

1867, and sixth edition in 1890; the treatment of the Compositæ, Filices and Equisetacæ to Dr. Sereno Watson's 'Botany of King's Expedition' in 1871 and of the Ferns and Higher Cryptogams to the same author's 'Botany of California' in 1880. He was early associated with Dr. W. G. Farlow and Dr. C. L. Anderson in the preparation and distribution of 'Algæ Boreali-Americanae,' the first consecutively numbered sets of North American algæ of any considerable extent that has been issued. Recently his attention has been specifically given to the Sphagna, and in conjunction with Mr. C. E. Faxon he was preparing sets of these plants for distribution, a most important work, which, it is sincerely hoped, will not be suspended on account of his untimely death.

Personally Professor Eaton was generous to a fault, always most willing to aid his students and correspondents in any way in his power, and beloved by all who were favored by his acquaintance.

N. L. BRITTON.

#### THE UNITED STATES GEOLOGICAL SURVEY.

IN his monthly report for May, 1895, the manuscript of which has been recently submitted to the Secretary of the Interior, Director Walcott, of the United States Geological Survey, remarks on the early commencement of field work this season as compared with former years, with the prospect of a longer season and more abundant results. The topographic parties nearly all took the field during May, as did also a number of geologic parties. Such topographers and geologists as were detained in Washington beyond the close of the month have since taken the field from time to time, as the exigencies of the work already in hand permitted. This early commencement of the field work of the Survey is attributable in the main to the action of Con-

gress in providing in the last Sundry Civil bill that the appropriations for the Survey for the fiscal year 1895-1896 should become available before the first of July.

In view of the importance of the Geological Survey as an instrument for the advancement of science and the development of the resources of the country, and the fact that the present report shows to a large extent the work planned for the current year, we give in some detail the different directions in which operations are in progress.

Of the geologists working in New England, Prof. N. S. Shaler was engaged principally in the preparation of his report on the Narragansett Basin, and in investigating, through the aid of Assistant Woodworth, certain morainal belts in Rhode Island. Prof. B. K. Emerson, working also in a New England area, gave two days of each week to field work for the Survey, mapping the geology of the Barre and Marlboro' sheets, of Massachusetts. In his study he was doing microscopic work and making drawings for his report. Prof. T. Nelson Dale reports that such part of the month as he was actually in the employ of the Survey was given to work on the Cambridge, N. Y., sheet.

In the State of New Jersey, Professor J. E. Wolff continued, with the assistance of Mr. Brooks, the survey of the areal geology of the Lake Hopatcong sheet. Dr. W. B. Clark, the other geologist who is working in New Jersey geology, continued the survey of the Bordentown sheet and the contiguous region. This area was taken up late in April. While in Baltimore, Dr. Clark continued his office work upon the Eocene fauna of Maryland and Virginia.

Mr N. H. Darton spent the greater part of the month in the continued preparation of the report on artesian well prospects of the Atlantic Coastal Plain. Ten days were spent on Long Island, N. Y., for the purpose of obtaining data regarding wells

and to study the geologic conditions affecting underground waters on the Island, and several trips were made to Baltimore with a similar object in view.

In southwestern West Virginia field work was prosecuted nearly all the month by Mr. Mendenhall, Mr. M. R. Campbell's assistant. Mr. Mendenhall was revising the Tazewell sheet. Having completed his office work, Mr. Campbell himself took the field about the 10th, at Alderson, in the same State. From Alderson he and his party worked down New River, studying the conglomerate series as far as Kanawha Falls. From that point they moved to the eastern edge of the Kanawha sheet. Mr. David White was of the Campbell party. He was rendering assistance in the correlation of the different horizons, mainly by the testimony of the plant remains.

Mr. Arthur Keith confined himself to office work, making a preliminary draft of the boundaries of the coal formations on the Briceville and Wartburg sheets of Tennessee, and preparing for field work, which he has since taken up. Mr. C. Willard Hayes took the field the latter part of the month in Alabama and Georgia. Mr. R. T. Hill is engaged in the completion of the Austin sheet of Texas.

Mr. G. K. Gilbert, geologist, spent the first half of the month in the continued prosecution of his work at Niagara Falls, mentioned in the last report. The object of this work was to obtain further knowledge of the details of the history of the Niagara River and the data for the illustration of a report thereon. Completing his task on the 15th, he returned to Washington and was subsequently engaged in the study of the literature of the geology of Niagara Falls and that relating to the associated problems of ice-dammed lakes.

Prof. T. C. Chamberlin, geologist, reports from the University of Chicago that Mr. Leverett continued the preparation of a re-

port upon the glacial geology of the Illinois lobe, making short excursions into the field in connection with that work. Prof. R. D. Salisbury did some work in Pennsylvania and New York, in continuation of surveys made in past years in New Jersey.

The work in the Lake Superior region, under Prof. C. R. Van Hise, was in all respects a continuation of that of the previous month, Dr. Bayley continuing the preparation of the Marquette monograph; Mr. Clements the preparation of the Michigamme monograph, and Mr. Morrow the cartographic work. The head of the party gave his time exclusively to the preparation of the paper for the Sixteenth Annual Report of the Survey.

Office work relating to the geology of the mining districts of Colorado was continued by Mr. Whitman Cross and Mr. G. H. Eldridge, and also, during the last ten days of the month, by Mr. S. F. Emmons. Mr. Emmons and Mr. Spurr were occupied in revising the manuscript of a report on the Murcur mining district.

Mr. Cross was engaged in preparing the report on the geology of the Cripple Creek district, a task which he has, since the close of the month, brought to completion. This paper will appear in the Sixteenth Annual Report. Mr. Eldridge continued the final revision of the Denver report. Messrs. Cross and Eldridge are about to take the field.

During May the maps and descriptive text constituting the Yellowstone Park folio were brought to completion, a number of additions having first been made to the sheets which, Mr. Hague thinks, will greatly enhance their value and interest. The folio is now ready for publication. Mr. Hague is now at work on the monograph on the geology of the Yellowstone Park. Mr. W. H. Weed, geologist, continued office work on the preparation for publication of the Little Belt sheet. On the 25th, un-

der the Director's orders, he made a trip to Boston, to consult with Dr. J. E. Wolff concerning official work. He returned on the 29th and resumed the work above mentioned.

The report on the gold resources of the Southern Appalachians, upon which Dr. G. F. Becker had been engaged all winter and spring, was completed about the 10th of May and placed in the Director's hands for publication. By the 14th Dr. Becker had received and corrected the printed proof of this work, and on the 16th he started, in company with Dr. W. H. Dall and Mr. Purington, for Alaska, to make the investigation touching gold and coal resources, which Congress specially authorized and provided for at its last session. As contemplated in the plans for this work, Dr. Becker will himself make the gold investigations and Dr. Dall those relating to coal. Advices from Dr. Becker, dated June 1st, show that the party had reached Sitka and had actually begun work.

As regards the office work relating to the mining districts of California, it may be stated that Mr. W. Lindgren was occupied with the microscopic study of the specimens collected at Nevada City and Grass Valley, as well as with the preparation of the descriptive text to accompany the sheets representing those districts.

Mr. H. W. Turner left Washington in May. His first work of the season will be the completion of the Bidwell Bar sheet surveyed in part last season in central California. Mr. J. S. Diller spent the last half of the month in the study of geologic material in preparation for his field work this season in Oregon, and in attending to matters connected with the Educational Series of rocks. Under his direction 285 thin or microscopic sections of rocks were made, about 300 specimens were either cut or polished, or both, and 2,150 specimens of the Educational Series were labeled. The work of Mr. T.

W. Stanton consisted principally in the revision of a paper on the fauna of the Knoxville beds. This paper was submitted for publication as a bulletin on May 30th, on which date Mr. Stanton left Washington, under orders, for field work in Texas, in accordance with the plans for the ensuing fiscal year. As stated on a previous page, Dr. W. H. Dall was assigned to special work in Alaska.

Prof. L. F. Ward was preparing his paper on some analogies in the Lower Cretaceous of Europe and America, and upon this he was engaged nearly the entire month. He stated under date of June 6 that the task was nearing completion. He gave much attention during the month to work relating to cycadean remains, visiting Baltimore and making photographs of some important specimens for illustrative purposes. Dr. F. H. Knowlton reports that with the exception of three days, which he gave to the study of a small collection of fossil wood from the Isle of Wight and the Island of Portland, England, in connection with Prof. Ward's investigations, his whole time in May was given to the study of the fossil plants of the Yellowstone Park as reported in previous months.

Prof. O. C. Marsh and his assistants continued the work on North American Dinosaurs, attention being directed during the month especially to the illustrations and text for the paper on the subject, designed for the Sixteenth Annual Report.

The field work of the *Division of Hydrography*, under Mr. F. H. Newell, was advanced in a fairly satisfactory manner. The field of operation of this Division is so vast, and the work that is being done in the different sections of the country and on the different streams is so varied in character and affected so much by local conditions, that it is quite difficult to state in general terms and few words the condition of that work at any given date.

Mr. A. P. Davis traveled during the month about three thousand miles. He established river stations at several points in Kansas and New Mexico and, later, went to Colorado, where he made measurements and rated meters. From California, Montana, Idaho, Nevada, Nebraska and other States and Territories come favorable reports of the progress of the work in its several branches. Reports from Washington and Wyoming are not so favorable.

In the east Mr. C. C. Babb spent nearly the whole month on the Potomac, making measurements by which the discharge of the stream can be computed for various heights of water at the different gauging stations.

In the office, the preparation of a bulletin, to be numbered 131, giving the reports of field for the years 1893-'94, was completed. In this bulletin are inserted all the available data concerning the various river stations of the country and miscellaneous information bearing upon the hydrographic work.

In the *Division of Chemistry*, under Professor F. W. Clarke, the number of routine analyses completed and reported during the month of May is 20, Dr. Hildebrand making 6, Dr. Stokes making 5, and Mr. Steiger making 10. In addition to this, some special investigations were under way, and these were well advanced. By Dr. Hildebrand two papers were prepared for journal publication, one on chlorite, from Cripple Creek, Colo., and the other on the estimation of titanium.

The work of the *Division of Mining Statistics*, under Dr. D. T. Day, consisted in preparations for the publication of the report on mineral resources of the United States for 1894. During the month the statistics of production of coal, lead and building stones, were given to the public, through the press, and those on iron ores, tin and the gold resources of the South were in the printer's hands.

In the *Division of Topography* nearly all the parties have been placed in the field and are at work in sections, as follows: Atlantic section, Central section, Pacific section, Indian Territory section. The Indian Territory work is a combined topographic and land subdivisional survey, and was specially authorized by Congress at its last session. Work is in progress in 23 States and Territories.

In the *General Editorial Division*, the following manuscripts were read:—Reconnaissance of Gold Fields of Southern Appalachians: G. F. Becker; for Part II., 16th Ann. Rpt. Production of Iron-ores: J. Birkinbine, Bull. 131. Water Supply Data: F. H. Newell. Text, Knoxville folio: Text, Stevenson folio. Proofs were received from the Public Printer of parts of the 15th and 16th Annual Reports and several Bulletins.

In the *Editorial Division of Geologic Maps* Mr. Willis edited the map of New York State and worked on the Marysville and Smartsville, Cal., and Stevenson, Ala., sheets. Text for the Knoxville, Tenn., Fredericksburg, Va.-Md., and Lassen Peak, Cal., sheets was read in original, and after reference to the authors sent to the press. In the *Editorial Division of Topographic Maps*, under Mr. Marcus Baker, attention was directed largely to the revision and correction of engraved atlas sheets which are about to be printed as the bases for geologic folios.

In the *Engraving Division* the 31 topographic atlas sheets were in course of engraving. Of geologic folios in course of engraving there were 10, and besides, work was continued on the 6-sheet map of New York.

In the printing department 5 geologic folios were in press, viz.: Lassen Peak and Marysville, Cal.; Staunton, Va.; Stevenson, Ala., and Knoxville, Tenn. The Staunton folio was completed. Editions of 11 topographic sheets were delivered from the press.

In the *Division of Illustrations*, under Mr. DeL. W. Gill, 105 original drawings were made during the month, comprising geologic landscapes, maps and sections and miscellaneous subjects. Engraved proofs to the number of 117 were received and examined. In the photograph laboratory 203 negatives and 1165 prints were made.

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THE BIOLOGICAL EXPERIMENT STATION OF  
THE UNIVERSITY OF ILLINOIS.

THE State Legislature of Illinois has made a sufficient appropriation to the Biological Experiment Station of the University of that State to provide for it an independent equipment and a separate working force.

This Station was established April 7, 1894, in leased quarters on the Illinois River, at the town of Havana, one hundred miles west of the University. It is devoted to a continuous study of the plant and animal life of the Illinois River and adjacent waters, with principal reference to ecological problems. Its main object is scientific, and the principal business of its staff is original research. Economic ends will be kept in view, and educational applications of the results of its work will be carefully regarded in the preparation of its reports.

The Station is jointly maintained by the University of Illinois and the Illinois State Laboratory of Natural History, each contributing equally to its support. It is under the general management of Professor S. A. Forbes, director of the State Laboratory and professor of zoölogy in the University. Its newly appointed superintendent is Dr. Charles A. Kofoid, its zoölogical assistant is Mr. Adolph Hempel, and its botanical assistant is Mr. B. M. Duggar.

It will be provided with a floating laboratory, 48 x 15 feet, furnished with tables, microscopes and aquatic and other apparatus of observation and experiment sufficient for twenty workman; with rooms on shore for

microscope technology and similar work; and with a naphtha launch and several skiffs as means of transportation. Its quarters will be occupied continuously throughout the year by its resident force, and will be open to advanced students of aquatic biology during the vacation season of 1896, on terms to be hereafter stated.

Papers are now finished or far advanced setting forth the results of last year's work on rotifers and Protozoa, on oligochaete worms, on Daphniidæ, on insects aquatic in any stage, and on the chemical characters of the waters of the various field stations, as shown by periodical analyses. These papers will be printed separately in the Bulletin of the State Laboratory, and will also be published conjointly, at intervals, together with general discussions and other comprehensive matter, in the biennial reports of the Station.

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ALEUT BAIDARKAS IN KAMCHATKA.

THERE is a statement in Dr. Guillemard's interesting account of the 'Cruise of the Marchesa' (vol. i., pp. 224-227) which, if left uncontradicted, might lead to erroneous conclusions in the discussion now going on as to the relationship and origin of the North American natives.

The 'Marchesa,' in September, 1882, visited a point on the western coast of Kamchatka not far from Cape Lopatka, and there\* fell in with a party of 'natives' who came out to the steamer in canoes 'built somewhat on the model of a Greenlander's *Kayack*.' One of these canoes was purchased, and on p. 228 is a figure of the '*Bow of Kurile Canoe*,' presumably the one

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\*The island protecting the bay 'which is not marked in the chart was named by us after Lieut. R. H. Powell.' Guillem. Cr. Nr., i., p. 225 (1886). It is, however, in the Russian Admiralty charts (for instance No. 1475, corrected to 1880) and is called Tehtashut Isl. The native huts are situated back of Zheltij Mys, which is situated east of the Kurilskoje Lake and the Iljina Volcano (Itterna, Guillemard?).