr. Vito Volterra, professor of mathematical physics in the University of Rome, will deliver a series of six lectures on the Hitchcock Foundation at the University of California in August or September.

Dr. W. W. Campbell, director of Lick Observatory of the University of California, has been named head of an American delegation of astronomers that will attend the international meeting in Brussels in July.

Lieutenant Colonel John R. Murlin, Sanitary Corps, U. S. Army, who has been in charge of the Section of Food and Nutrition of the Surgeon-General's Office since September, 1917, has been discharged from the service to take up his work as the head of the department of vital economics at the University of Rochester. The work of the Section of Food and Nutrition is now under the charge of Major R. G. Hoskins, Sanitary Corps, U. S. Army.

Professor Anton Julius Carlson, chairman of the department of physiology at the University of Chicago, who as a major in the Sanitary Corps of the United States Army inspected American camps in England and is now a member of the American Relief Administration in France, will take the field again for the American Relief Administration, probably going up to Finland, and returning by Esthonia, Lettonia, Lithuania, Poland, Roumania and Vienna.

Dr. W. A. Cannon, of the department of botanical research of the Carnegie Institution of Washington, has just returned to this country from an absence of a year in central Australia. While abroad he studied the plants and plant conditions of the more arid portions of southern Australia, including the Lake Eyre Basin, a portion of the Flinders Ranges, and southwestern South Australia contiguous to the Nullarbor Plains.

Dr. C. H. T. Townsend sailed, early in April, for Brazil, where he has accepted a position as entomologist for the Brazilian government. Dr. Townsend has been with the Bureau of Entomology and has spent most of his time studying the Muscoid Diptera.

Mr. Frank C. Baker, curator of the museum of natural history of the University of Illinois, will spend a portion of the summer at Winnebago Lake, Wisconsin, conducting