Mason (O. T.)

10

SATURDAY LECTURES.

No. 2.

# WHAT IS ANTHROPOLOGY?

A LECTURE

Delivered in the National Museum, Washington, D. C.,

MARCH 18, 1882,

—BY—

OTIS T. MASON.

SURGEON GENERAL'S OFFICE
161
LIBRARY

PUBLISHED AND SOLD BY JUDD & DETWEILER. Price 10 cts.

COPYRIGHT SECURED.

Pam

# THE SATURDAY LECTURES.

## PROGRAM.

March 11.—Prof. THEO. GILL,
Scientific and Popular Views of Nature Contrasted.

March 18.—Prof. OTIS T. MASON,
What is Anthropology?

March 25.—Prof. J. W. CHICKERING, Jr.,
Contrasts of the Appalachian Mountains.

April 1.—Major J. W. POWELL,
Outlines of Sociology.

April 8.—Prof. C. V. RILEY,
Little Known Facts about Well Known Animals.

April 15.—Dr. ROBERT FLETCHER,
Paul Broca and the French School of Anthropology.

April 22.—Prof. WILLIAM H. DALL,
Deep-Sea Exploration.

April 29.—Dr. SWAN M. BURNETT,
How we See.

# LECTURE.

LADIES AND GENTLEMEN:

The course of lectures now progressing in this hall has for its design the bringing about of a better understanding between scientific specialists and intelligent readers and thinkers. With this object clearly before me I shall endeavor, as well as my limited time will allow, to give such an explanation of Anthropology that my hearers will comprehend the extent and boundaries of its territory and the various operations which constitute its daily life.

The word anthropology, from *anthrōpos*, man; and *logos*, science, has run through a great variety of meanings, as those who have pursued it have shifted their ground or extended their researches. From 1501 to 1700 the word was used to signify "the study of the laws which govern the union between the body and the mind." In some theological seminaries it signifies "that manner of expression by which the inspired writers attribute human parts and passions to the Divine Being." In Dr. Hodge's "Theology," all that relates to man is called Anthropology. In 1772, Diderot and D'Alembert defined it as "a treatise upon man." In 1788, Kant wrote a work entitled "An Essay upon Anthropology." Latham in his "Natural Varieties of Man," (Lond. 1830, p. 559,) says, "Anthropology determines the relations of man to the other mammalia; ethnology, the relations of the different varieties of man to each other." In the schools of Germany up to a very few years, the term covered only what is included in the third sub-division of the subject given on page 5 of this lecture. Not so now. Paul Broca tells us "Anthropology has for its object the study of humanity in its entirety, in its details, and in its relation with the rest of nature."

Anthropology, therefore, while it excludes much that is human, includes whole territories of knowledge that are not

directly human. Biography, as such, is not anthropology, unless it connotes generic data. History, the biography of political societies, is only anthropological so far as it is not merely biographical.

Physicians were the first and are now the best anthropologists, yet not all in medicine belongs to the science. The same is true of every other profession and craft of men and women under the sun, each has in it a great deal that is not, but more that is anthropological.

Anthropology is the natural history of man in its widest sense. It embraces all that we mean by such terms as humanity, mankind, the human species, human nature. Nay, more. As we cannot study any species as a detached group, so we must include in our science all those natural objects, relations, forces, and facts, that have furnished the material, the impulse, or the limitation to human progress.

What human events and products are anthropological? I answer, those that are human, generic, tribal, capable of scrutiny over large areas, by statistics or by instruments of precision; whatever is customary, whatever can be shown to be a child of the past or a parent of the future. Eliminating those local eddies of thought and action which begin and end with the individual, and which constitute his biography, it takes notice only of those great currents of human phenomena that echo round the world. It therefore both *includes* and *excludes*,—includes, and day by day increasingly—all phenomena, material and psychical, related to the development of our race; excludes even human activities that are only the dust upon the mosaic of civilization.

By what methods does the anthropologist prosecute his work? I answer, by the most vigorous and exacting methods. By careful observation of multitudes of facts, by judicious discrimination of those marks which have true scientific value, by careful induction or classification, by cautious and modest deductions he plods his weary way.

Who may be an anthropologist? Every man, woman, and child that has sense and patience to observe, and that can honestly record the thing observed. There is not

another science that has not been maid of honor to this queen of sciences. If the rank of any branch of knowledge is to be judged by the intrinsic value of its object-matter, and by the number of other sciences ancillary to it, then anthropology must be advanced to the head of the line,—having no less a function than to explore the secrets of man's origin, progress, and destiny.

Having said thus much upon the scope and intension of anthropology, it becomes us to examine its sub-divisions, which represent especially the various classes of men engaged in its pursuit.

## THE DIVISIONS OF ANTHROPOLGY.

I. The origin of man, inquiries into the time and the location of that event, as well as the natural processes involved, and his pristine condition. ANTHROPOGENY, (*Anthrōpos*, man, and *genea*, descent.)

II. The early history of the race. ARCHÆOLOGY, (*Archaios*, ancient, and *logos*, science.)

III. The human species as a member of the animal kingdom. ANTHROPO-BIOLOGY, (*Bios*, life, the life history of mankind.)

IV. The races of men, descriptive=ETHNOGRAPHY; deductive=ETHNOLOGY, (*Ethnos*, people, and *grapho*, to describe, or *logos*, science.)

V. Mind in the lower animals and in man. PSYCHOLOGY, (*Psuchē*, the soul, and *logos*, science.)

VI. The origin, growth, and diversity of language. GLOSSOLOGY, (*Glōssa*, a tongue, and *logos*, science.)

VII. The elaboration of human art and industries. TECHNOLOGY, (*Technē*, art, and *logos*, science.)

VIII. Social structures and functions. SOCIOLOGY, (*Socius*, an associate, and *logos*, science.)

IX. Beliefs and practices with reference to the spirit world. COMPARATIVE MYTHOLOGY.

X. The relations of the physical universe and social environment to human history. HEXIOLOGY, (*Hexis*, habit, and *logos*, science.)

By your permission I will now take up briefly these divisions and state, not what my own opinion may be, but the struggles and the difficulty which engage the students of anthropology the world over.

## I.—*Anthropogeny.*

The great battle which has been fought with reference to the origin and the antiquity of the universe, is now being repeated with reference to the origin of man. As in astronomical observations each observer has his personal equation, which must ever be kept in view by those who would utilize his material, so into this discussion have men brought their theistic conceptions. We have, therefore, many theories of man's origination, a few of which I will give you.

I. Special creation by Almighty fiat.

II. Atheistic agnosticism, (*a* not, and *gnōsis*, knowledge,) denies the Creator, and affirms ignorance of man's origin.

III. Theistic agnosticism. Affirms the Creator, but denies knowledge of the method of human origin.

IV. Pantheism, (*pan* all, and *theos* god). God is all and all is God.

V. Atheistic Darwinism. Denies the Deity and affirms natural selection as the cause of nature.

VI. Theistic Darwinism, (God not immanent.) Affirms the Deity, but denies his constant presence.

VII. Theistic Darwinism, (God immanent.) Affirms the Deity, and also his presence ever in his works.

VIII. Agnostic Darwinism. Affirms natural selection and ignorance of a Creator.

There are five distinct questions regarding the origin of man which nearly everybody confounds. They are as follows:

I. By which of the processes indicated above did the human species have its origin? Were they created, or did they descend from some ape-like ancestry.

II. When did that event take place? Was it six thousand years ago? Was it just on the hither verge of the latest geological epoch? Was it at the end of the glacial epoch, in its middle, or just before its beginning, or was it further back, at the beginning of the Tertiary that the first being worthy to be called a man appeared on earth? It would take far more than my hour to discuss this question of the antiquity of man alone, and, furthermore, I am not invited to discuss, but to define.

III. The third inquiry is, where did the first man alight upon this planet?

According to Moses and Haeckel, followed by nearly all modern anthropologists, our first parents lived somewhere near the Persian Gulf. But there is hardly a spot of the habitable globe that has not been looked upon as the favored birthplace of man. As no question in science is closed as yet, if anyone of my hearers is disposed to have his pet theory regarding this matter he will not be excommunicated so far as I am concerned.

IV. Bordering closely upon the last query, and affecting it, is the problem of the unity of the species. We are all aware that our distinguished countryman, Dr. Morton, followed by Agassiz and many others, held that our species had its origin, not in one, but in several creations. The weight of authority at the present time is in favor of a single origin. Professor Henry wrote, in 1866, "The spontaneous generation of either plants or animals, although a

legitimate subject of human inquiry, is as yet an unverified hypothesis. If, however, we assume that a living being will be spontaneously produced when all the physical conditions necessary to its existence are present, we must allow that in the case of man, with his complex and refined organization, the fortuitous assembly of the multiform conditions required for his appearance would be extremely rare, and from the doctrine of probabilities could scarcely occur more than at one time and at one place on this planet."

V. The last question concerning the origin of man is well represented in the controversy of Sir John Lubbock with Archbishop Whately. The former maintained that man was at first a low savage, and that the course of history has on the whole been a progress towards civilization. According to the latter, man has always been pretty much what he is at present.

## II.—*Archæology.*

Bordering close upon anthropogeny is archæology, whose province it is to discuss the first efforts of the last child of nature to walk forth into the broad world. The data are far from complete, but are becoming more adequate to show the advance from rude stone to polished stone, to bronze, and finally to iron, as the material of human implements.

In this study the geologist, the linguist, the anatomist, technologist, and the sociologist meet to reconstruct priscan society. As the present epoch epitomizes all preceding epochs of the world in its fauna; so does the *ensemble* of humanity to-day comprehend all past histories. It is no more difficult to reconstruct an ancient tribe from a few human bones and implements than for the comparative anatomist to re-edify an extinct animal from a few of its fossil remains. I could give you no more convincing proof of what I say than to invite you to study carefully Professor Rau's archæological collection, in the Smithsonian Building.

### III.—*Anthropo-Biology.*

So far as man resembles the living beings around him, reproduces his kind, grows from infancy to maturity, is amenable to the laws of material nature, dies and returns to inorganic matter, he is an animal. Again, a minute comparison of his body with that of animals shows a striking resemblance, if not genetic relationship. But my flitting hour would warn me from this tempting field even if I did not know that Dr. Fletcher's lecture would be devoted entirely to this division of anthropology.

### IV.—*Ethnology.*

Thus far we have spoken of all mankind. We come now to inquire what notice anthropology takes of the varieties of men. At first thought you would say that it is the easiest matter in the world to distinguish a white man, a negro, an Indian, a Chinaman, and a brown Malay. As we were told in Dr. Gill's lecture, popular notions are altogether at fault. If we could stand all the men of the world in a row, it would be possible to arrange them in such a manner that you could not tell where one race left off, and another began, and yet students of art have always recognized race characters. Two thousand years before Christ, the Egyptian sculptors faithfully portrayed the Negro, the Semite, and the Egyptian countenance.

The same theories that have been relied on to explain the origin of man, have been invoked to explain the diverse races. By various gateways students have sought to enter the mystery,—by the color of the skin, the section and appearance of the hair, the facial angle, the ratio of the length to the width of the skull, the projection of the jaws, language, customs, beliefs, etc. Now I am sure that all present are too scientific to suppose for a moment that mere classifying is science. If I were to separate you by your dress, or facial beauty, or residence in the city, such arrangement would have no value whatever. A true scientific classification is based, first, on immutable attributes, and,

second, seeks to ascertain relations, affinities, and consanguinity. Linnæus (1741–1783) made four divisions of man, Blumenbach (1752–1840) established the five classes which are kept up in our geographies to this day. I should only weary you repeating catalogues of authors and their schemes of mankind. I give you a table by the latest authority, Dr. Topinard, based on the hair, the skull, and the complexion, (Paul Topinard, Revue d'Anthropologie, 1878, p. 509.) It is very far from satisfactory, however, and the classification of mankind is still an open question.

| | | | | |
|---|---|---|---|---|
| Hair round in section, straight. | Dolichocephalic,* (long-heads.) | . . . . . | | Eskimo. |
| | Brachycephalic, (short-heads.) | Red. | | Red-Skins. |
| | | Olive. | | Mexicans and Peruvians. |
| | | Yellow. | | Guaranis, Caribs. |
| | | | | Samoycedes. |
| | | | | Mongols, Malays. |
| Hair roundish in section; waved, frizzed. | Dolichocephalic, (long-heads.) | Blonde. | | Cimmerians. |
| | | | | Scandinavians. |
| | | | | Anglo-Saxons. |
| | | Brown. | | Mediterraneans. |
| | | | | Semites. |
| | | Black. | | Australians. |
| | | | | Indo-Abyssinians. |
| | | Red. | | Foulbes. |
| | | | | Red Barabras. |
| | Brachycephalic, (short-heads.) | Blonde. | Hair. | Fins. |
| | | Chestnut | | Celts, Slavs. |
| | | Brown | | Iranians. |
| Hair elliptical in section, woolly. | Dolichocephalic, (long-heads.) | Yellowish | | Bushmen. |
| | | Black. | | Papuans. |
| | | | | Caffres. |
| | Brachycephalic, (short-heads.) | Black. | | Negritos. |

* Dolichocephalic = *dolichos*, long, and *kephalē*, head; brachycephalic = *brachus*, short, and *kephalē*, head. The angle of the jaw gives rise to orthognathous = *orthos*, erect, and *gnathos*, jaw; and prognathous = *pro*, forward, and *gnathos*, jaw. See Topinard's "L'Anthropologie," Paris, 1876, pp. 254, 261, 299.

I may say, however, that Russia, Austria, Germany, France, England, and the United States have each organized special bureaus for the minute examination of the peoples within their limits.

### V.—*Psychology.*

What has anthropology to do with metaphysics? Just two things. The science of metaphysics itself has had a history. Men did not always look upon the intellectual faculties as they do now. The evolution of psychological studies is certainly as interesting as the life history of any living thing. But, again, mind is born and grows; there are race psychologies as well as race anatomies; and the whole human intellect has had its progress by stages. Every mother before me, had she leisure from her burdened life, could write a most wonderful chapter in anthropology, by recording minutely, day by day, how a little child emerged from the chaos of ignorance and progressed in the unfolding of its mind by the acquisition of knowledge. I shall have spoken in vain if I have not clearly shown that the average history of the individual is the history of the race, and that this great giant of humanity took on ideas just as does the little child.

Again, brutes have minds. Anthropology is making the most exhaustive investigations into the question whether they differ from us in quality of mind or only in degree; whether the instincts of the brute are the parents of human thoughts. In this portion of the subject is involved the vexed inquiry whether the brain generates thought as the liver does bile; or whether there is a spirit in man which constitutes his true individuality, for which his body is only a temporary abiding place.

### VI.—*Glossology.*

The department of anthropology which investigates language is variously termed, linguïstics, philology, glossology, and the science of language. It has for its object to inquire

into the origin of language, and many hard-fought battles attest the energy with which the various champions have entered into the subject. Languages have changed and differentiated. How, and through what causes? They mix, and new languages arise. They have their anatomy and physiology. They have their purely physical side, being composed of muscular gestures and vocal utterances, purely physiological. They have their psychological side, "Sound is but the curtain behind which is concealed the mystery of thought." As before stated, the whole history of man is the unfolding of mind, and language thus becomes a historical science. The anthropologist does not stop with vocal speech. For him bodily attitudes, animal voices, the gestures of the dumb, and of lower races are language. We have in this very building a Bureau of Ethnology, where, under the direction of Major Powell, such specialists as Mallery, Dorsey, Gatschet, Hinman, and Riggs are wrestling with the American Indian languages. The same zeal characterizes the cultivated nations of Europe. The vocal and written speech of man is found to have kept pace with the progress of his thoughts.

The growth of language is spoken of as having passed through three stages, or as occurring in three fundamental types:—

1. The Holophrastic, (*holos*, whole, *phrasis*, phrase,) in which whole phrases or sentences were thrown into a single utterance; or polysynthetic (*polus*, much, and *synthesis*, compounding.)

2. Agglutinative, (*agglutino*, to fasten or glue to,) in which the words are much compounded, but only one of the word-elements retains the ancient forms, the others being pared down to mere appendages.

3. The Inflected, in which relations are indicated by endings, which no longer have any meaning, but serve merely to indicate the function of their stem. The whole subject is thoroughly and freshly worked up in Major Powell's "Introduction to the Study of Indian Languages," which I would advise you all to read.

The recording of speech, also, has had its peculiar and interesting course of life. Beginning with mere tally sticks, hunting and gambling scores, and such mnemotechnic devices, the student may carefully thread his way through rock-carving and picture writings to hieroglyphics. The abbreviation of hieroglyphic symbols to words and syllables, and even to sound symbols took place very slowly, but the process may be traced in the older and later Egyptian and Chaldean writings. The art of printing is the last stage in the journey of graphic representation. The study of Indian pictographs, as well as the sculptures of Mexico and Central America, promises to furnish some very important chapters in the history of linguistics.

### VII.—*Technology.*

The portion of my subject in which most of my hearers are interested, however, is the evolution or the elaboration of industries, or comparative technology. As archæology reveals the progress of invention in *time*, so technology reveals the diffusion of the grades of culture over the earth. The two are twin sisters of the operative or material side of anthropology. You cannot imagine the smile of satisfaction which stole over the face of a Patent Office friend when convinced that some of the most important materials of anthropology passed through his hands every day. He exclaimed, "I an anthropologist! I thought I was only an examiner. I am going to write a paper on anthropology." There is not a phase of civilization that has not had its tools, its edifices, its paraphernalia. There is not a tool, or building, or garment, that has not passed through a series of transformations most interesting to trace. These objects may be looked upon as species in natural history. They cross and interlace so as to form the gorgeous tapestry of human culture.

To my lady friends I would say this subject is of thrilling interest. There is not a thing that you wear, or eat, or enjoy, that has not come down to you through a wonderful experience. The worship of the beautiful did not origi-

nate with Oxford students in the XIXth century. "Woman was the first potter and embroiderer. She is everywhere the primitive decorative artist, and it is the exception that man occupies himself with ornamental art, even in civilized countries. Woman covers with ornament everything her hand touches, and the lady in her boudoir industriously embroiders on some article of mere luxury, the same series of frets and scroll borders which, on the Amazonas, the savage, unclothed squaw as diligently, and with as firm a hand, traces with a spine on the damp surface of the clay she is fashioning." It is as if they sang the same simple song, like a silver thread binding all lovers of the beautiful into a common sisterhood. Could we find the missing links, the arts of Egypt, Assyria, Greece, and Rome would not stand out like green islands of the sea, but would form the necesary parts of one homogeneous structure.

The idea has seized the fruitful mind of Professor Goode, Assistant Director of this grand Museum, and you will read in Professor Baird's Circular No. 2, as follows:

In the new building will be concentrated all the industrial collections, and all the ethnological specimens, except the reserve series of pre-historic stone implements. In the old building will be kept those collections which are most important as material for purely scientific investigation, such as the main collection of birds, the fishes and reptiles in alcohol, the marine invertebrates, etc. The new building will, however, contain the collections in economic natural history.

The collections in the new building are intended to form an *Anthropological Museum*, organized upon the broadest and most liberal interpretation of the term "anthropology," and illustrating the characteristics of civilized as well as savage races of mankind and their attainments in civilization and culture. The central idea will be *man*, and the manner in which he adapts the products of the earth to his needs. All useful and noxious animals, plants, and minerals will be shown, industries by means of which they are utilized—by both method and finished product—and finally, the various objects which men use for any purpose, whatever. *A place is provided for every object which has a name.**

*At this point several series of objects were exhibited to the audience to illustrate the two ideas, *progress* and *adaptation*. Among them was the growth of the ship from the dugout through the skin boat (variety: birch-bark canoe) to the steamer Fish Hawk; the evolution of the knife, the hammer, the bottle, the saddle, food, and ceramics.

## VIII.—*Sociology.*

The next division of our subject is sociology. The history of civilization is really the history of society. Little do we think in our Christian homes, where one man and one woman through mutual love devote themselves to their offspring; in our well-ordered cities where life and property are protected and every convenience of public life furnished to rich and poor alike; in our grand nationalities and world-embracing exchanges, how humble and rude were the beginnings. We must go back to a gregarious state, where brothers and sisters intermarried, where the bond of union was fragile, where children belonged to the group, and there was no magistracy or public spirit. We thence pass upward to the Australians, in whose social system there is a quadruple classification of male and female for marriage and other purposes. The North American Indians furnish the next grade, with their curious clan organization, and descent in the female line.* Passing onward through semitic polygamy, we are brought to our own platform of social life in all its complexity. There are vast territories of knowledge, including ceremonial institutions, ethical codes, morality, and legislation, which I can only mention in this connection, but which have engrossed the greatest philosophers of the world in all ages.

I have prepared a chart in order to indicate to the eye how the progress and adaptations of culture in the various categories may have taken place. At the top are Morgan's seven periods, the second horizontal line gives a typical event of the period, the third, a representative race, taken at random, the succeeding lines refer to the categories of culture.

The whole subject is of commanding interest to the legislator and the student of history, but as we are to hear from Major Powell upon this topic, I pass to the next division, the Spirit World.

---

* The Rev. Owen Dorsey's charts of Dakota clans were exhibited in illustration.

| CATEGORIES. | GRADES OF CULTURE. | | |
|---|---|---|---|
| Morgan's Scheme | Lower Savage | Middle Savage | Upper Savage |
| Characteristics | No fire, rude stone | Fish diet, fire | Invention of the bow |
| Race | St. Acheul | Australians | Nomadic Indians |
| Food | Raw products of the earth. | Indigenous products, roasted and stone-boiled food. | Dried meats and plants, dug-out vessels for cooking. |
| Clothing | None, or a wind shield. | Capes of skin or coarse matting. | Caps, body clothes, moccasons, of the sexes much alike. |
| Habitations | Caves and shelters | Temporary huts and wind-breaks. | Tents and wigwams in clan-groups. |
| Implements | Palæolithic | Charred spears, hammers, knives, nets, dug-outs, fire-drills. | Skin-dressing, basket-weaving, bow-dressing. |
| Weapons | Clubs and stones | Spears, clubs, boomerangs, throw-sticks, shields. | Bows and arrows in great variety, scalping knives. |
| Locomotion | No appliances | Trails and landmarks | Snow-shoes, sledges, dug-outs, rafts, and skin-boats. |
| Æsthetic Products | Painted bodies, strings of shells, whistles and wooden drums. | Feathers and paint, gorgets and limb trappings, stick and skin drums. | Tattoo and paint, embroidery and fringes, rattles and bells. |
| Domestication | None | The dog | Dogs, ponies, deer. In the south, birds. |
| Industries | Hunting and fishing | Supplying wants, little division or barter. | Hunting, fishing, gathering, barter, wampum. |
| Language | Interjectional and by signs. | Guttural, clicking, reduplicative. | Agglutinative, prone to dialectic change. |
| Knowledge | The habits of game, a little about the stars and the weather. | Count four, predict weather, judge locality and distance, name species. | Decimal notation, time, genera of objects, natural phenomena. |
| Beliefs | Everything animated | Ghosts, hero ancestors, animal soul in things. | Sorcery, future life like this, good and evil powers, myths. |
| Worship | Appeasing everything. | Sorcery, rain-making, fetish worship. | Medicine pow-wow, invocation by smoke, fasting, mutilation. |
| Morals | Conformity to clan use. No code. | Conjugal and parental duties not enforced, hospitable, improvident. | Chastity of wives enforced, generous, cruel. |
| Social Structure | Promiscuity | Punaluan marriage in groups. | Ganowanian marriage, mother-right, clan-system. |
| Social Rites | Not known | Marriage by capture, greetings formal, tabu, deposit burial. | Marriage rite weak, Potlatch feasts, burial various. |

GRADES OF CULTURE.

| Lower Barbarous..... | Middle Barbarous..... | Upper Barbarous..... | Civilized. |
|---|---|---|---|
| The art of pottery..... | Domestication, cereals. | Smelting, writing..... | Printing. |
| Iroquois, Muskoki..... | Zuñeis, Aztecs..... | Semitic Races..... | Later Aryan. |
| Food partly raised, corn, beans, &c. Drinks. Food boiled. | Tortillas, gruels, cacao, chile, intoxicants.. | Porridge, milk, decoctions, leaven, metal dishes, fruit trees raised. | Every variety, animal and vegetable. |
| Shirt, apron, robe, leggings, mocassons, head-dress. | Varied with rank, highly ornamented, shoes. | Of cotton, linen, and woollen stuffs, varied with rank and occasion. | Differentiated for sex, rank, and occasion. |
| Long-houses and permanent villages. | Stone, adobe, lime, flat roofs, public buildings, no arch. | Sun-dried bricks, stone, wood, less communal, shops, arches, streets. | Strictly family, exceedingly varied, gas, water pipes. |
| Polished-stone, mortars, wood-working, pottery. | Digging-stick, clay working tools, mule trappings. | Herding, weaving, mealing, and farming, rude handicraft. | Stimulation of invention by protection and patent laws. |
| Bow, club, tomahawk, scalping-knife, of better make. | Obsidian ax, spear, obsidian knife, darts, slings, shields. | Flint-locks, wall and moat, sword and lance. | Fire arms perfected, iron clads, signal service, &c. |
| Canoes, litters, carrying places. | Canals, roads, causeways, bridges, llamas, and, later, mules and horses. | Beasts of burden, floats, open ships, camel trails. | Steam carriage added. |
| Paint and pendants, textile, stone, shell and feathers, flute of 10 notes, drums, rattles. | Paint and toggery, carving in stone and wood, embroidery, drums, shell-horns, flutes. | Jewelry and scents, massive structures, music varied, poetry ornate. | Architecture, sculpture, music, painting, belelettres. |
| Same as last. No others to domesticate. | Deer, rabbits, fish, many birds, cochineal. | Camel, cow, horse, dog, sheep, goat, poultry. | Every branch of the animal kingdom. |
| Taking from nature, raising crops, making utensils, exchange. | Weaving, felting, dyeing, stamping, ceramics, stone cutting. | Metallurgy, caravan and ship trade, markets, fairs. | Work in land, forest, mines, waters. Commerce. |
| More and softer sounds, holophrasms longer, wood and rock carvings. | Forty sounds, polysynthetisms euphonic, symbolic writing. | Highly inflectional, writing syllabic or alphabetic, literature. | Inflected, writing, printing, telegraph. |
| Count 100, wampum in historic narration, the stars, use of medicine. | Vigesimal counting, calendar, natural history, medicine, maps. | Astronomy, geography, medicine, history, law. | Science, metaphysics, history, technology, politics. |
| Dreams, wandering ghosts, Great and Evil Spirit, minor deities and heroes. | Superstitions, threefold avernus, element worship, seven great gods. | Monotheistic or polytheistic anthropomorphism. | God, angels, spirits, future life, retribution, agnosticism, atheism. |
| Religious order separate, offerings, festivals, dances, nature worship. | Priestly caste, pantheon, human sacrifices, oaths, vows, fasts, penances. | Sacred books, preaching, prayer, fasting, alms, chants. | Public and private. The spirit above the form. |
| Labor degrading to men, dignified, kind to aged and children, cruel. | Submissive, unchaste and drunkards punished, true, kind, chivalrous. | Temperate, lewd, polite, hospitable, shrewd, brave, treacherous. | To love God supremely and our neighbor as ourselves. |
| The same, father-right begins, and personal property. | The same, father-right, property more individualized. | Patriarchal family, polygamy, property in severalty, despotism. | Monogamic family, father-right, Free State. |
| Marriage by presents, ball games, ossuaries. | Marriage elaborate, games, ceremoniousness, attendants killed at the grave. | Harems, games, bathing, burial near shrines. | Marriage by priest, survivals of ceremony, burial in graves and tombs. |

## IX.—*Comparative Mythology.*

It is very difficult to find a word to cover exactly the ground which the anthropologist includes in the word religion. Among Christian people, the term is applied to certain beliefs, forms, and conduct; and the adjective, religious, would not be understood if applied to discussions merely; but let it pass.

There never was a people so rude as not to observe nature and to assign causes for everything that passed through the avenues of their senses. Into those causes life is projected and human or animal attributes added until a *philosophy* or *theology* is built up.

Secondly, in some form or other men early begin to believe in a future life, to people an unseen world with innumerable beings, good or bad, and to separate these beings into classes with functions. This forms a *creed.*

Further, certain actions on our part are due to these beings —will please, displease, or appease them. Men fast, chant, pray, dance, and sacrifice; they deny, weary, and mutilate themselves, for this purpose. They set apart a class to wait upon the gods, build costly edifices in their honor, in which the continual sacrifice and savory incense ever attest the fear, or the devotion of the worshippers. Among any people this constitutes their *cult.*

By the testimony of missionaries and others, who, like Mr. Cushing, have lived among a lowly people long enough to win their confidence, we are in possession of the facts which will enable us roughly to outline the world's theologies, creeds, and cults. The anthropologist, far from being shocked by the seeming absurdities of these lower forms of religion, beholds in them the germs of all our beliefs. I have frequently thought, while reading of the bloody and cruel fetish worship of the dark-skinned African, that a kind providence had effected the whitening of the human skin coordinately with the purifying of religious conceptions. At

any rate there has been progress in comeliness and improvement in religion.

At first, each individual thing was thought to be ensouled. A little after there were ghost-gods, which might be influenced by fetishes or incantations. Worship of things, places, animals, and plants follow in quick succession. Another step brings us to the deification of the powers of nature, under symbols, barbarous or chaste according to the taste of a people, which constitute the world's idolatries.

How pleasantly we might spend hours tracing through its mazy windings the conception of personal causation, from the gross forms of savage philosophy to that grand idea which traces all creative power and providential control to majestic law, "that has its seat in the bosom of God, and its voice is the harmony of the universe." With Major Powell, Mr. Cushing, Mr. Dorsey, and Mr. Hinman, we should sit down at the Indian's hearthstone and hear in their simple myths echoes of the childhood of the world. With Professor Anderson we should visit the priscan home of the Anglo-Saxon race, and recline under the shadow of the tree Ygdrasil, at the feast of Tuisco and Woden, Thor and Fria. Our survey could not omit Chaldæa, Assyria, Persia, India, China, or Egypt. Much more, the gods, the myths, the sculptured forms and world-surpassing temple architecture of Greece, and the pure monotheism, exalted poetry, and pathetic history of Judæa would engross our serious thoughts. Rising above all, yet not contemptuous of any, at last would shine refulgent that undefiled Christianity which declares the fatherhood of God and the universal brotherhood of man.

## X.—*Hexiology.*

We come at last to speak of that chapter in anthropology which treats of the reciprocal actions of man and his environment. In every thing that comes to be what it is, there are two sets of forces at work, the internal and the external, the constructive and the destructive, the impell-

ing and the restraining. We see it in the sea and the shore, the breath of the glass-blower and the mould in which the bottle is formed, the vitality and the favorable or unfavorable location of the plant, the habitat and the vigor of animal species, and finally in the races of men and their inorganic and organic surroundings. The anthropologist has no more difficult problem before him than to ascertain the influence of climate, outlook, food, and social environment, to produce varieties in man, to set in motion that great current called "the migration of nations," and to bring about from nothing, all that constitutes the various civilizations of the world. Inasmuch as the poorest farmers buy the least productive lands, the sterile districts of a county even will be less cultured than the most fertile; and living upon such ground soon reacts upon the people, only to increase their poverty and to decrease their vitality. How much more, then, may we expect to find the abject races of man living in the suburbs of the world, where squalor is engendered by the surroundings, until there is a harmony or equilibrium between the unpropitious skies and their wretchedness. On the other hand, the contact, the rivalries, and even the bloody wars of favored races have awakened an emulation productive only of good.

It is the business of the anthropologist to trace out these subtle causes and influences which advance or retard civilization, which have covered the earth here with prosperity, there with melancholy ruins. So far from being beneath the consideration of the highest and most gifted intellects, this and not petty expedients should be the subject of serious inquiry by the statesman, the political economist, and the philanthropist.

My task is nearly finished. My object has been to define a science in which there is no priesthood and laity, no sacred language; but one in which you are all both the investigator and the investigated,—the judge, the jury, and the prisoner at the bar. I have endeavored to portray in outline the work of the anthropologist, so that you may intelligently follow my successors who will treat of special themes.

I shall not have spoken wholly in vain if I have indicated the lines of all social progress and led you to see, however faintly, the value and indissoluble union of the humblest human phenomena—

> "That nothing walks with aimless feet;
> That not one life will be destroyed,
> Or cast as rubbish to the void,
> When God hath made the pile complete.
>
> That God which ever lives and loves,
> One God, one law, one element,
> And one far-off, divine event,
> To which the whole creation moves."