

Article X.—A TABLE OF THE GEOGRAPHICAL DISTRIBUTION OF AMERICAN INDIAN RELICS IN A COLLECTION EXHIBITED IN THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK ; WITH EXPLANATORY TEXT.

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This collection has been gathered by the writer during the last twenty years, and has been arranged in the various special classes irrespective of geographical division, with the design of illustrating the varieties of each class, and solving, as far as possible, the theory of their use by our aboriginal predecessors upon this continent. The importance, however, of the geographical distribution of the objects has not been overlooked, and a special Table has been constructed from the Records, designed to signify the localities whence the several relics were procured.

The writer has been urgently solicited by archæologists who have inspected this work, and whose opinion is of weight, to publish this Table as a compilation likely to be of much benefit to students, and in deference to this request, and in the hope of attaining so desirable a result, it is now, through the courtesy of the authorities of this Museum, presented to the consideration of those engaged in the study of American Archæology.

In forming conclusions based upon this Table a very large caution must be exercised. Common forms, such as arrow and spear points, celts, and many others, are so overwhelmingly abundant, that the collector is compelled to restrict their influx, and their appearance in this Table gives no correct idea of their relative prevalence. On the other hand he has aimed to collect, from every available source, special classes of objects, and the Table will justify conclusions, approximately at least, of their relative geographical distribution. Such classes are Banner Stones, Bird and Bar Amulets, Gorgets, Fleshers, Pestles, Discoidals and Discs, Club Stones, Pipes, Polishers, Drills, Hematites, and others. Many of these classes are capable of sub-

division according to pattern, and are so arranged in the cases, but it has not been thought necessary to express these in the Table. Nor does the Table include some two thousand objects from other quarters of the globe than the American continent, which are found in this collection, the classification of such objects being radically different, and requiring a special enumeration, and, while of great importance in a comparative study of the artistic progress of the earlier races of the world in general, can have little bearing upon the purpose designed by the Table now presented.

The nomenclature adopted by the writer calls for some explanation on his part. When this collection was commenced, some twenty years ago, he found every class encumbered with sundry names varying as the fancy of the collector suggested. Many of these were approved by good authority at that time, but as the science advanced were shown to be based on incorrect or partial knowledge of the uses of the objects.

The *Banner Stone* was termed 'Ceremonial Axe,' 'Ceremonial Weapon,' 'Breast Ornament,' 'Wand,' 'Totem,' 'Mace Head,' 'Mace,' and other names, all sufficiently vague to cause confusion, and some of them applied quite as frequently to other classes of objects, so that, unless the specimen had been figured, one was at a loss to comprehend what class was referred to. When a considerable number of specimens of the Banner Stone class was collected, it was evident that, notwithstanding a large variation in pattern, they possessed certain characteristics common to all, viz. : a single cylindrical perforation along the length or breadth of the plane of the object, with flanges or blades or projections on either side and on the same plane. With more than two hundred specimens before him, it was evident to the writer that the term 'weapon' or 'axe' was not applicable even though qualified as 'ceremonial,' for by no possibility could such a resemblance be shown. As to 'Breast Ornament' that term would only merge this special form among innumerable others widely different in their characteristics, and is therefore not sufficiently distinctive. 'Wand' and 'Totem,' 'Mace Head' and 'Mace,' are liable to the same objection as well as that of being indefinite, and thus the earliest popular designation, that of

'Banner Stone,' seems to be the least objectionable. This name was suggested by its capability of being mounted upon a staff and borne before some dignitary as an indication of rank ; and this was for long a favorite theory, and in some cases may have been the fact. Dr. Rau was of the opinion they were worn upon the person, and certain characteristics in many specimens would seem to confirm this notion, but, in the absence of any testimony in history as to their actual use, we prefer to assign the popular designation of 'Banner Stone,' and require all objects so classed to be capable of such use, viz.: possessed of one perforation along the plane of the length or breadth of the object itself.

The patterns of this class vary largely and are grouped, as far as practicable, in the following subdivisions : *Circular*, where the two flanges complete a circle of the whole object ; *Battle Axe*, resembling a double-bladed battle axe ; *Pick*, a rounded bar, either straight or curved, the ends tapering to a point ; *Butterfly*, where the ridge containing the perforation has been cut away at one or both ends, thus resembling a short-bodied insect with over-reaching wings ; *Bird Wing*, where the ridges have not been so cut away, and the flanges extend a considerable length ; *Triangle Bar*, where the perforation traverses the length of a bar whose vertical section forms a broad-based triangle ; *Rectangular*, where the sides and ends are parallel or square ; *Conical*, where the flanges diminish in breadth from one end to the other ; *Single Arm*, having but one drooping arm, and an oval instead of a circular perforation.¹ In this collection are seven of these rare objects, all beautifully finished, indicating this form to be the deliberate design of the artisan and not a repair of the accidental breakage of a companion arm. *Special*, is the last subdivision of this class, and includes special forms of great variety, freaks or fancies of the artisan, too eccentric to admit of subclassification, but, by conforming to the conditions before specified, entitled unquestionably to rank as Banner Stones.

The class here termed *Gorget* was also invested with an abun-

¹ A fine specimen from the Indian town of Hochelaga is figured in Sir J. William Dawson's 'Fossil Men and their Modern Representatives,' p. 118 (London, 1888), which he regards as an offensive weapon, an idea not confirmed by an examination of other specimens. Also 'Smithsonian Archaeological Collection,' p. 23, fig. 92. and Thirteenth Annual Report of the Bureau of Ethnology' (Washington, 1896), p. 123, fig. 145, which is most likely a Single-arm Banner Stone, provided no fracture appears and the perforation is oval.

dance of synonyms. It has been designated 'Pierced Tablet,' 'Bowstring Gauge,' 'Badge,' 'Pendant,' 'Puzzle Block,' and other names founded upon theories of their probable purpose, but the special name here adopted was in use by experts in Indian trade and customs more than a century since, when similar objects in metal and of European make were donated to chiefs or traded to the various tribes, and were substituted for those of stone then worn upon the neck or breast. The Gorget is a plate of stone (generally stratified slate) invariably flat on one side and generally so on the other, the surface highly polished; symmetrical in outline and having one or more perforations through the plate. These perforations, unlike those of Banner Stones, are made with a conical and not cylindrical drill: they are sometimes wanting when otherwise the specimen is complete, presumably from the fact that the boring was left to some other manipulator or was a later process of the original artisan.

It is quite probable that while most of the objects included in the class of Gorgets were purely ornamental, many others may have subserved some industrial purpose. Such uses are as yet conjectural, and until generally determined by later research their intrinsic beauty of form and finish and suitability in other respects appear to entitle the specimens in question to rank as ornamental appendages, and they have been retained in this class.

In this collection we have nearly four hundred objects of this class, whose forms are so varied as almost to defy any attempt at subclassification, and this has been attempted only in the following instances where some common characteristic seems to bring several into line together. The *Spade Shape* is a flat plate of stone, finely polished and of even thickness, semicircular in shape, with a tang of about two-thirds its breadth, extending in form of a square from the upper edge. In this tang or projection are one or two perforations. It differs from Gorgets generally in having this semicircular blade brought to a moderately sharp edge.

It is a question whether this pattern should be included in the Gorget class. Schoolcraft,¹ in the second volume of his Indian

¹ 'History, etc., of Indian Tribes of United States,' Vol. II, p. 89, and plate xlv, fig. 3. Philadelphia, 1860.

Tribes, figures one from South Carolina, and considers it a 'Battle Axe.' Col. C. C. Jones, Jr.,¹ and Dr. Rau² both suggest, more reasonably, its possible use as a skin scraper; but that question is still unsettled, and, as an ornamental appendage, it has been here left to its original position as a Gorget. There are six specimens of this subdivision in the collection.³ Another subdivision is the *Ovate*, comprising all specimens whose ends are symmetrically rounded, though the side outlines may be concave or convex or notched. *Leaf-shaped* includes specimens whose ends are pointed, with similar privilege as to side outlines; *Spear-shape*, where one end is squared and the other pointed; *Square*, where both ends are squared or the general form is of that character; *Ridged*, having the upper surface more or less elevated, sometimes rising to a point; *Expanded centre*, where the specimen is plano-convex in structure, the central portion widened or expanded and then gradually attenuating in width toward the ends, which terminate bluntly. The specimens embraced in these last two subdivisions have two perforations along the central line, which are peculiar in the fact that they are made by a conical drill from the base to the upper surface by one boring only; most other Gorgets show perforations made from both surfaces and meeting midway more or less exactly. There are sixteen specimens of this subdivision in the collection,⁴ and they have sometimes been incorrectly called 'boat-shaped,' a term properly applied to objects of entirely different shape and purpose, as will be seen hereafter. As before stated, a large majority of the Gorget class is, from eccentricity of pattern, included under a subdivision of 'special types.'

Gorget of Shell, so called because probably worn in the same manner as those of stone, are subdivided only as *Inscribed* and *Plain*. They number seventeen in this collection.

Amulets, so termed, as having most probably some supernatural signification, include *Aztec Amulets*, of jade and other semi-precious stones, occasionally carved and pierced for suspension, and the *Bird* and the *Bar*.

¹ 'Antiquities of the Southern Indians,' pp. 289, 290, plate xiv, fig. 14. New York, 1873.

² 'Smithsonian Archæological Collection,' p. 25, fig. 96. Washington, 1876. Also 'Twelfth Annual Report Bureau of Ethnology,' p. 245, fig. 150, and p. 383, fig. 263.

³ From Tennessee, 2; from Mississippi, Georgia, North Carolina and Kentucky, 1 each.

⁴ From Ohio, 8; North Carolina, 2; Indiana, 2; West Virginia, Illinois, Georgia, and unknown, 1 each. Six of these specimens, finished in other respects, still want the perforations.

The *Bird Amulet*, as it is here termed, has been fancifully styled 'Knife Handle,' 'Brooding Bird,' 'Corn Shucker,' 'Saddle Stone,' etc. While opinions widely vary as to their use or exact signification, it is still evident that these objects mean to represent a bird, and are best described by the use of that name in conjunction with Amulet. The more complete specimens have a flat base bar, triangular or convex above, with the head and tail of a bird rising at an angle from opposite ends. At each end of the bar a diagonal perforation is made longitudinally through to the base, and is an invariable feature only except where the object may be presumed to be as yet incomplete. Occasionally the tail is wanting, and also the eyes. When the eyes appear they frequently project considerably and expand into a mushroom shape. Among the seventy Bird Amulets in this collection are seven with an expanded oval base, two with the projecting eyes but no apparent head, and one whose head is that of a turtle.¹ All these possess the proper perforations.

The *Bar Amulet*² is a bar, square or triangular, with terminal perforations similar to those above mentioned, but having no characteristic of bird or animal. These are rare objects, and seem never to have received a specific name, but the number here shown (38) would entitle them to some special designation, and the peculiar perforations, resembling those of the Bird Amulet, and not found elsewhere, have implied a possible similar signification, and they have been classed as 'Bar Amulets.'

Implements of Stone, of Bone, and of Shell, are divisions which include objects in those materials whose uses are unknown or at least questionable. In arrangement upon the shelves they are separated into patterns or types, which indicate a like use, whatever that use may have been.

Among these subordinate divisions are found sixteen specimens

¹ One other instance of the substitution of a turtle's head for that of the bird is reported in the 'American Naturalist,' Vol. XVI, p. 1027, and Vol. XVII, p. 107, both describing the same specimen, found in Miami County, Ohio, in 1881. The one in this collection was found on the Thornton farm, two miles south of Auburn, Cayuga County, New York.

² Figures and description of the Bar Amulet appear in Dr. Abbott's 'Primitive Industry,' p. 375, fig. 356, Salem and Boston, 1881; and in Smithsonian Archæological Collection, p. 53, fig. 210. It is much ruder in appearance in Dr. Abbott's figure than usual, the specimens in this collection being remarkable for beauty of form and finish. They vary in length from two to eight inches, and exhibit the characteristic diagonal perforations, which, in a fractured specimen, has been renewed upon the broken end.

of the *Boat-shaped Implement*.¹ It resembles a boat in so many ways that the name seems to sufficiently identify it without designing to imply that such was the idea of the Indian artificer. These objects are from two to seven inches in length, worked to a point at each end, hollowed out more or less deeply, and rounded to a sort of keel below, which is sometimes furnished with a longitudinal groove. It has most frequently two perforations along its axis, running through the bottom of the boat at either end, though three specimens, of great beauty of shape and finish, show no perforations.

The class termed *Celts* is too well known to archæologists to require description here. The form, with more or less modification, prevails throughout the world, but our native product of this implement does not yield in symmetry of form or beauty of finish to the best work of other continents. The synonyms under which it appears in our literature are 'Tomahawk,' 'Wedge-shaped Axe,' 'Hand Axe,' 'Hatchet,' etc. The best authorities in England and America—Sir John Evans² and Col. Charles C. Jones, Jr.³—prefer to call it 'Celt,' and this term, derived from the old Latin *Celtis*, signifying chisel, has been largely used, and seems less objectionable than the others above named, which imply a hafted implement. When we consider that our aborigines made the grooved axe almost as abundantly as the celt, and were easily familiar with that mode of attachment to a handle, it is inconceivable that they would have expended so much labor upon the smoothing and polishing of the celt without allowing a groove or at least an unfinished section of the surface for the attachment of a handle if they intended to haft it. While hafting may by some urgent necessity have occurred in a few instances, it could not have been a general custom, and a careful examination of some twelve hundred celts, large and small, in this collection, shows but fifteen that give any indication, by groove or local roughening, of having been hafted. A vast majority, by their unblemished and unsplintered edge, imply that they could only have been used for soft work, and when we con-

¹ The Boat-shaped Implements are, from Ohio, 4; Georgia, 3; Tennessee, 3; North Carolina, 2; Kentucky, 1; Mississippi, 1; Arkansas, 1; unknown, 1. Cf. 'Smithsonian Archæological Collection,' p. 33, fig. 135, and 'Primitive Industry,' p. 382, fig. 362.

² 'Ancient Stone Implements of Great Britain,' Chap. III, p. 50. London, 1872.

³ 'Antiquities of the Southern Indians,' p. 278. New York, 1873.

sider the abundance of garments made from skins recorded by early historians, and how these were prepared, and also the mode of excavating canoes from tree-trunks by successive burnings and chiselling of the charred wood, both of these extensive industries implying hand-use, it seems but reasonable to adopt a designation as little confusing, as regards suggesting any other mode of use, as the one here given to this implement.

The class termed *Flesher* is an implement resembling in some respects the celt, and most generally so called, but it is plano-convex in structure, and that form appears most suitable for flaying or skinning animals, from which it has been termed 'Skinner' and also 'Bark-peeler,' which purpose it also answers. The lower surface is flat, slightly curving upwards as it approaches the edge where it meets the upper and convex surface. There are thirty-five specimens of this implement.

Gouges and *Adzes* are terms well understood, and these implements appear to have been used by the Indian in the same way as our metal tools of the same name at the present day, while they possess those familiar shapes. The *Gouges* in some cases indicate, by knobs upon the back, that they were to be hafted, and the *Adzes*, also knobbed, have occasionally a gouge-like, cutting edge.

The term *Chisel* is applied to bars of stone, long and slender, both square and round, tapering at one or both ends to a sharp cutting edge. They are subdivided into 'Square,' 'Round,' and 'Flat,' this last representing very thin elongated celts, which must have subserved such a purpose.

The *Grooved Axe* is one of the common well-known Indian implements which needs no description. Although a few specimens have been found in Europe, they are there so exceedingly rare that they may be considered peculiar to the continent of America. In this collection there are 419 objects of this kind, varying from 14 inches in length and of 17 pounds weight, to the size of a child's toy only $1\frac{1}{4}$ inches long, probably merely ornamental. They are generally finely made, though those from New England are mostly of rude form and extremely flat and broad. The groove at times entirely encircles the blade, but frequently is wanting upon the edge next the handle, where the

surface is left flat, or slightly concave, presumably to permit the insertion of a wedge and thus tighten the withes when slackened by continuous use.

The *Grooved Maul* is often simply a grooved axe deprived of its cutting edge by fracture or grinding. The larger ones are frequently natural pebbles or boulders, grooved about the middle for hafting. They answered the purpose of our sledge hammer when of considerable size and weight. The smaller sizes no doubt were hafted and covered with skin, leaving only one striking face exposed, and thus answered for a weapon in war, or the chase of the larger wild animals.

Hammer Stones are almost universally oval or disc shaped pebbles, of small size with slight depressions in the centre of each side for the better grasp of thumb and finger. The bruised edges indicate their mode of use.

Anvils and *Cupped Stones* comprise a series of stone blocks, generally boulders, which have upon their surface one or more depressions about an inch in breadth and depth, supposed to be for breaking walnuts or for grinding paints or for sockets for reed drills. A generally bruised surface indicates their occasional use as 'Anvils.' They have been styled 'Nut Stones,' 'Spindle Rests' and 'Paint Cups,' suggested by these possible uses.

Pestles are rounded bars of stone used in mortars of stone or wood for crushing grain. They are frequently carefully made, tapering toward the handle end, which terminates in a knob. Their length in this collection varies from two to thirty-three inches, the smaller ones being frequently natural pebbles of suitable form. This elongated bar seems to have been peculiar to the Northern Atlantic States. West of the Alleghanies and to the Rocky Mountains the Pestle was from four to eight inches in length, and expanded to a much broader and flat base in which appears a small central depression. Beyond the Rockies to the Pacific Coast, the Pestle is generally from eighteen inches to two feet in length, capped with a well-carved knob, and gradually enlarging thence to the other extremity. The three subdivisions of this class are therefore 'Round Bar,' 'Bell-shaped' and 'Knobbed,' representing these several forms.

Mortars are either rude or dressed masses of stone, more or

less depressed upon one surface for receiving grain or other material designed to be crushed.

Picks and Hoes comprise an extensive series of agricultural implements of chipped chert, largely from the Mississippi Valley. They are long, narrow, and rather thick blades, from three to eight inches in length and one to four in breadth, sometimes with parallel sides and rounded at the ends, and on all sides trimmed down to a rude edge, or again wide at one end which is slightly pointed, and diminishing gradually toward the other. One end generally shows the brilliant polish effected by long use in a soft soil. The term 'Picks' is applied to the narrow implements of this class, presuming they have not been used so much for lifting or removing soil as for making holes to receive seed. The 'Hoes' indicate by the breadth of blade their probable use as named, while a subdivision is that of 'Notched Hoes,' which are blades of thin chert nearly circular in shape, on one extremity of which are two deep notches affording hold for a withe or cord, by which a handle may be attached against the face of the implement, much resembling hoes in present use. These notched hoes are extremely rare, and, so far as known, are only found in southern Illinois, eastern Missouri and west Kentucky. In this collection are thirteen specimens, varying from four to seven and a half inches in greatest diameter. They are of brown chert, and the polish of the lower edge indicates a prolonged use.

Much larger implements, used much in the same way are classed as *Spades*. These are generally long, oval shaped slabs of chert, flat on one surface and convex on the other, ranging from a length of eight inches and a breadth of four, to that of fifteen and a breadth of five. There are other exceptional forms, principally fan shaped, and all indicate a considerable use by a brilliant polish upon the edge. Though it is possible to use them as hand implements for one or both hands, it is not unlikely that they may have been fitted to a handle and used as our shovel of the present day.

The term *Discoidals* was found by the writer in general use, and as it simply identified a shape without implying a use possibly questionable, it seemed proper to adopt it. Objects having the character of discs vary so greatly in size that it seemed more convenient to make a division into two classes, one of 'Discoidals,'

embracing those having a diameter of three inches and over, and one of 'Small Discs' and 'Spindle Whorls' including those of a less diameter. The class of Discoidals therefore includes the objects commonly known as 'Chungkee Stones,' and the probabilities are that most all so classed in this collection—while possibly having in some cases had a secondary use as mortars—were designed for use in the game of Chungkee or its like. A Discoidal is a circular wheel or disc of stone from three to eight inches in diameter, and from one to one and a half inches in extreme or marginal thickness. The specimens are of various kinds of stone, frequently of white or yellow quartz, and are of remarkable beauty of finish. The subdivisions are, the 'Convex,' the sides of which are slightly convex; the 'Concave,' deeply hollowed on both sides; 'Concave Pitted,' having in the centre of each concavity a slight depression, which is sometimes placed upon an elevated point in the centre of the hollow; 'Concave Pierced,' where the centre is perforated; 'Bevelled Edge,' discs with plane surfaces, and edge slightly bevelled, as described by Le Page du Pratz¹ in referring to the game as played in Louisiana. All the specimens in this subdivision, seventeen in number, come from States south of Virginia and Kentucky. The surfaces are not pitted. The 'Cheese Form' is the last subdivision, and seems so unsuitable for use in the game of Chungkee, or perhaps any game whatever, that it might be considered as a distinct class. These objects are cylindrical forms of stone, equal in height and width, ranging from three by three inches to six by six, and slightly convex on the ends. Of the fourteen specimens in this collection² several show traces of exposure to fire, and this with their suitability for such a purpose, suggests the possibility of their use as pot-rests.

Small Discs include all disc-shaped objects less than three inches in diameter. They comprise as subdivisions, 'Bevelled' (sometimes called 'Bung-shaped') discs, having a bevelled edge, shading gently into the lower surface, which is slightly convex, while the upper surface is flat and comes sharply to the upper side of the bevelled edge. They resemble the bung of a large cask. They are quite abundant in western North Carolina and eastern

¹ 'Histoire de la Louisiane,' Vol. III, p. 2. Paris, 1758.

² Tennessee, 9; New Jersey, 3; North Carolina, 2.

Tennessee, and may fairly be presumed to have been mullers or crushers of some sort. Another subdivision of this class is that of 'Spindle Whorls.' These are flat or slightly concave discs perforated through the centre. While this fact would imply most naturally such a use, it is possible that several of them may have been buttons for games. Certain marks on several would seem to indicate a value as objects for play. While a large majority are of stone, others are of earthenware chipped into shape. Another subdivision is that of 'Simple Discs,' imperforate, with flat or convex, or concave surfaces. Most of these were probably used for games, and those with concave surface possibly as paint cups. They range from one-half inch to two inches in diameter.

Passing by several classes whose titles do not require elucidation, we have that of *Club Stones*, of which there are 17 of stone, and 21 of iron ore. These are egg-shaped objects with the small end flattened or hollowed for attachment to a staff or handle by a casing of skin. Eighteen of those of hematite or other iron ore are strongly magnetic, and would almost suggest an Indian's knowledge of this property, though their great weight in small compass was probably the reason of their selection. They are remarkably symmetrical in shape, notwithstanding the labor required to work such obdurate material.

The class designated *Tubes and Perforated Stones* includes a large variety of implements or ornaments, tubular in shape, and destitute of the flanges or wings which would bring them within the class of *Banner Stones*. Of the subdivisions the 'Hour Glass' is a well-known pattern, resembling two slender cones united at their apices, encircled there externally by one or two raised bands, and excavated throughout in corresponding shape. Of these there are seven specimens. The 'Cylindrical' subdivision includes all round perforated rods, sometimes of slightly expanding diameter towards one end, from two to twelve inches in length, and frequently highly polished. The 'Flat Base' is another subdivision, having one side slightly flattened and resembling large beads. These are generally of stratified slate, and are finished with great care and delicacy.

Pipes constitute a very extensive class in this collection, numbering in all some 375 specimens. Every collector will appreciate

the difficulty of determining, with any approach to accuracy, the age of such objects. Before and since the advent of the European, the fabrication of pipes has been a continuous industry, and while Indian tribes exist, cannot be expected to cease. Pipes made by the white man for purposes of trade, and on patterns that suit the barbaric taste of the Indian, also intrude and intermingle with those of native handiwork. This is not so likely to be the case with pipes made of the harder stones as with those made of steatite or earth or clay; but the Indian artisan of the Post-Columbian period has gained expertness from contact with the skill of the European and familiarity with his tools, and emulates him in the grace and elegance of his productions. So it follows that specimens of fine work may be the product of the enlightened Indian of the last three centuries, and thus the question of pre-historic origin will need to be determined by the facts regarding the *provenance* of the specimens under consideration. To obtain this information is extremely difficult and often impossible, as every collector knows. Specimens have often passed through many channels, from the finder to the collector, and from one cabinet to another, until their pedigree has been lost. Most of the pipes in this collection, however, have a well-established record, from which their Pre- or Post-Columbian origin may be argued. Among the latter are a few clay pipes of English and Dutch make, having manufacturers' marks, and taken from Indian graves in New York and Pennsylvania, which have a value in determining the date of an interment. The subdivisions of this class are as follows:

Human Sculpture...	Pipes bearing human head, face or form.	30 specimens.	
Bird Sculpture.	Pipes bearing bird's head or figure.	23	"
Animal Sculpture...	Pipes representing animals or reptiles in whole or part.	39	"
Platform Pipes.	Bowls set on broad thin plates, pierced for stem.	12	"
Shield Pipes.	Bowls with shield to be pressed to lips without stem.	6	"
Tubular Pipes.	Bowls and stems in same plane or direction.	21	"
Trumpet Shape.	Bowls flaring and long tapering stem.	13	"
Solid Bowl.	Bowls with aperture in same for stem.	46	"
Double Bowl.	Two bowls on one shaft or stem.	2	"
Double Stem.	Bowl with two or more stems.	4	"
Right Angle.	Bowl at right angle to stem.	103	"
Obtuse Angle.	Bowl at obtuse angle to stem.	39	"
Foreign.	British and Dutch pipes found in Indian graves.	13	"
Unclassified and fragmentary bowls and stems.		24	"

These subdivisions were adopted some years since at the suggestion of a friend who had made a special study of pipes, and contributed largely and learnedly to our literature on the subject. As will be seen, some prominent characteristic has given the name to each subdivision, and, when these are wanting, the 'Tubular' or 'Right Angle,' or 'Obtuse Angle,' include the remainder only, notwithstanding the fact that the first four divisions may comprise right or obtuse angle or tubular pipes. In the absence of any other known subdivision applicable to a class so numerous, and of such infinite variety in type, this system of subdivision has been retained, although perhaps not as satisfactory as could be desired.

The class of *Whetstones* includes all stone objects, large or small, whose form or surface gives indication of having been used for grinding, sharpening, or smoothing implements of stone or wood, and is subdivided into 'Hones' and 'Arrow-smoothers,' the latter having the surface furrowed, presumably for that purpose.

Polishers is the title given to a large number of stone objects probably used for polishing or rubbing skins or burnishing pottery. They are subdivided as to form into 'Square,' 'Oblong,' 'Conical,' and 'Natural Pebbles.' The latter necessarily must give some evidence of having been so used. They are generally carefully and symmetrically finished, and of the finer-grained stone.

Pendants, Plummets and *Sinkers*. This is a conglomerate class, including a great variety of objects, ornamental or useful, evidently susceptible of suspension. They are made of stone, of hematite and shell, and exhibit every kind of finish, from the finest and most symmetrical carving and shaping, to the rudest sort of adaptation by grooving a flake or pebble. The subdivisions of this class are 'Pendants' and 'Sinkers.' The former is used in a restricted sense, and implies a use as an ornament for the person. It is a round or cylindrical or pear-shaped bar, furnished with a groove or perforation at one end for suspension. It is sometimes banded with one or two rings in relief at one or both ends. So many ornamental objects of Indian make are pendant upon the person, though ranking as Gorgets, or in other

classes according to their characteristics, that the term *Pendant*, as here used, is restricted to such objects as comply with the above description. The other subdivision, that of 'Net-Sinkers,' includes a large assortment of stone and shell pear-shaped objects, grooved or perforated at one end, mostly obtained from the surface of Florida shell-mounds; also stone masses of oblong or spherical form or egg-shape, encircled with a groove or pierced at the head, all of which possibly have been sinkers for nets in fishing, and forcibly suggest that use.

Natural Pebbles and Balls include a large number of symmetrically-shaped pebbles, found in Indian mounds, and serving the purpose of games of some sort, or valued for their form, with possibly a superstitious veneration.

Paint-cups are a series of very small cups or mortars, supposed to have been so used, made both of stone and earthenware.

Limonites are pebbles of this well-known mineral, selected apparently for their beauty of form. Many of them might have been used as paint cups, though generally too small to have been of service in that way. These have been gathered from mounds, as has also the class of *Mound Relics*, etc., which covers a mass of indiscriminate material, including fossils and concretions of ore and stone.

The following classes, *Beads of Bone, Stone, Shell, Glass*, sufficiently explain themselves. It should be observed that the numbers in the Table do not always indicate the number of the beads, which would otherwise amount to several thousands. Of the larger beads it occasionally expresses the number, but those from Florida mounds as often in compact masses incapable of separation, and with a vast quantity from Central New York, are only numbered by lots or parcels, and the same may be said of the strings of Wampum. In this case, as well as in those cases which have been previously excepted (Celts, Grooved Axes, Arrow and Spear-points), the Table affords no opportunity of estimating the relative prevalence of these objects.

The class of *Arrow Heads* is exceedingly numerous and of great variety of form. The name is given to all such objects as do not exceed two and a half inches in length. The subdivisions of this class are, 'Tiny,' being less than one inch in length;

'Small,' from one to one and a half inches in length ; 'Medium,' one and a half to two inches ; 'Large,' from two to two and a half inches. On the shelves these subdivisions are again arranged according to pattern, viz. : 'Triangular,' 'Lozenge-shape,' etc.

Spear Heads includes all spear-shaped objects exceeding two and a half inches in length. The subdivisions are : 'Small,' from two and a half to three inches ; 'Medium,' from three to four inches, and 'Large,' over four inches in length. These subdivisions are again arranged as to pattern, as in the case of Arrow Heads, such as, 'with or without Tangs,' 'Barbed and Unbarbed,' 'Lozenge-shape,' 'Triangular,' etc. It must be borne in mind that the names 'Arrow' and 'Spear' are applied to these objects from the white man's point of view rather than from that of the Indian. Many of the large Arrow Points were used as knives, scrapers and perforators, while the Spear Points, with very rare exception, must have been used as knives, considering the fact that Javelins or Lances were almost entirely unknown among the savages at the time of the advent of the European ; and it may also be observed that probably these chipped implements were turned out from the Indian workshop notched or tanged and ready for conversion into any state which the possessor or purchaser might desire ; that in fact these appendages constituted their normal condition, without regard to the use to which he might desire to apply them. The name 'Spear Point' has, however, become so universal for chipped implements apparently adapted to that use, that it does not seem desirable nor indeed possible to displace it by any other appellation. Several specimens of this class reach twelve inches in length, and one measures fifteen and a half inches.

Drills or Reamers are a class of flint or chert chipped implements designed to perforate any material by turning or punching. They number 327 in this collection, and in many cases retain the tang and barb belonging to the spear and arrow head from which they have frequently been fashioned. The subdivisions include the 'Double-end,' viz. : long and slender bars finished with the greatest care and pointed at both ends. 'Needle-point,' a beautiful and delicate point one-quarter of an inch in length upon the apex of an arrow-point, designed no doubt for fine thread-

work upon moccasins or belts. Six of these latter objects in this collection are probably unique. 'Pipe Drills,' long, flat bars, gradually broadening from point to butt, slightly concave on the sides, suitable for boring the stems of the massive stone calumets. One of this kind may be considered as unique, since the butt is furnished with a semi-elliptical blade with symmetrically rounded edge, suitable in shape to finish off the hollow of the pipe-bowl after being rudely excavated.

Scrapers is a class of small chipped flint or chert implements, no doubt used as the name implies. They are generally thin blades or discs worked to a sharp edge, and frequently show the notches peculiar to arrow and spear points, not for the purpose of hafting, but from being shaped from the normal forms before mentioned, or from arrow or spear points injured by fracture. These latter are subdivided as 'Notched'; the circular as 'Disc'; while others, with length exceeding breadth, and chisel-ends, are named 'Elongated.' These implements were indispensable adjuncts to the Indian artisan's stock of tools, and are exceedingly abundant, this collection including more than a thousand specimens.

Ornaments of Stone and of Bone are classes presenting such varieties of pattern as to be incapable of subdivision. They are mostly pendant in character, and very finely and delicately finished in attractive material.

Ornaments of Shell are of a like variety, and have a partial subdivision of 'Hair Pins' and of 'Engraved Discs.'

Recurring again to chipped implements, we have the class termed *Knives*, comprising all implements of stone which have generally been so named from the likelihood of their having served the Indian in that capacity. The subdivisions are: 'Ovate' or elliptical, 'Leaf-shaped,' long, narrow and pointed at both ends, and sides convex; 'Spear-shaped,' having parallel sides but one end pointed, the other square or slightly concave; and 'Semilunar,' a half-moon in shape, not chipped but rubbed smooth, and furnished occasionally with a ridge or rim along the upper margin for the better grasp of the hand. All the blades of this class are chipped down to extreme thinness, and the 'leaf-shaped,' in several specimens, exceed six inches in length by

three in breadth, one specimen being eleven inches by three in dimensions. This implement was quite as indispensable in the Indian life as the scraper, and the number in this collection is therefore very large, being nearly five hundred.

Flake Knives are unworked flint or chert or obsidian flakes, as struck from a core, and serving such a purpose. Excepting in States where obsidian is abundant, they are a somewhat rare object on this continent.

Flakers, or flaking tools, is the name given to short, thick rods of chipped flint or chert, presumably used in the process of chipping other flint implements. This term is applied by Sir John Evans (p. 369 of 'Ancient Stone Implements of Great Britain') to similar objects which he conceives to have been so used. They are about the size of a finger, are not cores, but have been chipped into shape with care and precision. In length they vary from two to four inches, and, so far as this collection is concerned, appear only in Missouri.

Cores and *Nuclei* are the blocks of chert, flint or obsidian from which, as their surface indicates, flakes have been struck. When of chert or flint they appear here only from Missouri, and when of obsidian mostly from Mexico and Central America. Their scarcity in the United States may be attributed to the collector possibly regarding them as worthless, but they are very rare in collections generally.

*Bunts*¹ is a term applied to flints shaped into convenient forms for storage or transportation, but as yet unformed as finished implements. The name has been used more than fifteen years, and comes to this collection from the previous owner of objects from Missouri which the writer secured by purchase more than ten years since. It served to particularize a series of flint blocks worked into merchantable shapes, to which no specific name had been given, and, though of itself not suggesting any characteristic

¹ Mr. John P. Jones, of Keytesville, Missouri, adopted this word 'Bunt' about twenty years ago. In 1880, when the writer acquired that collection, for the reasons above given, the name was retained in the same sense as employed by Mr. Jones. In 1878 it was used by Dr. Halde-
man ('Am. Antiquarian,' Vol. I, p. 79) as a synonym for the blunt Arrow Head, and recently in a like sense, by the writer on 'Stone Art' in the 'Thirteenth Annual Report of the Bureau of Ethnology,' 1891-92, p. 168. It does not appear as a dictionary word in any archæological sense, direct or implied, and its selection seems to be purely arbitrary. It would be interesting to know whether any other mention has been made of the word as an archæological designation, and whether Mr. Jones has not a prior claim to the use of the term 'Bunt' in the sense here employed, which certainly supplies a long-needed want in our nomenclature of Indian relics.

or quality of these objects, was yet so comparatively an unused word as to permit it to be adopted here, without conflict with any meaning otherwise likely to be confusing. The name has only been here applied to the Missouri specimens, other objects of the same class having been previously included among 'Implements of Stone.'

Shell Calabashes are, as the name implies, drinking vessels made from the large conch, by cutting out the columella, and trimming the edge to suit. They are from Florida sand mounds.

Ornaments of Gold and its Alloys include a large series of those objects, exhumed from Huacas, in South America, and a single one from the peninsula of Florida. They are massive nose and ear labrets, figures of gods, necklaces and rings, beads, hair pins of gold, more or less pure, and number 155 specimens.

Bronze Ornaments and Implements are objects in that material from Mexico and Peru.

Quippus and *Cloth* are from Peru.

The title *Flageolets and Whistles* comprises four of the former (from Mexico), and five of the latter from a Missouri mound. These whistles, made from limonites of pear shape, from which the clay core has been extracted, and the orifice trimmed to a sharp edge and perforated for suspension, are believed to be unique.

The next series is that of *Aztec Stamps and Seals*, of which there are 51 specimens, all from the valley of Mexico. They represent designs and patterns of great beauty, as well as figures of gods and animals, and are supposed to have been used for decorating the person in colors for public festivities.

Copper objects includes a moderate display of objects in that metal beaten into shape, and occasionally ornamented with raised figures. These objects have been subdivided into classes corresponding with those in stone, which they resemble. They are principally from Ohio.

The collection now under consideration closes with a most extensive and varied series of objects in *Hematite* and other *Iron Ores*. They number in all about eleven hundred specimens, of which about 1050 are in red hematite, and the balance in the brown hematite and other ores of iron. This is believed to be

the largest single collection of hematite objects in the country, and shows conclusively the appreciation of the Indian for beauty of form and symmetry in proportion, and that he spared no labor in expressing this feeling in the hardest and most obdurate material. These specimens appear to radiate from three great centres, viz.: West Virginia, southeastern Ohio, and central Missouri, and thence extend in diminishing frequency into the adjacent States. The subdivisions are, the natural nodules or 'Mineral Lumps,' the 'Paint Lumps,' whose surfaces show evidences of rubbing to obtain the paint so common among the tribes from Florida to the north and west; 'Balls and Hammer Stones,' shapes worked from the most obdurate ore; 'Grooved Axes,' from an ounce to eight pounds in weight, the largest being exquisitely polished; 'Celts and Cutters,' from half an inch to seven inches in length; 'Grooved Plummets and Sinkers'; a large number of 'Burnishers' of very varied shapes, and 'Pear-shaped Pendants,' finely proportioned, which may have been ornaments and yet possibly weights for weaving.

A few words upon the arrangement of this collection seem to be called for before concluding this article.

The purpose of the writer has been so to arrange the various specimens of presumably prehistoric Indian work as would enable the student of American Archæology to determine with the least labor to what class and subdivision of that class any object in his possession properly belonged, and by comparative study of the specimens in that class, to decide how they were used. For general anthropological purposes, a geographical arrangement seems to be most desirable and should by no means be disregarded. But in the study of special classes, the latter mode of arrangement presents the difficulty of accurately comparing characteristics when the specimens are scattered in small parcels through numberless cases in an extensive museum, and mingled with vast quantities of miscellaneous matter to which they have no sort of affinity, and which distract and confuse the observer. It seemed therefore desirable, that at least one collection should, in a circle of great educational centres, be arranged in this manner, and serve as a standard for all questions of classification throughout

that circle. These centres might be New York, for New England and North Middle States ; Washington for Southern States, and Chicago for the West. It must be obvious to all that the nomenclature of Indian Relics is at present in a very confused state. The names given by collectors and essayists to the objects they describe render it quite impossible, without a figure, to conceive the nature of those objects. In the present collection not only are the classes and their variations segregated as described, but a fixed nomenclature has been adopted based on the best authorities in American Archæology, except in a few instances where a more thorough study and later developments have shown the older designation to be erroneous. Hardly anything is so perplexing in the reports of field explorers as the names given to objects of their find, without a figure to guide the reader, nor is it more satisfactory to the student to read admirably illustrated essays emanating from sources of conceded high authority, where palpable misnomers are applied to the objects figured, and involve him in a sort of hopeless bewilderment.¹ A point in our knowledge of American Archæology has surely been reached when this matter of nomenclature could and should be definitely settled, and perhaps this could most effectually be accomplished by a committee appointed at an annual meeting of the American Association for the Advancement of Science, selected from the Section on Anthropology, who should consider the subject and report their conclusions at the next annual meeting of the Association.

As the Association includes members from our most prominent museums most capable of determining such questions, their con-

¹ A very able, interesting and instructive essay upon 'Stone Art,' in the 'Thirteenth Annual Report of the Bureau of Ethnology' (Washington, 1896), displays a series of misnomers exceedingly confusing to the reader. They occur between pages 121 and 125. Figure 135 is not 'Boat Shape' but a Gorget with 'expanding centre.' Fig. 136 is not a 'Gorget.' It is represented in this collection by seven specimens, resembling the longitudinal half of an ordinary peg-top, and never perforated, but with or without a groove at one or both ends. They are all from Ohio, and would be termed 'Pendants' or 'Plummets.' Figs. 137 and 138 are unquestionably 'Boat Shaped Implements,' not 'Banner Stones.' Fig. 139 is not a Banner Stone nor 'Reel Shape,' but a 'Pendant.' Fig. 140 is a Banner Stone, though it does not comply with the description in the text. Fig. 141 is a Banner Stone of 'conical' outline and not 'crescent.' Figs. 142 and 143 are Banner Stones of 'Butterfly' pattern and not 'crescent.' Fig. 144 is a Banner Stone, 'Reel-shape' and not 'Butterfly.' Fig. 145 is possibly a 'Single Arm' Banner Stone, provided no evidence appears of fracture of a companion arm. Fig. 147 is a Banner Stone, 'Curved Pick' pattern, and in no sense 'Boat Shaped.' Fig. 148 is also a Banner Stone, of 'Semilunar' pattern and not a 'Boat Shape.' Fig. 150 is a Banner Stone of the 'Pick' pattern. Fig. 149 is a Banner Stone of the 'Bird Wing' pattern, and not a 'Pendant.' It is quite unaccountable how such errors should have crept into an otherwise valuable contribution to our literature on Indian Art on this continent.

clusions would carry decided weight and relieve the student from much that is at present annoying confusion and perplexity, to say nothing of supplying a satisfactory basis for the records of field exploration.

TABLE SHOWING THE GEOGRAPHICAL DISTRIBUTION OF AMERICAN INDIAN RELICS IN THE COLLECTION OF A. E. DOUGLASS, AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK.

[illegible]

