

PEABODY PUEBLO EXHIBIT.

Rare and Interesting Archeological Relics from Southwestern America at the Museum.

By GEORGE GRANT MAC CURDY.

The archeological and ethnological problems of the New World are many and of unusual interest. Of the special fields for research none are more promising than our own Southwest, a land abounding in ruins of ancient pueblos and still inhabited by town-building Indians, some of whom at least are descendants of the earlier inhabitants. The region in question is confined principally to Utah, Arizona, Colorado and New Mexico. Parts of it were visited in A.D. 1540, by the Spanish conquerors, who make mention of then existing ruins. Other parts were not explored until long after the United States took possession in 1848.

The chief hindrances to archeological research have been three. In the first place, the great canyon of the Colorado is a chasm across which lines of travel cannot be thrown. Through routes to the Pacific have had to go either north or south of it. Secondly, the land has been held, until recently, by bands of hostile Indians; and lastly, the annual rainfall, except in the mountains, is so light as to render travel hazardous.

Our knowledge of the ancient as well as of the modern pueblos is due to the work of the Bureau of American Ethnology, begun nearly thirty years ago, and to that of certain museums. Among the latter may be mentioned the United States National Museum, the Peabody Museum of American Archeology and Ethnology at Harvard, the American Museum of Natural History, New York, and the Field Museum of Natural History, Chicago. Through these institutions, large sums of money have been spent in systematic excavations and in the publication of results.

During all these years, the Yale Museum has done nothing for the archeology of the Southwest—no field work, no collecting, no publishing. But fortunately, an alumnus of Yale has been at work. Dr. T. Mitchell Prudden, of the Class of '72 S., formerly of New Haven, now of New York, has spent several summer vacations chiefly in the region of the

Bibliothèque Maison de l'Orient



150703

San Juan river and its tributaries, mapping and studying the ruins and making collections. His results were recently published in the form of a paper on *The Prehistoric Ruins of the San Juan Watershed in Utah, Arizona, Colorado and New Mexico*.* He gave his valuable collection to the Anthropological section of Yale University Museum a year ago and also provided suitable cases for its installation. It is a rare combination of gifts that enables a son of Yale to finance his own expedition, publish his report and finally give his collection to strengthen a weak department of its Museum. On the other hand, it is unfortunate that the Anthropological department has no endowment to enable it to continue the work so happily begun by Dr. Prudden.

The collection, which has just been labeled, consists for the most part of pottery and textiles. The art of the potter and of the weaver are genetically related. Both attain their highest development among peoples with fixed abodes and both are affected by environment. In fact, the development of pueblo life was due to the desert environment. Communal life implies the storage of supplies—food and drink, the latter being especially urgent in an arid land.

The primitive vessel was the gourd. When the art of weaving water-tight baskets was developed, these naturally took the gourd-shape, which they have kept to this day. Water-tight osiery gradually replaced its prototype, the gourd, because of its superior merits. Being stronger and more durable, it bears transportation better and need not be so limited in point of size.

Still better adapted than either the gourd or the basket, for storage at least and for cooking, is the vessel of baked clay. There is every reason to believe that pottery was derived from basketry. Pueblo linguistics and the evolution of ceramic decoration support this view. When the late F. H. Cushing visited in 1881 the *Ha va su pai* of Cataract Canyon, Arizona, who until recently had been cut off from the rest of the world by their almost impenetrable canyon, they "had not yet forgotten how to boil food in water-tight basketry, by means of hot stones, and continued to roast seeds, crickets and bits of meat in wicker-trays, coated inside with gritty clay." The clay lining would grow hard from continual heating. If properly tempered it would become a perfect roasting vessel of itself, if by chance it became detached from the wicker matrix.

Basket trays and bowls are still used as forms and supports in the manufacture of pottery, and the pot is built up by the addition of ropes of clay after the fashion of coiled basketry, the only difference being that in the latter, stitches are required to hold successive coils together. Another significant fact is that in what is generally considered the oldest class of pottery, the coil is usually retained on the outer surface

* *American Anthropologist*, 1903, vol. v., 224-288.

as a means of embellishment; and, by means of indented patterns, is made to resemble very closely the patterns on wicker-work and coiled basketry produced by the use of materials of different colors.

There are three other well-defined ceramic groups, which may be given in order of sequence, as follows: Pottery with



ARCHAIC "COILED WARE" FROM BUTLER WASH, UTAH.

black decoration on a white ground; that with black decoration on a red ground, and pottery with black and white decoration on a red ground. All four groups (the coiled ware included) are represented in the Prudden Collection.

A fine example of the archaic coiled ware is to be seen in the photograph. This is the largest specimen in the collec-

tion, measuring over sixteen inches in height, with a maximum horizontal diameter of nearly seventeen inches. The ancient potter began by rolling out a long slender rope of clay, everywhere of uniform size. He then proceeded to coil this rope upon itself so as to form a disk. The overlapping of each succeeding coil, though very slight at first, became of necessity gradually more pronounced to form the rounded body of the vessel as its walls grew higher and higher. New fillets of clay were added with so much care that the continuity of the coil is nowhere broken.

The beautiful indented triangular patterns arranged in ascending, oblique, parallel series were produced by the tip of



WHITE WARE WITH BLACK DECORATION.

The pitcher is from Chaco Canyon, N. Mexico; the bowl, from Yellow Jacket Canyon, Colo.

the thumb or finger as each successive coil was applied. The result is that the upper half of each finger print is hidden beneath the succeeding overlapping coil. The fillets were so thoroughly welded together that the fracturing followed other lines rather than those of junction. While the corrugations of the outer surface were preserved and further embellished in response to the esthetic sense, the entire inner surface as well as the outer surface of the recurved rim were carefully smoothed with scrapers of gourd and earthenware.

Next to the coiled ware in point of age comes the white ware with black decoration. In order to develop a smooth surface as a field for painted decoration, the ornamental structural features had to be effaced. Then a white slip was applied and rubbed down with polishing stones. A black mineral color was employed in such a way as to produce attractive geometric designs. It is often difficult to determine which is intended as the delineating color and which the background.

Two types of black and white ware are shown in the photograph. The pitcher with black line decoration came from a burial mound in the Chaco Canyon, New Mexico, opposite the great ruined Pueblo Bonito. The large bowl in the same figure is one of the few that are decorated with life forms. The one here chosen is evidently the turkey. It is



A RARE DIPPER AND MUG.

From Southwestern Colorado. Black and white ware.

repeated on the opposite side. The ornamentation of the interior is purely geometric.

To the black and white ware belong other simple forms, such as dippers and flat-bottomed mugs, the shape of the latter reminding one of the typical German beer mug. Sometimes the handles of the dippers are hollow and contain pellets of clay that rattle when the vessel is shaken. The white ware with black decoration has been called by Holmes the pottery *par excellence* of the ancient Cliff Dwellers. It is also found in the ruined pueblos of the mesa tops and river valleys.

It has been the custom for archeologists to say that the ancient potters of the New World knew nothing of the art of glazing—a statement that will need to be revised in view of recent discoveries by Hewett and others. The first specimens found were considered intrusive; but the number collected to date is so great that the work must be accepted as pre-Columbian. The ruins in question are certainly pre-Spanish. The chief center for this ancient glazed pottery is the Jemez plateau, New Mexico. The glaze has been examined by Washington chemists and pronounced saline; it may have originated accidentally about salt works. Immediate firing after the application of a saturated solution would produce the glaze, which seems to have been used for decorative purposes rather than for rendering the paste

impervious. There is a single example of glazed pottery in the Prudden Collection.

The ancient Pueblos were also skilled in the art of weaving. Not many complete baskets have been preserved. The collection, however, is particularly rich in woven sandals, a dozen coming from Mummy Cave, Canyon del Muerto, New Mexico, alone. These with other objects were found by Dr. Prudden and his guides in the rubbish that covered the floor of a small room to a depth of about eighteen inches.

The leaves of the yucca furnished the material used in sandal making. These were prepared in various ways. Narrow leaves were employed whole and broad leaves were split into strips nearly an inch wide for the coarser twilled woven sandals. Again, they were hatched to produce a fiber that was spun and woven into elegant patterns. In these there are two or more layers of warp that give a compact and durable body. They usually show the effect of much wear, holes appearing in the heels first. Some specimens are handsomely edged and drawn at the heel. The toe-loop has been preserved in many. In most instances, the form is approximately square at the toe.

Of the stone implements in the collection, perhaps the most important is a hafted ax, found on the floor of one of the forty-four rooms of a cliff dwelling at the head of Gothic Wash, Arizona. The modern Pueblo Indians seldom, if ever,



ANCIENT PUEBLO SKULLS.

Showing typical artificial flattening of back of head due to cradle or carrying-board.

make stone axes, hatchets, mauls, etc., but content themselves with utilizing the ancient stone implements that they may be fortunate enough to discover.

There is space to mention but a single physical character of the ancient Pueblo race. Human remains, generally well

preserved owing to the dryness of the climate, have been found in many localities. They were so numerous under the floors of a great ruined pueblo in the valley of the Salado, Arizona, near Casa Grande, as to lead Cushing to give the place the name of *Pueblo de Los Muertos*, or town of the dead. In studying the skulls, it was found that a very large percentage were flattened in the occipital region. The flattened area varies in size and position, sometimes covering practically the entire back of the head. It may be equally divided by a median plane or may extend further on one side than on the other.

The same phenomena have been observed on ancient Pueblo skulls from near Zuñi, New Mexico, and Chaco Canyon in the same state. Two such skulls belong to the Prudden Collection (cf. photograph). The larger one was found on the mesa east of Hovenweep Canyon, Colorado; the smaller is from a burial mound on Montezuma Creek, Utah. The deformation is artificial. It may have been caused by the cradle or carrying board, and is evidently a case of unintentional artificial deformity.

It is a source of much gratification to all students of American archeology that the Government has taken steps which eventually will enable only properly qualified institutions to secure the treasures of the past for the enrichment of science, by the approval on June 6, 1906, of "An Act for the preservation of American antiquities." This Act authorizes the President, in his discretion, "to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments," etc.

By this Act, the Secretaries of the Interior, Agriculture, and War may grant "permits for the examination of ruins, the excavation of archeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions." Such permits are reserved only to those institutions that are qualified to do such work properly; and severe penalties are provided against vandalism and unauthorized gatherings. The Mesa Verde in southwestern Colorado, renowned for its ancient cliff dwellings, has already been set aside as a national park.

It is to be hoped that the Anthropological section of Peabody Museum may be able to profit by the enactment of so wise a law, by sending an expedition to the Southwest as soon as the Secretaries of the Interior, Agriculture and War have published suitable rules and regulations for the purpose of carrying out the provisions of the Act in question.