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OF THE
BUREAU OF ETHNOLOGY

TO THE
SECRETARY OF THE SMITHSONIAN INSTITUTION

1884-'85

BY

J.W. POWELL

DIRECTOR



WASHINGTON
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1888

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[1.](#) In pocket at end of volume.

LETTER OF TRANSMITTAL.

XXI

SMITHSONIAN INSTITUTION, BUREAU OF ETHNOLOGY,
Washington, D. C., October 23, 1885.

SIR: I have the honor to submit my Sixth Annual Report as Director of the Bureau of Ethnology.

The first part consists of an explanation of the plan and operations of the Bureau; the second part consists of a series of papers on anthropologic subjects, mainly prepared by my assistants to illustrate the methods and results of the work of the Bureau.

I desire to express my thanks for your earnest support and your wise counsel relating to the work under my charge.

I am, with respect, your obedient servant,

A handwritten signature in cursive script, reading "J. W. Powell". The signature is written in dark ink on a light background.

Prof. SPENCER F. BAIRD,
Secretary Smithsonian Institution.

XXIII

SIXTH ANNUAL REPORT OF THE BUREAU OF ETHNOLOGY.

By J. W. POWELL, DIRECTOR.

INTRODUCTION.

The prosecution of research among the North American Indians, as directed by act of Congress, was continued during the fiscal year 1884-'85.

No change has been made in the general plan upon which the work has been prosecuted as set forth in former reports. Certain lines of investigation have been decided upon, which are confided to persons trained in their pursuit, and the results of these labors are presented from time to time in the publications of the Bureau provided for by law. A brief statement of the work upon which each of the special students was actively engaged during the fiscal year is furnished below; this, however, does not embrace all the studies undertaken or services rendered by them, since particular lines of research have been suspended in this, as in former years, in order to prosecute temporarily work regarded as of paramount importance. From this cause delays have been occasioned in the completion of several treatises and monograph's, already partly in type, which otherwise would have been published.

Invitation is renewed for the assistance of explorers, writers, and students who are not and may not desire to be officially connected with the Bureau. Their contributions, whether in the shape of suggestions or of extended communications, will be gratefully acknowledged, and, if published either in the series of reports or in monographs or bulletins, as the liberality of Congress may in future allow, will always receive proper credit.

The items now reported upon are presented in three principal divisions. The first relates to the publication made; the second, to the work prosecuted in the field; and the third, to the office work, which largely consists of the preparation for publication of the results of field work, with the corrections and additions obtained from the literature of the subjects and by correspondence.

PUBLICATION.

The only publication actually issued during the year was entitled Proof-Sheets of a Bibliography of the Languages of the North American Indians, by James Constantine Pilling. The volume, a quarto of 1,175 pages, consists of an author catalogue of books, manuscripts, magazine and newspaper articles, publications of learned societies, and other documents relating in any way to the Indian languages of North America. Only one hundred copies were printed, which were distributed to collaborators.

This work was commenced by Mr. Pilling in 1879 and has been prosecuted with diligence and skill, notwithstanding the engrossing nature of his other duties. It began as an author card catalogue, designed merely for office use. In time it became apparent that such a systematic catalogue of the literature of Indian languages, if printed and distributed, would be of important service to all the numerous workers on the general subject, besides those directly connected with the Bureau, to whom alone it was accessible in manuscript form. By this course the accumulated results of several years' labor would be immediately available for the use of students generally, and the distribution of proof-sheets would in turn increase interest in the work, elicit comment and criticism, and secure additional contributions, through all of which the final volume contemplated would become more satisfactory and complete, both in form and substance. The thorough conscientiousness and punctilious care shown in the present catalogue, and especially the comprehensive bibliographic spirit in which the work has been conceived, prove the peculiar fitness of the author for the undertaking. He has set before him and has kept steadily in view the following aims:

First, to discover every document in existence relating to the subject, either printed or in manuscript.

Secondly, to record a description of every document found, so accurate and full that each book or article mentioned is clearly identified and all its contents relating to Indian languages set forth, with citation of the chapters and pages within the work where the linguistic material may be found.

Thirdly, to name, when possible, one or more libraries where each work catalogued may be found.

Fourthly, to arrange and combine the whole so that the student using it may in the shortest time learn whether any work contains the special matter which he desires to consult, and, if so, precisely where he may find it. In the case of rare books or papers special attention has been paid to obtain full information, and in the case of some of the rarest books fac-similes of the title pages are given. The value of a work so broadly conceived and so carefully executed is very great. The literature of this subject has become so voluminous, so disconnected, so scattered in time and place, that progress in the classification of Indian languages and the determination of their affinities has been greatly retarded, awaiting the orderly arrangement of accumulated information. This requisite, with the important addition of the correction of current errors, is met by the catalogue. It has been found indispensable to the Bureau and has already been gratefully acknowledged as invaluable by all students of American tribes to whom copies have been distributed.

Since the printing and distribution of the proof-sheets, and markedly as a result thereof, the card catalogue has continued to grow; and, although not complete and, from the nature of the subject, not expected to become absolutely exhaustive, the recent additions to it indicate how thoroughly the work was originally done. It may be possible, therefore, before long to substitute for the Proof-Sheets the Bibliography itself in standard form.

FIELD WORK.

Under this heading are comprised—

First, the systematic operations of the division of mound exploration carried on east of the Rocky Mountains.

Secondly, researches in and collections from the ancient ruins of the Southwest and comparative study of the present inhabitants of that region and the objects found among them.

Thirdly, linguistic work or expeditions among the several Indian tribes at their homes, with the main purpose of acquiring knowledge of their spoken languages.

Fourthly, general studies, or those embracing various branches of inquiry, conducted among the existing Indian tribes.

MOUND EXPLORATIONS.

WORK OF PROF. CYRUS THOMAS.

The work of exploring the mounds and other ancient monuments of that portion of the United States east of the Rocky Mountains, commenced in 1882, was carried on during the fiscal year, under the charge of Prof. Cyrus Thomas.

The regular assistants during the first half of the year were Messrs. P.W. Norris, James D. Middleton, and John P. Rogan. For the latter half they were Messrs. Middleton, Rogan, and John W. Emmert, the last named having been engaged to fill the vacancy occasioned by the death of Mr. Norris.

Mr. Norris was engaged during the fall of 1884 in exploring the extensive group of works in the vicinity of Charleston, Kanawha Valley, W. Va. He continued at work there until December, when he was compelled by cold weather and illness to desist. To the great regret of all his associates in the work, his illness terminated in death on the 14th of January, 1885. By his death the division has lost a faithful and enthusiastic worker.

During the summer and fall of 1884 and until the approach of extremely cold weather, Mr. Middleton was engaged in exploring the works of Knox County, Ohio. Throughout the winter and following spring his field of operations was eastern Arkansas. In the latter field he was assisted by Mr. L. H. Thing, who was employed for three months as temporary assistant. XXVII

During the summer and until the beginning of winter, Mr. Rogan was engaged (in conjunction with Rev. J. P. Maclean, who was employed as a temporary assistant) in exploring the ancient monuments of Butler County and the adjacent regions of southern Ohio. On the approach of the cold season he went south, his field of operations for the remainder of the year being northern Georgia and the southern counties of East Tennessee.

Mr. Emmert, who had been employed on January 1, 1885, to make some special explorations in East Tennessee, was made permanent assistant immediately after the death of Mr. Norris. His work in that section proving successful he continued it until the close of the fiscal year.

Mr. Gerard Fowke was engaged during November in examining the ancient quarries of Flint Ridge, Ohio, and in making a collection to illustrate the various stages in the aboriginal manufacture of flint implements. His collection is, perhaps, the most complete in this particular line of any so far made in this country. In the winter he was employed about two months in special investigations of some ancient works in Pontotoc and Union Counties, Miss., a locality supposed to have been visited by De Soto during his unfortunate expedition. In some of the mounds of this section, which was formerly the home of the Chikasa, he found some articles of European manufacture, among them a small silver plate bearing the royal arms of Castile and Leon in an old heraldic form.

Although the number of specimens obtained does not exceed that of the collection of the preceding year, the general result shows a decided advance in the accuracy of the work done. The measurements and plats have been made with more care and exactness, the descriptions are more complete, and the details more fully set forth. As an illustration one case is presented. A large mound was opened which was found to contain over ninety skeletons, irregularly placed and at different depths. At the outset a plat of the mound was made; each skeleton was located on it as discovered, and notes were taken of the depth, position, articles found with it, etc. Thus the exact position of each skeleton in the mound is recorded, as well as that of any article accompanying it. The collections made are more varied in character than those of any previous year, including several new types of pottery, some unusually fine stone implements, and from several mounds articles showing contact with Europeans. The pottery obtained by Messrs. Middleton and Thing in Arkansas is of more than ordinary interest, containing a number of specimens of the rarer forms, also several colored specimens. XXVIII

The same care has been taken as heretofore in labeling and numbering the specimens, so that each can be traced by the record to the exact place where it was found. The illustrations showing the construction, character, and form of the various works explored exceed in number, accuracy, and importance those of any previous year.

EXPLORATIONS IN THE SOUTHWEST.

WORK OF MR. JAMES STEVENSON.

Mr. James Stevenson was placed in charge of a party, with instructions to proceed to Arizona and New Mexico to make researches and collections among the Pueblo Indians and the ancient ruins in that region.

Mr. Stevenson's party was divided into three sections. The section in charge of Mr. F. T. Bickford visited the remarkable series of ruins in Chaco cañon, in northwestern New Mexico; Cañon de Chelly and its branch cañons; the cliff dwellings in Walnut cañon, in Arizona, and a group of interesting cave dwellings, different in structure from any heretofore found, near Flagstaff, in the same Territory. All these were carefully examined. Full and extensive notes, as well as sketches and photographic illustrations, were made of these ruins.

Another section, in charge of Mr. C. A. Garlick, was stationed at the pueblo of Acoma, in New Mexico. The work at this village resulted in a collection of about thirty-five hundred specimens, consisting of pottery and a variety of utensils of other material, such as stone, bone, wood, and woven fabrics, illustrating the arts of the people of Acoma. The collections from this pueblo, though not embracing a great variety of objects, will illustrate nearly all the phases of the arts and industrial pursuits of these Indians.

Another section of Mr. Stevenson's party, under his own supervision and with the important assistance of Mrs. Stevenson, was employed in making collections and studies at Zuñi. The collection from there is much larger than any heretofore obtained and includes many objects relating to the outdoor ceremonies of the Zuñi. Specimens of these were secured from their sacred springs, caves, and shrines. All details relating to their ceremonials were attentively studied, and a series of water color sketches was made of altars used and of masks worn on these important occasions. A large number of fetiches was also obtained, representing many of the animals held in religious esteem by the Zuñi. A series of photographs was made of the sacred springs, wells, monuments, picture writings, and shrines of the Zuñi located at different points over an area of about seventy-five miles from Zuñi, and a collection was secured of representative specimens of their fetiches, plume sticks, and other objects connected with their mythology and religious practices. The collection made during the year was unusually large and important. It comprises about eighty-five hundred specimens from the Indian tribes of the Southwest embraced in the research; these consist of woven fabrics and pottery, bone, and stone implements, both ancient and modern, and represent nearly all phases of the life, art, and industries of these tribes. These collections have been deposited in the U. S. National Museum for arrangement, classification, and description.

WORK OF MR. VICTOR MINDELEFF.

A party in charge of Mr. Victor Mindeleff left Washington on August 5 to survey the ruined pueblos of the Chaco, in New Mexico. Five of the ruins were accurately measured and platted to scale, and a full series of sketches, plans, and photographs was secured. Mr. Mindeleff returned from the field on the 1st of October. He then made a trip to the great Etowah mound, near Cartersville, Ga., under the direction of Prof. Cyrus Thomas, in order to secure an accurate survey and scale drawing, as a basis for the construction of a model.

At the close of this work Mr. Mindeleff returned to Washington, on October 7, and was engaged in office work until the middle of the following June, when he took the field in advance of his party for further studies among the ruins and pueblos of the Cibola and Tusayan groups. He was also instructed to secure similar material at other available points for comparison.

LINGUISTIC FIELD WORK.

WORK OF MRS. ERMINNIE A. SMITH.

From the 1st of July to the 15th of August, 1884, Mrs. Smith, assisted by Mr. J. N. B. Hewitt, of Tuscarora descent, was engaged among the Onondaga living near Syracuse, N. Y., in translating and annotating two Onondaga manuscripts; afterward, until the latter part of October, with the same assistance, she was at work on the Grand River reservation in Canada, where she filled out the vocabulary in the Introduction to the Study of Indian Languages from the dialect of the Cayuga. She also obtained from the Mohawk a translation, with annotations, of a manuscript in their dialect.

The three manuscripts mentioned are now in the possession of the Bureau of Ethnology. Their origin and history are not distinctly known, as they are all probably copies of originals which seem to have been lost or destroyed. It was intended in these manuscripts to reproduce, by the alphabet and the script used by English writers, the sound of the dialects employed.

These records have their chief interest in the preservation of many archaic words, or those of ceremony, law, and custom, which in these dialects, as is the general rule, remain unchanged, although the colloquial language may be modified. The subject matter of all these records is genuinely and exclusively Iroquoian.

The Mohawk manuscript was copied about the year 1830 by Chief John "Smoke" Johnson from an earlier original or perhaps copy. The orthography of this copy is quite regular and is that of the early English missionaries, being similar in many respects to the well known Pickering alphabet.

One of the Onondaga manuscripts was found in the possession of Mr. Daniel La Fort and the other in that of Mrs. John A. Jones, both of the Onondaga reserve, New York. These two copies differ from each other in orthography and substance, the Jones manuscript being probably a full detail of a part of the other.

The orthography of the La Fort manuscript is very irregular and difficult to read, but that of the Jones manuscript is regular and legible. The Mohawk manuscript contains a detailed account of the rites and ceremonies, speeches and songs, of the condoling and inducting council of the Iroquoian League in the form in which that council was conducted by the elder brothers or members of the Onondaga, Mohawk, and Seneca divisions, which have been generally called tribes, but are more correctly confederacies, their villages being the tribal unit. The La Fort Onondaga manuscript comprises a similar ritual of the same council as carried out by the younger brothers, viz., the Cayuga, Oneida, and Tuscarora members or confederacies of the league. The Jones Onondaga manuscript is the charge of the principal shaman to the newly elected or inducted chief or chiefs.

During the remainder of the year material was collected and work continued on the Tuscarora-English part of the Tuscarora dictionary.

WORK OF MR. H. W. HENSHAW.

Mr. H. W. Henshaw visited southern California for the purpose of pursuing linguistic studies in the group of languages spoken by the Santa Barbara Indians. Although these Indians became known at a very early day, being mentioned with particularity in the relation of Cabrillo's voyage along the California coast in 1542, but little has been ascertained in respect to their language and its relations to the speech of neighboring tribes.

Few vocabularies were collected by the early Spanish missionaries and those gathered were very imperfect, so that no conclusions can be based upon them with confidence.

As a result of the policy pursued by the various missionaries among these docile tribes, aboriginal habits were soon exchanged for others imposed by the priests. Tribal organizations were broken up and the Indians were removed from their homes and located about the missions. In addition the Spanish language was early introduced and so far as possible made to replace the aboriginal tongue. As a consequence Spanish became familiar to a large number of the proselytes, and all the surviving Santa Barbara Indians speak Spanish fluently, or rather the Mexican dialect of Spanish. Indeed, the impression prevails generally in California that none of the Indians can speak their own tongue. As a matter of fact, however, in their own families and when away from the white men they discard Spanish entirely.

The attempt to preserve the language was begun none too soon, as of the large population attributed to this part of the California coast Mr. Henshaw was able to discover only about fifty survivors, and these were widely scattered over several counties. A number of the dialects of the linguistic family are now extinct, and only a month before Mr. Henshaw's arrival at San Buenaventura an old woman died who, it is believed, was the last person to speak the dialect belonging to the Island of Santa Cruz. In Santa Barbara and Ventura counties six dialects of the family were found, which are believed to be all that are now extant.

In the case of the dialect of Santa Rosa island, but one Indian remained to speak it. Two more dialects are spoken by two or three individuals only. The existing dialects, named according to the missions around which they were spoken, are as follows: San Buenaventura, Santa Barbara, Santa Rosa Island, Purissima, Santa Inez, and San Luis Obispo. With the exception of the last named the several dialects are very closely related, and, although each possesses a greater or less number of words not contained in the others, their vocabularies show many words which are common to all.

The dialect formerly spoken at San Luis Obispo differs much from any of the others, and a critical comparison is necessary to reveal a sufficient number of words possessing identical roots to render their common parentage obvious.

Extensive vocabularies of the dialects of San Antonio and San Miguel were obtained, there being about a dozen Indians who speak these languages around the old San Antonio mission. These languages have been supposed to be of the Santa Barbara family (as it has hitherto been termed, now called Chumashan family), but the material obtained by Mr. Henshaw disproves this, and, for the present at least, they are considered to form a distinct family.

Mr. Henshaw visited Los Angeles and San Diego counties for the purpose of determining the exact northern and southern limits of the Shoshonian family, which extends quite to the coast in California.

At San Diego and San Luis Rey he obtained vocabularies representing four dialects of the Yuman family.

WORK OF MR. A. S. GATSCHET.

In August, 1884, Mr. Gatschet proceeded to visit the Tonkawē and Lipan tribes in Texas.

He reached Fort Griffin on the 29th of August. The Tonkawē tribe was encamped about a mile and a half south of Fort Griffin, Shackelford county, and consisted of 78 individuals, while the Lipan camp, one mile north-northwest, consisted of 19 persons only. All these Indians were on the point of removing to the Oakland reserve, Indian Territory.

The Tonkawē constitute an aggregate of several tribal remnants formerly living independently of one another in southern Texas and on the Rio Grande. Mr. Gatschet devoted five weeks to the study of their language and one week to that of the Lipan, which is a dialect of Apache (Athapascan). The Tonkawē is a sonorous and energetic form of speech. The radix of many of the adjectives becomes reduplicated to form a kind of plural, and the same thing is observed in some of the verbs, where iteration or frequency has to be indicated. Case suffixes are observed in the substantive, which can easily be traced to postpositions as their original forms. Very few of the natives were sufficiently conversant with English or Spanish to serve as interpreters, so that it was difficult to secure trustworthy results. A white man who had lived over six years among them was of material help, and several mythologic and other texts were obtained with tolerable correctness through his aid.

XXXIV

On October 9 Mr. Gatschet left Fort Griffin and reached Fort Sill, in the Indian Territory, on the 15th. Many Kaiowē and Comanche Indians encamped during the warmer months of the year around this fort, which is situated at the southeast base of the Wichita mountains. He engaged the best help he could find for studying the Kaiowē language, for which there is no Government interpreter. The Comanche is the predominating language on the whole Kaiowē, Comanche, and Apache reservation, although the Comanche exceed the Kaiowē but little in number. The Comanche is more easily acquired, at least to the extent required in conversation, and all the traders and shopkeepers on the reservation have a smattering of it.

Better interpreters for Kaiowē were obtained at Anadarko, the seat of the agency, where Mr. Gatschet remained from October 31 to December 12. A few Kaiowē were found who had passed some months or years among Americans or at the Indian schools at Carlisle, Chilocco, and elsewhere, and could express themselves intelligibly in English. A few white Mexicans were found among the Comanche, who were captured by them in infancy, acquired the Comanche language, and have ever since lived among these Indians. Of the Kaiowē, Mr. Gatschet acquired over two thousand terms, phrases, and sentences, several historic texts of value, and of the Comanche, eight hundred or a thousand words. The circumstances necessitated careful and numerous revisions of everything obtained, by which much of the time was absorbed.

The Na-ishi Apache, about four hundred in number and formerly roaming with the Kaiowē, furnished also a large amount of terms, exceeding fifteen hundred.

XXXV

There are a few verbal similarities between the Kaiowē and the Shoshoni languages, but apparently not enough to indicate anything more than long association of these peoples. The Kaiowē has a dual in the intransitive verb and in some nouns. There are more than a dozen different modes of forming the plural of nouns. The subject pronoun is incorporated with the verb as a prefix, and every tense has a different subject pronoun, as in Otomi and other languages of southern Mexico.

Vocabularies were also obtained of Delaware, Ottawa, Yuchi, Caddo, Wichita, and of the hitherto unstudied Caddo dialects of Anadarko and Yatassi.

In spite of persevering search it was not possible to find any of the Bidai or the Tonica in Texas, although it is probable that some of them survived in that State as late as 1850.

Mr. Gatschet then passed a whole month among the Atakapa at Lake Charles, the county seat of Calcasieu parish, Louisiana. Of the two dialects traceable, only the western one seems to exist now, being still spoken by a few women living at the town. The language is sonorous, but strongly nasal.

Returning to the Indian Territory, after a fruitless search for the Tonica and Adai, he stopped at Eufaula, Creek Nation, to meet a Na'htchi Indian named Lasley, about sixty years old, who had represented his tribe in the councils of the Creek Nation. This man explained his Na'htchi terms and phrases by Creek equivalents, and these had to be translated into English to obtain full light concerning the Na'htchi terms. One legendary text was also obtained. The language is rather consonantal and has a multiplicity of verbal forms.

Among the Yuchi tribe on Middle Arkansas river, southwestern bank, and over 40 miles from Muscogee Station, Indian Territory, he remained but a week, too short a time to obtain full information respecting this interesting language. There are five or six hundred Yuchi still living on this tract. Two texts and a few popular songs, with one thousand terms of the language, were obtained.

The last stop was made among the Modoc at Quapaw Agency, at the agency buildings. About ninety are left of those brought there for having taken part in the Modoc war of 1872-'73. Five mythic tales were gathered from the natives within the short time of three weeks, one of them being of considerable length and of importance. It is called "The birth of Aishish." The birth of this astral deity resembles in most particulars that of Bacchus from the thigh of Jupiter after his mother, Semele, had been burned to death. The terms, phrases, and sentences gathered, besides the myth mentioned, amount to over fifteen hundred items, which will prove useful for completing the work on the Klamath Indians of Oregon now in preparation.

Of the Shawnee language several hundred words were gathered from the Indians of that tribe settled around the agency.

Mr. Gatschet returned to Washington in April, 1885.

WORK OF REV. J. OWEN DORSEY.

Rev. J. Owen Dorsey visited the Siletz Agency, Oregon, in August, 1884, to gain linguistic and other information respecting the tribes in that region. When he returned, in November, he brought back as the result of his work the following vocabularies:—Athapascan family: Applegate Creek, Galice Creek, Chastā Costa, Miko-no-tunne, Chetco, Smith River, Cal., and Upper Coquille.—Yakonan family: Yaquina, Alsea, Siuslaw, and Lower Umpqua.—Kusan family: Mulluk or Lower Coquille.—Takilman family: Takilma or Upper Rogue River.—Shahaptian family: Klikitat.—Sastean family: Shasti—total, nineteen vocabularies, ranging from fifty to three thousand entries, exclusive of phrases and grammatical notes.

He also obtained materials for an account of the social organization into villages of some of these Indians, the basis for which appears to have been the clan or gens. Rough maps, showing the localities of the villages, were made. Mr. Dorsey also obtained from several tribes the corresponding Indian names of about sixty vegetal products, specimens of which were brought to Washington for identification.

WORK OF MR. JEREMIAH CURTIN.

Mr. Curtin spent the first two weeks of July at the Quapaw agency, Indian Territory, in making a collection of Modoc myths, which he had begun in the preceding winter, being part of a general collection of Indian myths begun in 1883. The number of Modoc myths obtained was nearly one hundred.

After finishing work at the Quapaw Agency, he returned to Washington, and shortly afterward was directed to proceed to northern California and obtain vocabularies of the Nosa and Kombo languages, and thence to Oregon to obtain vocabularies of the Wasco, Tyigh, and Tenina languages.

Work was begun on the Nosa language (Yanan family) at Redding, Cal., on October 11. The difficulties were very great, especially at first, owing to the fact that the Nosa are few in number, live far from one another, and have a very imperfect knowledge of English.

The Nosa were a prominent and rather numerous people until 1864, when all of them who could be found were massacred by white settlers, who organized two companies for the purpose of exterminating the tribe. Owing to a chance by which a few escaped and to the exertions of Mr. Benjamin Oliver, who secreted several in his cellar, about fifteen full blood Nosa survived.

Work on Nosa was continued in and around Redding until the end of November, when Round Mountain was visited to complete the Nosa vocabulary and obtain that of the Atsugei (Palaikan family), a very interesting language. Work at Round Mountain was finished on January 8 and Redding was revisited on January 9, preparatory to departing for Oregon.

Owing to the excessive severity of the winter and the snow blockades, which lasted six weeks, communication with Warm Spring was closed, and it was impossible to enter the reservation till January 27, when Sinnashee, a school and center of the Warm Spring Indian population, was reached.

At this place the Tyigh vocabulary (Shahaptian family) was collected. The Wasco (Chinookan family) was obtained at the agency headquarters near the Deschutes river. Tenina, being identical with the Tyigh language, was omitted. From April 18, at which date work at the Warm Spring agency was finished, until June 30, the time was devoted to collecting myths in the Klamath reservation and at Yreka.

During the whole period of work all the myths that could be found among the people whose languages were being investigated were reduced to writing. In this manner a large body of Nosa, Atsugei, Tyigh, and Wasco myths was collected. In the cases of Klamath and Shasti, myths were the objects directly in view.

The vocabularies were obtained with satisfactory completeness and the verbal systems worked out in detail.

The Nosa is remarkable for a regularity of structure which yields to analysis and has a certain monotonous harmony of sound.

The Atsugei has a sonorous roll, a strong letter *r*, and a certain number of words in common with the Shasti, itself one of the *r* languages.

GENERAL FIELD WORK.

WORK OF DR. WASHINGTON MATTHEWS.

Dr. Washington Matthews, assistant surgeon U. S. Army, continued his investigations among the Navajo Indians in New Mexico and Arizona. He had been stationed in the Navajo country as post surgeon of Fort Wingate, N. Mex., from 1880 to 1884, during which time he devoted himself to studying the language, customs, and ceremonies of this tribe as much as his official duties would permit. Some of the great shamanistic ceremonies of the Navajo, occupying nine days for their performance, he had often seen in part; but he had never had an opportunity of witnessing one throughout its entire duration, as he had not sufficient time at his disposal.

Before leaving New Mexico, however, he secured the friendship and confidence of some of the leading medicine men and obtained their promise to admit him to their most secret rites during their entire performance whenever he should be able to avail himself of the privilege. He was also promised complete instruction in the mythology and symbolism of these rites.

In the autumn of 1884 he was given an opportunity, under the auspices of the Bureau of Ethnology, to return to the Navajo country and devote himself for a considerable time entirely to anthropologic studies among the people.

He first visited the Navajo who dwell in the neighborhood of the San Mateo mountains, the Tsotsildinè, or people of the Great Peak, a local division or subtribe living much farther to the east and having longer and more intimate associations with Mexicans and Americans than the main body of the people. While at this place, he ascended the peak of San Mateo, or Mount Taylor, a mountain held sacred by the Navajo, to observe the various places on the mountain mentioned in the Navajo myths.

Leaving San Mateo he proceeded to Fort Wingate, and learning that one of the most important of the Navajo rites was about to be celebrated at a place called Niqotlizi (Hard Earth), north of Fort Wingate on the Navajo reservation, he repaired thither without delay. The ceremony which he went to witness was that of dsilyídje-qaçàl, or mountain chant. It is also called Ilnasjingo-qaçàl, or chant in the dark circle of branches, from the great corral of evergreens in which the public rites of the last night are performed. It is known to the white men who live among these Indians as the hoshkawn dance, from one of the public dances of the last night, in which the Indian jugglers pretend to grow and develop the hackàn, or *Yucca baccata*. This last night's performance is varied and interesting and all persons, including whites and Indians of other tribes, are permitted to witness it; but previously, for several days, mystic rites are celebrated in the medicine lodge, to the most of which only the initiated are admitted. Dr. Matthews remained ten days in the Indian camp at Niqotlizi, during which time the shamans admitted him into their medicine lodge and allowed him to observe their rites and practices.

His most interesting discovery on this occasion was that of their system of mythic dry paintings, by which they represent various legends or traditions with dry pigments on the sanded floor of the medicine lodge. A full account of the ceremonies and of the myth on which they are based was prepared by Dr. Matthews and appeared in the Fifth Annual Report of this Bureau.

When the ceremony at Niqotlizi was over he proceeded to a locality in Arizona called by the whites The Haystacks, from the peculiar appearance of the rock formations there. At The Haystacks another great ceremony, probably the second in importance of the Navajo rites, was to take place. Here he again encamped with the Indians and remained until the work of the shamans was done.

The ceremonial observances witnessed on this occasion are, collectively, called by the Navajo Klèdji-qaçàl, or chant of the night. They are called by the whites the Yàybichy dance, from the name of the principal masked character, Yèbitcai or Gebitcai, the granduncle of the gods. Like the hoshkawn dance, it has several days of secret rites with elaborate symbolic sand pictures and one night of public dances, less varied and interesting than those of the hoshkawn. Dr. Matthews was permitted to witness the whole performance and to take as many notes and sketches as were necessary.

From The Haystacks Dr. Matthews went to the Indian agency at Fort Defiance, Arizona, where he secured the services of one of the oldest and most learned (in their own peculiar lore) of the Navajo priests, and from him he obtained full explanations of all these rites and of the symbolism of the pictures and masked characters, with a complete recital of the long and elaborate myths on which the ceremonies depend, and the texts and translations of the very numerous songs which form the ritual of the ceremonies.

WORK OF DR. H. C. YARROW.

Dr. H. C. Yarrow, acting assistant surgeon U. S. Army, with the assistance of military details and supplies, in addition to the instruction and facilities provided by this Bureau, started, August 8, 1884, on an expedition into the Territory of Utah, with reference mainly to the exploration of burial mounds and the study of mortuary customs.

Near Choke Cherry Spring a burial cave was discovered, containing the skeletons of three persons, which were secured. Other skeletons, with contents of graves, were obtained near Willow creek; also, an interesting specimen of tree burial.

At Deep creek an explanation of the curious form of water burial was gained from a chief of the Gosiats, to the effect that the bodies of the turbulent and disorderly men of the tribe were thus disposed of to prevent the spirits of these objectionable persons from joining the rest of the tribe after death. Their bodies were sunk in springs and marshy places and kept down by sticks and stones, so that their spirits could never get out.

In the neighborhood of Fillmore a mound was excavated which afforded an admirable example of the beforementioned conversion of a dwelling into a sepulcher. The probability is that the deceased died in his house, which was made of adobe bricks, and that it was at once abandoned and the body left therein, the roof being first removed. The corpse was placed on the floor and covered with a paste of moist clay, on which were placed the mortuary gifts of weapons, utensils, and food. Cottonwood branches were then piled above and set on fire, thus baking the clay crust and charring the several objects. The whole structure had been covered, so that on first examination the hard surface of burnt clay, 18 inches below the loose earth, appeared to be the floor of a former dwelling.

In the whole of the expedition, which continued into the last days of September, much difficulty was experienced from the suspicion and consequent hostility of the Indians of the localities visited.

WORK OF DR. W. J. HOFFMAN.

Dr. W. J. Hoffman proceeded early in August to Victoria, B. C., where numerous sketches of Haida totem posts and carvings were obtained, in connection with the myths which they illustrated. At this locality attention was paid to the burial customs and osteologic remains of the nearly extinct tribe of Songish Indians.

XLII

At Port Townsend sketches were obtained of Thlinkit ivory and wood carvings, clearly indicating the adoption by that tribe of Haida art designs. Here, too, many Indians of British-American tribes were met on their way south to work in the Puyallup hop fields, notable among which was a large number of Haida, whose persons were examined for the purpose of copying the numerous and varied tattoo designs with which they were profusely decorated. Interpretations of many of these characters were obtained from the persons bearing them, as well as from the chief artist of the tribe, together with concise descriptions of the methods and customs in connection with tattooing and the materials used. Drawings were made of a collection of Eskimo pictographs and ivory carvings at the museum of the Alaska Commercial Company and the California Academy of Sciences, San Francisco, Cal.

At Santa Barbara, Cal., Dr. Hoffman discovered some painted pictographs and examined a number which have not yet been published. In several private collections at this place were found interesting relics of the Indians formerly inhabiting Santa Cruz island, the most important of which was a steatite cup containing earthy coloring matter and pricking instruments of bone, which had evidently been used in tattooing. Painted pictographs were also visited in the Azuza cañon, twenty-five miles northeast of Los Angeles.

At Tule Indian Agency, in the deep valleys on the western slope of the Sierra Nevada, sketches of pictographs were made in continuation of work accomplished there two years before. Vocabularies were also obtained from the Waitchumni Indians here located, as well as from the few remaining Santa Barbara Indians at Cathedral Oaks, Santa Barbara county, Cal. By far the greatest amount of pictographic material was collected in Owen's valley, California, where series of petroglyphs are scattered over an arid, sandy desert, the extremes of which are more than twenty miles apart.

The work upon a synonymy of the Indian tribes of North America, which has been mentioned to some extent in former reports, has been continued with increased energy.

Every tribe of Indians of any size and importance has been treated of by historians under a variety of names. The sources of these different appellations are manifold. In very many instances the names of tribes or other bodies of Indians communicated by themselves have been imperfectly understood and erroneously recorded; misspelled names and typographical errors have been perpetuated.

Traders, priests, and colonists have called the same tribes by different names and the historian has often added to the confusion by handing down these synonyms as the names of other and different tribes. Not a few tribes well known under established names have received new names upon a change of residence, especially when they have removed to a great distance or have coalesced or allied with other tribes. Added to these and to other sources of confusion are the loose and dissimilar applications of the terms clan, band, tribe, confederacy, and league, the same term having been used with various meanings by different authors.

As a consequence the student of Indian languages and customs finds himself in a tangle, as regards tribal names, which it is beyond the power of the individual worker, unaided, to unravel. The scope of the work in question includes the attempt to trace the several names back to their sources and to ascertain their original and proper application, to define their meaning when possible, and to relegate each tribe under its proper title to the linguistic family to which it belongs. In the completion of this work the whole force of the Bureau assists.

The need of a volume giving the results mentioned has long been felt, and it is believed that it will prove to be one of the most important contributions to the accurate study of Indian history ever made. The classification of the languages of the North American Indians is closely connected with the synonymy of tribal names, each work assisting the other. During recent years the number of students who have directed their attention more or less exclusively to the study of Indian languages has been constantly augmented, and as a result of their labors the number of vocabularies has been correspondingly increased; hence the demand for a more comprehensive and satisfactory classification than now exists.

XLIV

Prior to Gallatin's time little or nothing had been done in the direction of a systematic classification of Indian languages. In 1836 Gallatin issued his treatise in which he classified all the languages which he was able to study by a direct comparison of vocabularies. His classification was an immense advance over anything previously done and has proved a boon for scholars, having served, indeed, practically as the basis for most of the work in the same line performed since his time. No fixed rules of nomenclature, however, have ever been adopted by linguistic writers, and authors have named and renamed linguistic groups without regard to the names imposed upon the same or similar groups by earlier writers. As a result great confusion has followed not only respecting the status of the various linguistic families, but also respecting the identity of the languages which have served as a basis for the several groups proposed. The remedy for this state of affairs is the adoption, with strict adherence thereto, of a code of nomenclatural rules similar in scope to those prevailing among zoölogists.

There would appear to be no good reason why the rule of priority of name, for instance, should not be followed in linguistic as well as in zoölogic classification, or why the same beneficial result of fixity of nomenclature should not be expected to result from the adoption of this rule in the one case as in the other. Students who may attempt to unravel the many perplexing nomenclatural problems arising from unnecessary change of names will certainly agree that such a rule is no less desirable in linguistics than in zoölogy.

Accordingly, the rule of priority of name, within certain limitations, together with some other rules, has been adopted by the Bureau. These limitations and rules, together with a discussion of the subject, which would still be premature, may be presented by the Director in his next annual report.

XLV

Mr. H. W. HENSHAW, when not in the field, was specially engaged in the organization and details of the office work upon tribal synonymy and linguistic classification above described. A careful examination of all the literature pertaining to these correlated subjects was necessary and also the preparation of tentative tables of synonymy. He has prepared such tables and made in connection with them a brief historical résumé of the literature. Much longer time and the work of the whole official force will, however, be needed for the completion for publication of the results of this vast and complicated undertaking.

Mrs. ERMINNIE A. SMITH was occupied, while not engaged in the field as reported above, in the revision for publication of her Tuscarora dictionary, the material for which had been collected during several years.

Col. GARRICK MALLERY continued the collection and classification of material on the two correlated subjects of sign language and pictographs. His two preliminary papers on those subjects have appeared in former annual reports. It is intended, while increasing the data obtained from the Indian tribes of North America, bearing upon these subjects, to supplement and illustrate the mass of information collected from those tribes by comparison with everything of a similar character to be found in other parts of the world and to publish the results of the collection and study in the form of monographs.

Dr. W. J. Hoffman, when not in the field, continued to assist in the work mentioned.

Mr. JAMES C. PILLING'S preparation of the Bibliography of North American Languages continued during the year. In October and November he visited several libraries in Boston and Providence, for the purpose of clearing up a number of doubtful points. During the year pages 839-1135 were received from the printer, which completed the volume. In the spring a limited number of copies were struck off by the Public Printer, and these have been sent to various libraries, public institutions, and to individuals interested in the subject, for the purpose of obtaining additions and corrections, with the intention, if these should prove to be numerous, of resetting the matter.

XLVI

Mr. FRANK H. CUSHING was stationed at Washington at the commencement of the fiscal year and was engaged in the classification of his field material in preparation for its publication. During the fall he completed a short paper on Zuñi culture growth as evidenced by studies of Pueblo ceramics, which was published in the Fourth Annual Report of the Bureau. In this paper he maintains, with a large amount of linguistic evidence, that the Zuñi culture is mainly autochthonous, and that its growth, especially the growth of architectural, agricultural, ceramic, and other arts and industries pertaining to it, has been largely accomplished within the desert areas of America which still form the habitat of the Pueblo Indians, and probably, also, within a period more limited than has usually been supposed essential to such development.

He prepared also a paper on the "Ancient province of Cibola and the seven lost cities," in which he not only identifies the seven cities of Cibola above referred to with seven ruins near the present Zuñi village, but also furnishes interesting examples of the permanence of Indian tradition and of its value, when properly used, as a factor, in ethnographic and historic research.

Among the later and perhaps more important results of his studies during the year are investigations of the myths and folk tales abundantly recorded by him during previous years among the Zuñi.

By the extended comparison which he is able to make between these folk tales and myths, now first brought together as a whole, and by the application to their study of the linguistic method employed by him in the preparation of the two papers already mentioned, he is able to trace the growth of mere ideas or of primitive conceptions of natural or biotic phenomena and of physical or animal function into the personæ and incidents which go to make up myths, as well as to trace the influence of these growths on the worship of the Zuñi.

Early in 1885 Mr. Cushing furnished the Director with a schedule of his manuscript, notes, and sketches, and from an examination of this it was deemed advisable that he should continue putting his linguistic material into permanent shape, in order that it might be used as a check on ensuing studies of the sociology and mythology of the Zuñi, as well as for its suggestive value towards the explanation of obscure passages in those departments of study. This work had progressed but little, however, when a severe illness necessitated its temporary abandonment.

XLVII

Prof. CYRUS THOMAS, in addition to his administrative duties in charge of the division of mound exploration, was engaged in preparing for publication the results of the operations of that division. The constant arrangement, comparison, and study of the material objects and facts ascertained required his close application. He also commenced the paper presented by him in this volume.

Mr. VICTOR MINDELEFF, in the first part of the fiscal year, completed models of the seven villages of the ancient Province of Tusayan, together with a relief model illustrating the topographical character of the province. The model of Walpi, of this series, was carried out in such a manner as to show on a large scale the character of the rocky mesa on which the town is built. Several types of cliff ruins were also modeled for this series, among them the White House ruin of Cañon de Chelly and the mummy cave of Cañon de la Muerte. After August 1 this work was carried on under the supervision of Mr. Cosmos Mindeleff, who also prepared a model of the great Etowah mound from the data of Mr. V. Mindeleff's survey; he also furnished several other examples of mounds, with sections, under the direction of Prof. Cyrus Thomas. This work was carried on without interruption until December 7, when Mr. Cosmos Mindeleff was ordered to New Orleans, to take charge of the combined exhibits of the U. S. Geological Survey and the Bureau of Ethnology, and was instructed to look after the proper installation of the same in the Government building. He returned to Washington about February 1. During the ensuing four months the small force in the modeling room was engaged in making models of the ancient pueblos of the Chaco, from the plans secured during the preceding summer, as referred to in the report of field work. This work continued until early June, when Mr. C. Mindeleff was again ordered to New Orleans to take charge of the packing and shipment of the exhibits of the Geological Survey and Bureau of Ethnology for their return to Washington and for the installation of a portion of the material at the Louisville Exposition. During the interval from February 1 to June 15 Mr. Victor Mindeleff was engaged in the preparation of a report on the architecture of the ancient provinces of Cibola and Tusayan, together with the plans and diagrams necessary for its illustration. This study was based on the large amount of data that had been secured during former field seasons for modeling purposes.

XLVIII

Rev. J. OWEN DORSEY, when not in the field, made nearly 10,000 entries for the Cegiha-English dictionary, and prepared Ponka and Omaha native texts, with free and interlinear translations, in addition to those found in part 1 of vol. 6, Contributions to North American Ethnology. After December 1, 1884, he collated the following vocabularies obtained by him in Oregon, viz: Takelma, Shasti, Applegate Creek, Chastā Costa, Galice Creek, Mulluk, Siuslaw, Lower Umpqua, Yaquina, Klikitat, and one on Smith River, California. He also prepared a list of the villages obtained from the tribes at the Siletz Agency, Oregon.

Mr. ALBERT S. GATSCHET was engaged at the beginning of the fiscal year in revising and perfecting his grammar of the Klamath language of southern Oregon. The phonology was completed and stereotyped, extending from page 200 to 245. He was engaged in correcting proofs of the

subsequent section on morphology when he proceeded to the Southwest, as elsewhere reported, to investigate several languages spoken there, the affinities of which had not before been ascertained.

Mr. W. H. HOLMES, as in previous years, has supervised the illustrations of the Bureau publications. He also continued his archæologic studies, chiefly in the department of ceramics, the character of which is shown by his papers in this volume. He was in charge of the preparation of exhibits for the expositions at New Orleans, Louisville, and Cincinnati; but, owing to the pressure of other duties, much of this work was intrusted to Mr. Cosmos Mindeleff, who was assisted materially by Mr. Victor Mindeleff. The most important feature of the exhibits consisted of models of plaster and papier mâché of the pueblo towns and cliff houses of New Mexico and Arizona.

XLIX

Aside from the models, exhibits of ethnologic and archæologic materials were made. A large and important collection of objects of pueblo art was obtained by Mr. James Stevenson, but much of it failed to reach Washington in time for exhibition purposes, and a series of similar objects, already classified and labeled, was selected from the National Museum and forwarded to New Orleans. A valuable collection of the ancient fictile products of Tusayan belonging to Mr. Thomas Keam was also utilized in perfecting the exhibits of Pueblo art.

Archæologic materials from other sections of the country were placed on exhibition, notably a superb collection of prehistoric relics from the province of Chiriqui, Panama, which was purchased for the purpose.

The collections of ethnologic and archæologic material made during the year are of unusual importance and magnitude. This is chiefly due to the facilities afforded by the New Orleans Exposition fund, a liberal portion of which was devoted to the collection and purchase of objects of permanent value to the Government and to science. The collections made by Mr. Stevenson in Zuñi and Acoma comprise upward of four thousand pieces, chiefly objects of clay, but including other classes of products. The collection of prehistoric relics obtained by Mr. J. A. McNiel from the tombs of Chiriqui is one of the most important and complete series of ancient American products to be found in any country, and must prove of great value to students.

Mr. Victor Mindeleff secured a small series of relics from the ancient ruins of northern New Mexico and Arizona, and Dr. H. C. Yarrow added some objects of archæologic and ethnologic interest from central Utah. Mrs. Erminnie A. Smith procured a number of articles of shell, illustrating the modern manufacture of wampum in New Jersey; a small collection of fragmentary pottery from the eastern shore of Maryland was presented by Mr. Joseph D. McGuire, of Ellicott City; and Mr. Holmes secured a series of articles, including arrowheads, shell implements, and pottery, from the island of Nantucket. Mound explorations, conducted by Dr. Cyrus Thomas, yielded a valuable series of objects of stone and clay. An unusually interesting series of the earthen vessels of the ancient pueblo races was secured by Mr. E. W. Nelson in eastern central Arizona. The greater part of the abovementioned material has already been catalogued and turned over to the U. S. National Museum.

L

Dr. H. C. YARROW, acting assistant surgeon, U. S. Army, besides his field explorations described, continued to collect information relative to the mortuary customs of North American Indians. Of the material gathered, a considerable portion has been forwarded by various persons throughout the country in answer to the circular sent out early in the last year, but much has also been derived from the published works on anthropologic subjects, including scientific journals and reports. Numerous authorities have been consulted and much time has been devoted to the consideration of the many theories advanced to account for certain peculiar rites and customs.

Mr. CHARLES C. ROYCE continued during the year the preparation of a historical atlas of Indian cessions. The boundaries of the various cessions of land by the different Indian tribes were traced out and located upon the maps of the States and Territories left uncompleted at the date of the last annual report. All that remains to be done in completing the atlas for publication is to transcribe, with considerable elaboration, the historical and descriptive notes pertaining to the various cessions, and to make, from the rough working sheets, legible copies of the maps showing the boundaries of the cessions within the States of California, Oregon, Nevada, and Texas and the Territories of Washington, Idaho, Montana, Wyoming, Utah, New Mexico, Arizona, and Dakota. Most of these States and Territories will each require two maps, showing respectively the primary and secondary cessions. The work will be finished as rapidly as possible.

LI

ACCOMPANYING PAPERS.

The present volume contains papers the subject matter of which may be classified under the grand divisions of Technology, Philosophy, Sociology, and Ethnography.

They are all prepared by experts of recognized authority in their several lines of research and are illustrated to the degree required by the text for full understanding, the number of figures presented being 548, besides ten full page plates. Special mention of each of these papers follows in their order as printed.

ANCIENT ART OF THE PROVINCE OF CHIRIQUI, COLOMBIA, BY WILLIAM H. HOLMES.

The archæology of Chiriqui should be studied, not only for comparison with that of the territory comprised in the present political divisions of North America, but because geographically the province should be considered as a part of the North American continent. Until recently this isthmian region was little known, the explorations for railroads and canals having furnished the first valuable accounts of its modern inhabitants and the relics left by former occupants.

The National Museum now contains a large and precious collection of archæologic material from the province, chiefly obtained by Mr. J. A. McNeil during years of enthusiastic labor. The information derived and the lessons to be learned from this collection, together with all particulars relating thereto gathered from other sources, are now presented in this paper by Mr. W. H. Holmes. His work in the classification of the immense number of objects and in the elucidation of their functions, material, construction, forms, and decorations has been careful and comprehensive. His manifest success has been owing to his artistic insight and skill as well as to his archæologic training. His ability in both fields can be appreciated by an examination of the 287 illustrations in his paper, considered not only as to their number, but as to their instructive arrangement in his text. LII

The objects of ancient art found in Chiriqui are, as elsewhere in North America, derived almost entirely from graves. The cemeteries, apart from their contents and the mode of sepulture, constitute in themselves topics of interest which are discussed and illustrated in the paper. Another curious feature is that the objects buried generally appear to have been manufactured for mortuary purposes and not for use by the living. A general review of the contents of the graves shows that the ancient inhabitants were skillful in the manipulation of stone, gold, copper, and clay, and tombs of undoubtedly great antiquity yield evidence of long continued culture.

It also appears that, while the art of the old peoples of the isthmus can in some respects be connected with that of adjacent regions in North America, in others it is remarkable for individuality. Ornaments of stone were seldom used by them and those of gold and copper were common. The articles of gold which the graves have yielded in large quantities to explorers during the last quarter of a century, and for which only they have until recently been searched, have generally been considered to be mere ornaments, but they probably had a fetichistic origin.

It is remarkable that no weapon, tool, or utensil of metal has been noticed. The objects were generally formed by casting in molds, which was done with considerable skill, and gilding, or at least plating, was practiced. The art of alloying also appears to have been understood.

The use of metals does not appear early in the order of technology, and an advanced degree of culture is generally attained before the casting of any metal is attempted. Without allowing too much weight to any argument based upon the surprising skill of these people in plating and alloying, the evidence of technical skill in general, together with the conceptions embodied in their art, proves conclusively that it was the product of a long period of experiment and progress.

The pottery of Chiriqui is to be noted for the perfection of its technique, its high specialization of form, and its conventional use of a wide range of decorative motives. Its forms present many striking analogies to the wheel made ware of the Mediterranean, regarded as classic. LIII

The mythologic stage of the builders of these graves is shown by the fact that in their ceramic art there is no attempt to render the human face or figure with accuracy. The personages of their religious philosophy were zoöomorphic and some of their forms may be discerned by a skillful analyst in or on all the ornaments and vessels. On each of the latter all decorative devices and delineations have some reference to the mythic creature associated with the vessel and its functions.

Mr. Holmes has made an important discovery in the evolution of decoration in Chiriqui from which are deduced instructive generalizations of wide application. All the decorations originate (doubtless under the influence of the stage reached in mythologic philosophy) in life forms of animals, none being vegetal. Coming from mythologic concepts they are significant and ideographic, and coming from nature they are primarily imitative and non-geometric. Nevertheless the agencies of modification inherent in the practice of art through its mechanical conditions are such that the animal forms early employed have changed into conventional decorative devices, among which are the meander, scroll, fret, chevron, and guilloche.

That this was the course of evolution of the classic forms of ornaments is not asserted; indeed, it is not necessary to form such a hypothesis, as by the interacting principles, well classified by Mr. Holmes, the course by which the same result was accomplished may have been wholly diverse. It is, however, shown that this was in all probability the particular and independent course in one region of America, being in that respect in distinct contrast to other art regions, such as that of the Pueblos, where the rise of geometric figures through technologic channels is equally obvious. It follows that in seeking to divide peoples by the criteria of their decorative arts the examination must embrace what is far more fundamental than a mere comparison of their finished products: these may be and are markedly similar without any evidence of transmission, and when in fact by deeper study the ascertained separate courses of development preclude such transmission. LIV

A STUDY OF THE TEXTILE ART IN ITS RELATION TO THE DEVELOPMENT OF FORM AND ORNAMENT, BY W. H. HOLMES.

For several years Mr. Holmes has been engaged in the study of the ancient and existing art of the North American Indians, and has published in the annual reports of this Bureau a number of elaborate essays upon the art of specified peoples and regions.

In the present paper he submits the comprehensive results of his studies in one great branch, the textile art, and treats chiefly of its esthetic relations as distinct from those of construction and function, so far as they can be separately discussed.

He has been fortunate in the character of the material studied. In America there is yet found a great body of primitive, indigenous, and independent art, almost uncontaminated by the complex phenomena, processes, and conditions which elsewhere obscure its origin and development. To a knowledge of American art acquired by long study Mr. Holmes adds a mental equipment exceptionally qualifying him for its philosophic discussion. His conclusions therefore, presented with ample evidence and explained by illustrations, are to be received as those of a recognized authority, although they may disturb some sentimental and metaphysical fancies concerning abstract beauty in form, color, and design.

It is not contended that the earliest concepts of beauty originated with textile art. On the contrary, it is probable that the first esthetic attempts were in the line of personal decoration, such as paints on the skin and pendants and feathers disposed about the person. But as the textile art appears early and widely in culture it is believed that the association of esthetic concepts with it very generally preceded their association with other arts. Having thus the start in the field, its nature was full of suggestions of embellishment, while it was fixed in its method of expression. The technique therefore shaped and directed the esthetic concept and became the parent of much geometric ornament.

Mr. Holmes gives an instructive analysis of the forces and influences inherent in the textile art, the first lessons of which are order, uniformity, and symmetry; he shows how the necessities of technique determine ideas of the beautiful in linear geometric forms and how taste in selecting certain ornaments as the most beautiful is simply choosing that product which in the evolution of art gave it character and power.

The influence of textile ornament upon other forms of art, such as architecture and sculpture, is discussed, as also the manner in which extrinsic decorative elements are remodeled in accordance with the rules of textile combination. The paper, however, does not undertake to cover the whole field of the development of form and ornament, being confined to the relation of the textile art thereto, and similar studies in all other grand divisions of art must be made before the relative importance of all their forces and tendencies can be estimated. But the laws of evolution in all art closely correspond, and the present paper is eminently instructive to all students of the esthetic.

AIDS TO THE STUDY OF THE MAYA CODICES, BY CYRUS THOMAS.

That Prof. Cyrus Thomas has long been engaged in the examination of the few Maya records in existence is known from his former works, "A study of the Manuscript Troano" and "Notes on certain Maya and Mexican manuscripts," both published by the Bureau of Ethnology.

The object of the present paper is to give information of some original discoveries and to present some explanations not brought forward by Professor Thomas in his former papers.

The records of Maya and Mexico yet challenge students with unsolved problems similar to those which in the writings of Egypt and Assyria have perplexed so many generations. The translation of the paleographic literature of this continent may be expected to throw light on the past of America, in some degree reproducing the brilliant result which has attended the translation of the hieroglyphs of the eastern hemisphere. Long and laborious comparisons, together with the trial of successive hypotheses, will be necessary to the decipherment of our aboriginal manuscripts, and but few competent persons are actively engaged in the work. It becomes, therefore, the duty of any one whose discoveries tend to clear up even minor points of the great problem to furnish them to his fellow laborers, and thereby limit the remaining field of investigation. In this paper Professor Thomas supplements his former work.

OSAGE TRADITIONS, BY REV. J. OWEN DORSEY.

This paper contains an account of a secret society of seven degrees, still existing among the Osage, in which the traditions of the people have been preserved. The author, by his skill and personal influence, has obtained and now furnishes two of these traditions in the original language, with an interlinear and a free translation of each and with explanatory remarks.

The traditions are both cosmologic and sociologic, and are admirable examples of Indian philosophy. The existence of secret associations, periodically celebrating religious mysteries, and of shamanistic orders, which, by ceremonies, pictographs, and chants, have preserved in more or less purity the traditions of their ancestors, has been vaguely known for some years, but until lately no accurate or indeed intelligent account of them has been secured.

The exertions of several of the officers of this Bureau have been successful in obtaining full details and clear explanations both of the traditions and the ceremonials of several of the Indian tribes, notably those of the Zuñi and the Navajo, published in former annual reports. The present paper by Mr. Dorsey takes an important place in this new collection of materials for the study of Indian philosophy, from which valuable results have been already acquired.

THE CENTRAL ESKIMO, BY DR. FRANZ BOAS.

For the express purpose of personal exploration and examination, the author of this important paper spent a considerable time in the region of which he treats. His course of travel was to Cumberland sound and Davis strait. The grand division of the Eskimauan linguistic family, inhabiting nearly the whole range of the Arctic-American coast, which has been classed as Central Eskimo, occupies the northeastern part of the continent and the eastern islands of the Arctic-American archipelago. It inhabits, at Smith sound, the most northern countries in which man has been known to dwell. Its southern and western boundaries are about Fort Churchill, the middle part of Back river, and the coast west of Adelaide peninsula.

LVII

Dr. Boas gives an admirable account of the topography of the region and of the distribution, tribal divisions, and numbers of the inhabitants. His work is replete with valuable statements in minute detail and with acute suggestions regarding their habits and customs. Their peculiar and ingenious weapons, implements, and utensils are fully described and illustrated. His account of their religious practices and beliefs, supplemented by translations of their myths and legends, is equally entertaining and instructive.

In connection with his observations made through original research, Dr. Boas presents the result of a close study and analysis of the work of former explorers in this field, by which his contribution to the study of this interesting hyperborean people will command additional attention.

FINANCIAL STATEMENT.

Table showing amounts appropriated and expended for North American ethnology for the fiscal year ending June 30, 1885.

Expenses.	Amounts expended.	Amount appropriated.
A. Services	\$30,433.55	
B. Traveling expenses	3,716.14	
C. Transportation of property	354.12	
D. Field subsistence	198.42	
E. Field supplies and expenses	535.45	
F. Field material	197.71	
G. Instruments	49.25	
H. Modeling material	40.11	
I. Photographic material	306.71	
K. Books and maps	355.85	
L. Stationery and drawing material	15.70	
M. Illustrations for reports	668.64	
N. Articles for distribution to Indians	23.69	
O. Office furniture	59.67	
P. Office supplies and repairs	36.61	
Q. Manuscripts	395.00	
R. Correspondence	15.43	
S. Specimens	71.00	
T. Collection of material for classification of the Indians in the United States	1,326.61	
Balance on hand to meet outstanding liabilities	1,200.34	
	40,000.00	\$40,000.00

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