another is apparently in the natural shape in which it was found.

It is worth recapitulating here, that *native* gold, silver, copper, and iron, were all found on the altar of the large mound in this group, and that all were manufactured into ornaments simply by hammering.

On the altar of another mound of the group were several terra-cotta figurines of a character heretofore unknown from the mounds. Unfortunately, these objects, as well as others found on the altars, had been more or less burnt; and many of them appear to have been purposely broken before they were placed on the altars. Many pieces of these images have been united; and enough has already been made out to show their importance in the study of early American art. The peculiar head-dresses, method of wearing the hair, and the large button-like ear-ornaments, shown on these human figures, are of particular interest. The shape of the ear-ornaments leaves no doubt of the character of the spool-shaped objects previously referred to. On the same altar were two remarkable dishes in the form of animals, carved from stone, which have been nearly restored from a large number of small fragments. With these were a serpent cut out of mica, several hundred small quartz pebbles from the river, and nearly three hundred astragali of deer and elk. As but two of these bones could be obtained from a single animal, and as there were but one or two fragments of other bones, there must have been some special and important reason for collecting so large a number of these particular bones. A finely made bracelet of copper, and several other ornaments of copper, a few pearls and shells and other ornaments, were on this altar, with two large masses of native copper, and a mass of unworked meteoric iron. Many fossil shells were found on both altars.

Harvard college observatory, Cambridge, Mass.

Astronomical photographs. — It is proposed to form, at the observatory, a collection of photographs of the heavenly bodies and of their spectra. Original negatives would be particularly valuable. It may happen that some such negatives, having slight imperfections which would limit their value for purposes of engraving, could be spared for a collection, and would be as important, considered as astronomical observations, as others photographically more perfect. In some cases, astronomers may be willing to deposit negatives taken for a special purpose, and no longer required for study, in a collection where they would retain a permanent value as parts of an historical series. Where photography is regularly employed in a continuous series of observations, it is obvious that specimen negatives only can be spared for a collection; but in such cases it is hoped that some duplicates may be available, and that occasional negatives may hereafter be taken for the purpose of being added to the collection, to exhibit recent improvements or striking phenomena. When negatives cannot be furnished, glass positives, taken, if possible, by direct printing, would be very useful. If these, also, are not procurable, photographic prints or engravings would be desirable.

The observatory already possesses many of the early and historically important specimens which would naturally form part of such a series. Among these may be mentioned four series of daguerrotypes and photographs of various celestial objects, taken at this observatory. These series were respectively undertaken in 1850, 1857, 1869, and 1882.

Copies of memoirs or communications relating to the specimens sent, or to the general subject of astronomical photography, would form an interesting supplement to the collection. A part of the contemplated scheme will involve the preparation of a complete bibliography of the subject, including a list of unpublished photographs not hitherto mentioned in works to which reference may be made.

The expense which may be incurred by contributors to the collection in the preparation and transmission of specimens will be gladly repaid by the observatory, when desired.

NOTES AND NEWS.

— The titles of the papers read during the recent session of the National academy of sciences at Washington, April 17 to 20, were: Joseph LeConte, On the genesis of metalliferous veins (read by T. Sterry Hunt); Elias Loomis, On barometric gradients (read by Cleveland Abbe); Ira Remsen, On the nascent state of oxygen; E. D. Cope, On the structure of the skull in the Hadrosauridae; G. W. Hill, Determination of the inequalities of the moon's motion which are produced by the figure of the earth (a supplement to Delauny's 'Theorie du mouvement de la lune'); T. Sterry Hunt, The decay of rocks geologically considered; S. Weir Mitchell and E. T. Reichert, On the composition of the venom of serpents; Ira Remsen, On changes in the properties of atoms and atomic groups caused by changes in the position in a molecule: W. Ferrel, Maxima and minima tide-predicting machine; S. P. Langley, On the measurement of wave-lengths of heat; Otto von Struve, On the great object-glass made by Alvan Clark and Sons for the Pulkova observatory; S. P. Langley, On the spectrum of an argand gas-burner; G. F. Barker, Efficiency of storage-batteries; C. H. F. Peters, Photographs of the great comet of 1882; H. A. Rowland, Progress in spectrum photography; A. W. Wright, Some experiments upon a method of forming a visible image of the solar corona; A. W. Wright, On the phosphorescence of sulphate of quinine; Wolcott Gibbs, Further generalizations regarding complex inorganic acids; A. Agassiz, The fauna of the Gulf of Mexico.

The autumn session of the academy, for the reading of scientific papers, will be held at New Haven in November.

— Special reports Nos. 56 and 57 of the U. S. department of agriculture for February and March, 1883, are entirely occupied with statistics. No. 56 opens with a report upon the numbers and values of farm-animals in the several states and territories, including a comparison with the corresponding statistics of last year. These show that there has been a decided increase in the number, and in the average price per head, of these animals. The statistics of the cotton-crop point to a probable total movement of not less than 7,000,000 bales, of unusually good quality; making the total crop nearly four per cent larger than the great crop of 1880. The report contains, also, a comparison of the prices of English and American agricultural implements, an article on

transportation-rates in Europe, and a list of transportation-rates on the more important rail and water routes from the west to the seaboard. All these are obviously of more or less general interest; but it is difficult to see how it can be considered the duty of the department to publish, as it does in this report, a gratuitous advertisement of one particular western railroad, avowedly furnished by its western passenger-agent. Report No. 57 is on the distribution of the corn and wheat crops of 1882, and the comparative quantity still remaining on the farm. Statistics are also presented regarding the extent and character of the domestic uses of these crops, and tables of transportation-rates are appended to the report.

— The U. S. geological survey has commenced the publication of octavo bulletins to receive such papers, relating to the general purpose of its work, as would not properly come under the heads of annual reports or monographs. Each paper will be issued separately with a distinct number, and will have two paginations, — one proper to itself, at the top; and one belonging to the volume, at the bottom, — a most convenient arrangement. The first number, just issued, contains a paper by Whitman Cross on hypersthene-andesite, and on triclinic pyroxene in augitic rocks, with a geological sketch, by S. F. Emmons, of Buffalo Peaks, Col., where the principal rocks examined were found. Mr. Cross urges the need of a re-classification of the andesite rocks, and concludes that the chief subdivision of the augite-andesites may much more properly be called hypersthene-andesite Two plates accompany the bulletin.

— At its two hundred and thirty-third meeting, held April 7, the Philosophical society of Washington listened to Prof. W. C. Kerr, on the Geology of Cape Hatteras and the adjoining coasts; to Mr. H. F. Walling, on Topographical indications of a fault near Harper's Ferry; and to Mr. S. F. Emmons, on Ore deposition by replacement.

— At the annual meeting of the Cincinnati society of natural history, April 3, the following officers were elected: president, Dr. J. H. Hunt; vice-presidents, Professors John Mickleborough and George W. Harper; secretary, Davis L. James; treasurer, S. E. Wright; librarian, A. E. Heighway, jun. The report of the treasurer showed a balance in the treasury. The membership dues paid during the year amounted to a larger sum than in any previous year. Reports of the curators and custodian were handed in. The latter stated that the use of the museum by instructors of the high schools and academies was increasing yearly. The collections had been increased largely by donation and purchase, and were as well displayed as the limited space permitted.

— By the consent of the surgeon-general of the army, the Washington anthropological society held its last meeting in the army medical museum. Three papers were read, as follows: Myths of the Dhegiha, the stock including Omahas, Poncas, and Osages, by the Rev. J. Owen Dorsey; A year in anthropology, being a summary of works on man, which appeared in 1882, including those by Americans, those on America, and those of general anthropological interest, by Professor Otis T. Mason; A letter from Sir Rawson Rawson upon the relativity of stature to latitude, derived from the volumes of anthropometry published by the provost-marshal-general's bureau during the war of the rebellion, by Dr. Robert Fletcher.

— Prof. C. H. Hitchcock has just returned home from a tour to the Hawaiian Islands, having visited Kilauea, Mauna Loa, the source of the Hilo flow of 1881, and Haleakala. Kilauea has rarely been filled up with lava so much as at present, the 'black ledge' being covered by over fifty feet thickness of recently cooled lava.

— Mr. Frederick W. True has been appointed acting assistant director of the National museum, to serve during the absence of assistant director, Mr. Goode, who sailed, March 31, for London, to attend the Fisheries exhibition as U. S. commissioner.

— The Society of American taxidermists will hold their third exhibition in New York, May 1 to 5. The programme of the general meeting to be held May 1, at Lyric Hall, is: President Lucas, The scope and needs of taxidermy; William T. Hornaday, Common faults in the mounting of quadrupeds; Prof. F. W. Staebner, Taxidermic value of animal illustrations; President Lucas, On the mounting of crustaceans; F. S. Webster, Taxidermy as a decorative art; F. S. Webster, How to clean bird-skins of all kinds; Samuel F. Rathbun, How to make good bird-skins; Frederic A. Lucas, New method of skinning turtles; William T. Hornaday, Mounting mammal heads.

RECENT BOOKS AND PAMPHLETS.

Partsch, J. Die gletscher der vorzeit in den Karpathen und den mittelgebirgen Deutschlands nach fremden und eigenen beobachtungen dargestellt. Breslau, 1882. 209 p., 4 kart. 4°.

Plumandon, J. R. Le baromètre appliqué à la prévision du temps dans la France centrale. Paris, 1883. 15 pl. 12°.

Renault, B. Cours de botanique fossile, fait au Muséum d'histoire naturelle. Troisième année. Fougères. Paris, *Masson*, 1882. 36 pl. 8°.

Rütimeyer, L. Die Bretagne. Schilderungen aus natur und volk. Basel, 1883. 8°.

Saporta, le marquis de. Apropos des algues fossiles. Paris, *Masson*, 1882. 10 pl. 4°.

Scheffler, H. Die magischen figuren. Allgemeine lösung und erweiterung eines aus dem alterthume stammenden problems. Leipzig, 1882. 114 p., 2 pl. 8°.

Scheiner, Jul. Untersuchungen über den lichtwechsel Algols nach den Mannheimer beobachtungen v. Prof. Schönfeld in den jahren 1869 bis 1875. Inaugural-dissertation. Bonn, 1882. 31 p. 8°.

Schmid, A. E. v. Leitfaden für den unterricht in ausgewählten kapiteln der chemischen technologie. Zum gebrauch an handels-, industrie- und gewerbeschulen. Graz. 330 p. 8°.

Schmitz, F. Die chromatophoren der Algen. Vergleichende untersuchungen über bau und entwickelung der chlorophyllkörper und der analogen farbstoffkörper der Algen. Bonn, 1882. 184 p., 1 pl. 8°.

Schultz, G. Die chemie des steinkohlentheers mit besonderer berücksichtigung der künstlichen organischen farbstoffe. Braunschweig, 1882. 1106 p., illustr. 8°.