INTELLIGENCE FROM AMERICAN SCIENTIFIC STATIONS.

GOVERNMENT ORGANIZATIONS.

U. S. geological survey.

Yellowstone national-park survey. — Preparations for field-work by the Yellowstone park division, under Mr. Arnold Hague, are now nearly complete. The experience of last season enables the members of the party to take the field with a fair idea of the nature of the volcanic rocks of the park, and of the thermal problems with which they will have to deal. Last summer's notes have been condensed and arranged for the purpose of comparing the conditions of the springs and geysers observed with their conditions during the corresponding months of this year. A comparison of the thermal activity observed in 1883 with the intensity displayed in 1878 shows, that in the greater number of instances the changes have been unimportant, and that, contrary to the opinion frequently stated, there has been no diminution in the intensity of thermal action in the park during the last six years.

Mr. Hague reports that two additions should be made to the list of active geysers, — one in the Fire-hole basins, in the lower geyser basin, and one in the upper basin. The former is situated on the broad sinter terrace or flat, that lies north-west of the mounds of the 'Fountain Geyser.' Dr. Peale, in his report of 1878, suggests the possibility of its being a geyser. It has a large, gray pool (ninety to a hundred feet in diameter), without any particular beauty of form or color. Near the west border of the pool is a fissure-like vent, over which the water, owing to its greater depth there, has a dull-green color. The following description of an eruption is from the note-book of Mr. Walter H. Weed: —

"At 5 P.M. (Sept. 25, 1883) the water was perfectly quiet, no ebullition whatever being noticed. At 5.02 a large volume of steam was thrown out, accompanied by a vigorous bulging of the water, which increased in violence until at 5.05 a mass of water, six to eight feet in diameter at the base, was thrown up in a tapering column from twenty-five to thirty feet high. For twenty seconds these spurts continued, after which the column fell, and the water boiled quietly for ten seconds. Bulging again commenced, and continued, with occasional subsidence, until 5.13, the jets varying in height from three to twenty feet. The total duration of the eruption was eleven minutes. From 5.13 to 5.43 the water boiled quietly; at the end of this time bulging again commenced, and another eruption similar to the first occurred. There are apparently two vents; the jets acting together, yet not perfectly synchronous. A low, heavy mass is shot up from the lesser vent."

This geyser has been named the 'Surprise.' From the height of the column and force displayed, it will rank as the third geyser in the Lower Basin.

The new geyser of the Upper Basin is in the Emerald group, and is the spring No. 9 of that group, described in Dr. Peale's report. Mr. Hague has named it the 'Cliff Geyser,' as it lies so close under the wall which skirts the west bank of Iron Creek. Mr. Weed was fortunate to witness this geyser in action, and describes an eruption, under date of Aug. 27, 1883, as follows: "This geyser presents a shallow basin, with rather ill-defined margin, formed of thin plates of honeycombed geyserite. The water near the edge is turbid, and from two to eight feet deep, and, when first observed in action, was boiling vigorously at a number of points. A few minutes later the water bulged violently to a height of six feet in the centre of the basin, sending out waves in all directions, which broke upon and ran over the low margin. This was soon followed by another bulge eight feet high, succeeded by a series of spurts and bulges lifting the central mass of water to a height of thirty to fifty feet. This continued for two minutes and a half, when the violence of the eruption became less and less, until the jet was but three to eight feet high, continuing for two minutes, when the water receded, still boiling vigorously. The inner basin was now seen to be approximately thirty feet in diameter, with a somewhat muddy bottom, blotched with black and orange, surrounded by a shallow, gray-white and black-lined outer basin, fifty by sixty feet. Half an hour later a second eruption occurred, quite similar to the first. These eruptions resemble those of the Giantess in appearance."

U. S. bureau of ethnology.

Annual reports. — The third annual report is all in type, and will soon be issued. The second report is now being issued: it is a volume of five hundred and fourteen pages (i.–xxxvii., 1–477), illustrated with seventy-seven plates, seven hundred and fourteen figures, and two maps. Thirteen of the plates are chromolithographs. The report of the director details the office and field work of the bureau for the fiscal year 1880–81, and presents some remarks introductory to the accompanying papers, which immediately follow. These are seven in number: viz., 'Zuñi fetiches,' by Frank Hamilton Cushing; 'Myths of the Iroquois,' by Erminnie A. Smith; 'Animal carvings from the mounds of the Mississippi valley,' by Henry W. Henshaw; 'Navajo silversmiths,' by Dr. Washington Matthews, U.S.A.; 'Art in shell of the ancient Americans,' by William H. Holmes; 'Illustrated catalogue of the collections obtained from the Indians of New Mexico and Arizona in 1879,' by James Stevenson; and 'Illustrated catalogue of the collections obtained from the Indians of New Mexico in 1880,' by James Stevenson.

Mr. Cushing's paper occupies thirty-seven pages. The fetiches most valued by the Zuñis are natural concretions or eroded rock forms, having an obvious or fancied resemblance to certain animals, or objects of that nature, in which the evident original resemblance has been heightened by artificial means. Eleven plates and three figures show a number of these fetiches, three of the plates being colored.

It is the plan of the bureau to preserve and record

the myths and folk-lore of the several tribes in their own languages, with interlinear translations. The paper of Mrs. Erminnie A. Smith, although it does not in this volume present the original language, is written after the reduction of the original to writing in the course of her linguistic work, after a prolonged residence among the Iroquois tribes, into one of which, the Tuscarora, she was adopted. It is therefore an authoritative rendering of some of the Iroquois myths, some of which have appeared in other forms, and others of which have been for the first time collected by herself. Mr. Henshaw, in forty-four pages, discusses the animal carvings from the mounds of the Mississippi valley, and reaches the following general conclusions: —

1°. That, of the carvings from the mounds which can be identified, there are no representations of birds or animals not indigenous to the Mississippi valley, and consequently that the theories of origin for the mound-builders suggested by the presence in the mounds of carvings of supposed foreign animals are without basis;

2°. That a large majority of the carvings, instead of being, as assumed, exact likenesses from nature, possess in reality only the most general resemblance to the birds and animals of the region which they were doubtless intended to represent;

3°. That there is no reason for believing that the masks and sculptures of human faces are more correct likenesses than are the animal carvings;

4°. That the state of art-culture reached by the mound-builders, as illustrated by their carvings, has been greatly overestimated.

Dr. Matthews' paper is of eight pages, and is illustrated with five plates. Mr. Holmes's paper, one of the most important in the volume, is noticed on another page. Mr. Stevenson's papers are also fully illustrated, a number of the plates being colored; and his catalogues are not merely enumerations, but are accompanied by a judicious amount of discussion and comparison, which render them of substantial value. The volume has not only a complete table of contents and a full index, but each paper has a separate table of contents, and list of illustrations.

RECENT PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Academy of natural sciences, Philadelphia.

June 10. — The Rev. Dr. H. C. McCook stated that in November, 1883, he received from Mr. Webster of Illinois two globular nodules of earth, each about the size of a grape, which were thought to be the cocoons of a spider. Similar balls had often been found attached by a slender thread or cord of silk to the under side of fallen boards. Dr. McCook was much puzzled to decide upon the nature of these objects, but, on the whole, believed them to be the work of some hymenopterous insect, and not of a spider. Two ichneumons which emerged from similar cells were determined by Mr. E. T. Cresson to be Pezomachus meabilis Cress. Subsequently Mr. Webster sent other specimens, some of which were opened. They contained silken sacs embedded in the centre of the mud-ball, apparently of spider spinning-work; and within these were fifteen or twenty yellowish eggs, evidently those of a spider. The disjecta membra of two adult spiders taken near the balls, although much broken, enabled him to determine them as drassids (a family of the tube-weavers), and probably of the genus Micaria. These had been found simply near the mud-balls, but the connection between them had not been established. Dr. McCook moistened the cocoons in order to give a natural condition more favorable for the escape of the spiderlings, should they hatch; and on May 30, on opening the box, he found about thirty lively young spiders therein. On the bottom of the box was a dead ichneumon, which had cut its way out of the side of one of the balls by a round hole. The spiderlings seemed to have escaped from their ball along the slight duct left at the point where the bit of silken cord was embedded in hard earth, and thence protruded, forming the cocoon-stalk by which the ball was attached to an under surface. The appearance of the spiderlings indicated that they had been hatched two or three days when first seen. They were evidently drassids of the same species as the broken specimens above alluded to. Thus the interesting habit of concealing her future progeny within a globular cradle of mud was demonstrated to belong to a spider as well as to a wasp. That this particular species is much subject to the attacks of hymenopterous parasites is already proved; but that it is more exposed than many other species which spin silken cocoons, otherwise unprotected in very many localities, does not appear. There is no evidence that so strange a habit has developed from necessity, and none that it proves more protective than the ordinary araneal cocoonery. Dr. McCook had named the species, provisionally, Micaria limnicunae (*limnus*, mud, and *cunae*, a cradle), although it is possible that Hentz may have described the species as one of his genus Herpyllus. The only spider-cocoons known to the speaker, at all resembling those of M. limnicunae, he had collected at Alexandria Bay, N.Y., on the St. Lawrence River, in 1882. They were attached by very close spinning-work to the under side of stones. But the external case, instead of being of mud, was a mass of agglomerated particles of old wood, bark, leaves, blossoms, the shells and wings of insects, etc. These were held together by delicate and sparsely spun filaments of silk. Two of these chip-balls were opened, and found to contain whitish cocoons similar to those in the mud-balls of M. limnicunae. Another had within it the characteristic cell of some hymenopterous parasite containing a dried-up pupa. A very thin