

mining engineers, the college men, the wheelmen, the chambers of commerce and the principal newspapers all co-operated in securing the gratifying result already mentioned.

Ohio offers many interesting problems in topographic history, reaching as it does from the deeply-trenched, unglaciated southeastern portion, with its great systems of reversed drainage, to the flat lake plain of the north, with its beaches, moraines and buried channels. In due time this area will be added to that of the States to the eastward, where similar systems of co-operative survey are giving, or have already given, their topographic structure to the world in accurate and worthy maps.

ALBERT A. WRIGHT.

#### THE ARCHÆOLOGICAL REPORT OF ONTARIO.

THE usual Ontario Archæological Report by David Boyle has appeared for 1899. It is printed by Warwick Bros. and Rutter, Toronto, 1900, as part of the appendix to the report of the Minister of Education. Upwards of two thousand specimens have been added to the museum of the Education Department, Toronto. A number of pipes and other specimens are figured. Of special interest are a description and figures of two perforated skulls found in Simcoe County, Ontario. The perforations are considered to be post-mortem, or at least to have been made immediately before the individual's death. The skulls are considered to be of Huron Indians, and remind one of the similarly perforated skulls described by Dr. Henry Gillman. Mr. E. H. Crane, of Niles, Michigan, has a skull from the Saginaw Valley which is also perforated in this manner.

An 'Iroquois Medicine Man's' mask is figured and described, and a brief report is given of the exploration of mounds examined by Mr. Boyle on Pelee Island in Lake Erie. Mr. G. E. Laidlaw contributes a paper on new sites in Victoria County; Mr. Andrew F. Hunter, on sites of Huron villages in the township of Tay, Simcoe County, with some bibliographic references; Mr. W. J. Winternberg, on Indian village sites in the counties of Oxford and Waterloo. 'The Wyandots,' by William E. Connelly; 'The War of the Iroquois,' by M. B. Sulte; 'Notes on Some Mexican Relics,'

by Mrs. Wm. Stewart; 'Music of the Pagan Iroquois,' with music by Mr. A. T. Cringan; and 'A Study of the Word Toronto,' by General John S. Clark—are also included in the report.

Mr. Boyle has patiently worked for years to create interest in the archæology of his province. These labors are at last being supplemented by assistance from other students in the same region. Until the subject is more studied, it is well that his efforts to preserve the records and specimens be encouraged.

HARLAN I. SMITH.

#### EXPERIMENT STATION EXHIBIT AT THE PARIS EXPOSITION.

At the meeting of the Association of American Agricultural Colleges and Experiment Stations, held at Minneapolis in 1897, a resolution was adopted in favor of a co-operative experiment station exhibit at the Paris Exposition. A committee, consisting of H. P. Armsby, chairman; W. H. Jordan, A. W. Harris, M. A. Scovell, and A. C. True, was appointed to take charge of the matter. The stations were invited to contribute materials and charts illustrating special features of their work and results, original pieces of apparatus, models, designs, etc. The material as it was prepared was shipped to Washington. Dr. True, Director of the Office of Experiment Stations, undertook to make a collection of photographs and publications of the stations, to prepare a monograph on the experiment station enterprise of this country, and to look after the temporary installation of the exhibit in Washington and its final shipment.

The photographic exhibit includes about 750 selected pictures of station buildings, grounds, laboratories, apparatus, experimental plants, herds and other features, in addition to a collection of photographs of the station directors and staff members. The pictures are mounted in groups on sheets of heavy cardboard, 22 by 28 inches, and will be displayed in portfolios of twenty-four each.

A series of root cages, furnished by the North Dakota Station, shows the formation of the roots of maize, wheat, flax and brome grass; models of sweet potatoes, peppers, apples and

plums exhibited by the Iowa and Minnesota stations illustrate varietal differences; and an exhibit of saltbush from the California Station shows species of *Atriplex*, which have proved of value on strongly alkaline soils. Electrical devices for determining the salt content, temperature and moisture content, and a series of samples illustrating the typical agricultural soils of the United States, represent the soil work of the Division of Soils of the U. S. Department of Agriculture. The California Station sent six typical soils of that State, and specimens showing the results of mechanical analyses of each type of soil, and Hilgard's soil elutriator for mechanical analysis.

The California Station furnished an olive exhibit, consisting of fifty samples of olive oils and more than two hundred samples of olive pits used in the classification of varieties of olives; and the Alabama Station, a collection of mounted specimens of cotton, showing seventy-two selected and crossbred varieties.

Several pieces of original apparatus for investigations in vegetable physiology are shown, including an auxanometer for experimental work on the rate of plant growth; an apparatus for determining the rate of transportation of plants, from the West Virginia Station; and a centrifuge, used to study the effect of gravity and centrifugal force upon germinating seeds, from the Indiana Station.

Samples of animal and vegetable fats, a collection of chemically pure proteids separated from the seeds of various plants, a collection of one hundred weed seeds, an insect cabinet, a gas desiccator for drying hydrogen gas used in moisture determination, models of round and stave silos, an apparatus for the rapid cooling of wines, a pressure apparatus for experiments with solution under very high pressure, a model of the Atwater-Rosa respiration calorimeter and a full-sized bomb calorimeter are included in the exhibit.

The dairy exhibit is larger than that in any other line. It includes a series of cheese models from the New York State Station, showing the effect of the fat content of the milk on the size of cheese produced; a collection of forty-eight cultures of dairy bacteria, from the Connecticut Storrs Station; the original Bab-

cock milk tester, two more modern forms of the apparatus for hand and power operation, together with a complete collection of the various forms of apparatus used in the Babcock test. The Scovell milk-sampling tube, Wisconsin curd test, Marshall rennet test, acid bottles and other minor apparatus are also included.

The irrigation exhibit of apparatus and models contains a hydrophore to determine the amount of silt carried by water; a nilometer used to measure the amount of water passing through streams, flumes and ditches; a current meter, water register, etc.

A small exhibit from the Hawaiian Experiment Station consists of samples of rocks, lavas, lava products, soils, varieties of sugar cane and samples of agricultural products, such as coffee, rice and sugar.

There is a large number of charts and enlarged pictures showing the results of experiment station work on a wide range of subjects, a complete set of bound bulletins and reports numbering several hundred volumes, and many miscellaneous publications of the stations, together with over one hundred books on agricultural subjects written by station officers.

The arrangement and shipment of the exhibit was in charge of Dr. W. H. Evans, of the Office of Experiment Stations, who also supervised the preparation of the charts and photographs exhibit.

Especial interest attaches to this exhibit from the fact that it shows the great progress made by our stations since the Paris Exposition of 1889, when the stations made only a small showing, as they were just beginning active operations under the Hatch Act.

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#### SCIENTIFIC NOTES AND NEWS.

DR. A. A. MICHELSON, professor of physics at the University of Chicago, has been elected a corresponding member of the Paris Academy of Sciences.

DR. C. HART MERRIAM has been elected a foreign member and Mr. Samuel Scudder a corresponding member of the Zoological Society of London.

THE philosophical faculty of the University