

**THE HOPI INDIAN  
COLLECTION IN THE  
UNITED STATES NATIONAL  
MUSEUM, PP. 235-295**

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## THE HOPI INDIAN COLLECTION IN THE UNITED STATES NATIONAL MUSEUM.

By WALTER HOUGH,

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### INTRODUCTION.

This publication aims to give an impression of the arts and industries of a tribe of Pueblo Indians at a period when they were little modified by outside influences. It may serve as a guide to the Hopi collection now exhibited in the Natural History building of the United States National Museum. Handbooks of this character which are made up virtually of extended labels of the collections are projected for other sections of the exhibit of Ethnology.

The following descriptive label for the family group case displayed in the west north hall of the Natural History Museum of the Smithsonian Institution in Washington gives a brief account of the Hopi:

The Hopi Indians occupy stone-built villages in northeastern Arizona. They were first seen by white men in 1540 when Tobar and Padilla were dispatched by Coronado to visit them. On account of the isolation of their country, they have preserved to a greater degree than other tribes the arts and customs of the Pueblos. They are farmers and depend mainly upon corn for their subsistence. Among the arts in which they are skillful, are weaving, basket-making, and wood-carving, and in the minor art of cookery they are widely known among the Indians. The group represents the parching, grinding, and baking of maize which goes on in every household. A woman and little girl grind on the slanting millstones the corn prepared by the parcher. The baker spreads with her hand the batter on the heated stone slab and the result is the paperlike bread called piki. Another woman is weaving a basket of yucca leaves. The man brings in from the field a backload of corn ears and the boy exhibits triumphantly a rabbit which he has killed with the curved boomerang club peculiar to the Hopi.

### AGRICULTURE AND REARING.

Agriculture is the principal occupation of the Hopi. They are industrious and resourceful tillers of the soil under conditions which would seem hopeless to a farmer. Their efforts are principally devoted to raising corn, but wheat, beans, squashes, and common vegetables are grown. They preserve an agriculture of native cotton, *Gossypium hopi*, which they use for ceremonial purposes.<sup>1</sup>

<sup>1</sup> Lewton, F. L., The Cotton of the Hopi Indians: a new species of *Gossypium*, *Smithsonian Misc. Coll.*, vol. 60, No. 6, Oct. 23, 1912.

Corn is planted in the sandy soil along the washes, dependence for its ripening being placed on the winter snows and the summer thunderstorms. In spite of the conditions, large quantities of corn are produced. The fields are cleared of brush in February and leveled. Planting begins in April and the crop is gathered in September. Spring frosts and sandstorms are drawbacks to the success of the crops, and sometimes floods injure the low-lying fields. The tools used are a planting stick usually with wedge point (pl. 19, fig. 4), but sometimes having a blade (pl. 19, fig. 5). A hole is dug and from 6 to 12 or more grains placed therein and covered. The hills are about 6 feet apart. The plant is small and rarely 5 feet high, the ears shooting near the ground.



FIG. 1.—IRON BROAD HOE OF SPANISH PATTERN.

The field is kept clear of weeds by means of hoes, usually the heavy homemade blade of Spanish pattern, like those seen among the Rio Grande Pueblos (fig. 1), sometimes of wood (pl. 19, fig. 6), and anciently, according to tradition, of stone. These implements



FIG. 2.—HAND DIBBLE OF WOOD.

are smooth spatulate blades of fine stone (see Archeology, second floor, east side), found mostly in the northern cliff-house region, but never in ancient Hopi sites. The Hopi call them *wiki*, hoes, regard them as sacred objects, and place them on the altars of some of their ceremonies, but there is little evidence that the fine spatulate stones were actual hoes, though the Hopi may have anciently used stone hoes. The wooden hand trowel for tending plants appears to be a survival (fig. 2).

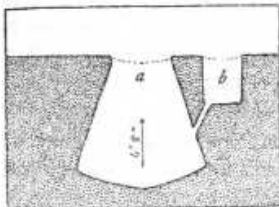


FIG. 3.—FIELD PIT OVEN FOR ROASTING GREEN CORN; a, FIRE PIT; b, FLUE.

Corn is gathered by removing the ears and transporting them to the pueblo in wicker carrying baskets on the back (see family group) or in blankets over the back or on the burro. The fodder is gathered by breaking off the stalks and tying them in bundles. It is usually almost valueless, as the leaves are frayed or whipped off by the wind. Much of it is used in the green state during the roasting-ear season, when a part of the crop is baked

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in field pit ovens (fig. 3), and either eaten at feasts or strung on cord to be dried for winter provision. Husking pegs of bone or wood have been observed among the Hopi, but it is not known that this implement is ancient. Corn ears are stored in the house in a place reserved for the purpose, is often sorted by the colors, and is occasionally taken out, sunned, and brushed to free it from dust and insects (pl. 20). It is also stored by crops, one year's being held over in case of failure due to a bad season. This custom is said to have arisen on account of famines, which have often plagued the Hopi in former years. Hopi corn is a pure breed of ancient strain, 12 rowed, white, yellow, red, carmine, dark blue, black, and variegated. The cobs are slender, the ears 5-7 inches long, generally perfect, and the grains regular and not indented (pl. 21).

The Hopi have also pop corn and sweet or sugar corn, both probably introduced. Sweet corn is referred to as the particular possession of the Middle Mesa Pueblo Shemopavi, where it is raised in some amount.<sup>1</sup>

In the cornfields scarecrows consisting of sheep scapulae, tin cans, etc. (pl. 22, fig. 3), are set up.

For cleaning brush from the fields, a curious rake-fork is used (pl. 19, fig. 1, Cat. No. 128767, collected by Mrs. M. C. Stevenson). It consists of a three-tined branch of a juniper tree, peeled, and across the tines is secured by lashing a strengthening rod of wood.

For picking the fruit of the prickly pear, wooden tweezers, *natcha*, are used (pl. 19, figs. 2, 3). The fruit is picked with the tweezers and rolled in sand until the spines are removed. The Navaho, Zuni, Pima, Papago, and other southwestern tribes use similar implements.

A great number of varieties of beans are grown by the Hopi and these form a substantial addition to their fare. They are named *pala moshri*, red beans, *avatch moshri*, speckled beans, etc., from their color or markings. Success also sometimes attends the planting of peas. Squashes, gourds, pumpkins, melons, and onions are raised. As in Mexico, the flowers of the squash are much appreciated as a dainty food.

Of cultivated fruits, the Hopi have only peaches which were introduced among the Pueblos several centuries ago by the Spaniards. The trees are planted on sand slopes below the pueblos and as there are no peach diseases or insect enemies in the region, they flourish to a considerable age. At this elevation, however (6,500 feet), frosts render the crop precarious. The Hopi are extravagantly fond of the fruit and a good yield is a matter of great rejoicing. The berries of the rhus and prickly pears furnish the only native fruits in the immediate environment of the Hopi.

<sup>1</sup> Collins, G. N., A drought-resisting adaptation in seedlings of Hopi maize, Journ. Agricultural research, Washington, D. C., vol. 1, No. 4, Jan. 10, 1914.



## DOMESTICATION.

At the time of the arrival of the Spaniards the Hopi had two domestic animals, the dog and the turkey. The dog appears to have been a short-legged species,<sup>1</sup> resembling a dachshund. The name given this animal is *poko*, which also means pet or attendant animal of the world quarter beings. Bones of the dog are not infrequently dug up. The skull of a dog was excavated from a grave at Chavez Pass, Arizona,<sup>2</sup> the specimen being polished, as though from use as a fetish or object of special care.

The turkey is the only bird that was domesticated by the American Indians north of Mexico. In the latter country the turkey was a familiar domestic animal, and in the Pueblo region the same condition of affairs seems to have prevailed since early times. The turkey is mentioned in the Zuni cosmogenic legend, and its tail-feather markings are said to be caused by the slime of the earlier wet world. It is a sacred bird, probably never eaten but preserved for its feathers, which were used both for ceremonial and practical purposes in *palos* and in preparing the feather cord from which garments were constructed.<sup>3</sup>

The Hopi have received from the white man horses, burros, cattle, sheep, goats, pigs, chickens, and cats. It is difficult to say in what order the animals came into the possession of the Hopi, but in point of usefulness the smaller animals are first. (A bell of horns for grazing animals is shown in pl. 22, fig. 1.) The care of cattle necessitates the use of the horse, and it is probable that the Hopi acquired these animals late and never owned them in number. The burro, however, is an animal suited to meager environments, and has become inseparable from the Hopi economy. With the larger animals came rude harness, spurs, whip, hobbles, the lariat, and other articles connected with them (pl. 22, fig. 4).

In the humane treatment of animals the Hopi has much to learn. Horses are often overworked and starved, and the goad is sometimes cruelly used on the weak, jaded animals. Burros are "punished" for stealing, the penalty being the loss of an ear. Some old offenders have suffered the loss of both ears. The Hopi does not appear to be intentionally cruel; he is rather childishly careless of the rights of the dumb creatures under his charge. The equipments rendered necessary by the introduction of the horse are crude compared with those of the Navaho, and reflect the scanty resources of the Hopi and their incomplete utilization of the horse, again losing

<sup>1</sup> Lucas, F. A., A dog of the ancient Pueblos, *Science*, n. s., vol. 5, No. 118, April 2, 1897, p. 543-544.

<sup>2</sup> Fewkes, J. W., Two summers' work in Pueblo ruins, 22d Ann. Rept. Bur. Amer. Ethn., p. 27.

<sup>3</sup> Hough, Bull. 87, U. S. Nat. Mus., 1914, p. 71.

in comparison with the Navaho, who are the best horsemen in the Southwest.

The Hopi depend almost entirely upon their flocks of sheep and goats for the material for clothing and for animal food. The sheep apparently do not differ from those of the Navaho, whose flocks are mostly mongrel interbred animals whose fleece is coarse and full of chaffy useless fibers called kemp by wool graders. The fiber is very strong and serves well for the manufacture of coarse stuffs. Hopi sheep are herded with goats whose courage and aggressiveness serve to protect the weaker sheep. The flocks are constantly tended by herders while grazing. At nightfall they are driven into stone corrals, located on the wide ledges just below the pueblo. The herders are usually women and children, but the men also are charged with the responsibility when the numerous ceremonials do not require their attention. A crook is used in herding and the sheep are sheared with the iron shears of commerce. Sundry piles of stone set up in various places are said to be for the purpose of guiding the herders in driving their charges, probably with regard to the boundaries of communal or clan lands.

Chickens are kept in some number for eggs, which are sold to the white people when the latter can be induced to buy. Sometimes a coop is built on the house roof for the chickens, but usually they roost in the rooms. They do not thrive, principally on account of insect pests.

Dogs are plentiful in the Hopi villages, where they lie around sleeping in the shade all day. Their nocturnal habits appear in the excursions, yelping and fighting, in which they engage after sundown in the pueblos. They are mongrels of little use except as scavengers and for hunting rabbits. Cats are very scarce and die soon under the severe conditions as to food and water in the pueblos.

#### DOMESTIC ECONOMY.

The Pueblos are better provided with vessels for various domestic use than any other tribes, and this accords with their great advancement in domestic science. With apparently small advantages to be derived from an environment that seems to offer little for material needs, the Hopi present a striking example of resourcefulness. The chief necessity in this arid region is for containers adapted for water, salt, seeds, for cooking purposes, and other multifarious uses; and this need was supplied by pottery, which even at the earliest time at which the Hopi are known to investigators was greatly diversified in form, texture, and ornamentation. Plate 23 shows: Figure 1, a dipper; figure 2, a salt vessel; figure 3, a condiment bowl; figures 4 and 8, bottle forms for water; figure 6, spoon; figure 5, a water vase; and figure 7, a food bowl.

*Vessels of wood.*—Vessels of wood were uncommon and were usually procured only when natural shells or knots suggested the use as spoons or small bowls. The cottonwood, which may be termed the culture tree of the Hopi, decayed easily, forming hollow cylinders which were adapted with not much work to the shells of drums and gave this tribe their only idea of a boat, expressed in the snake legend. The roots of this tree being of even grain, soft and easily worked, were the favorite material for feather boxes and gaming cups. (See pls. 43, 48.) Feather boxes for holding the plumage necessary for *paños* and the decoration of religious paraphernalia are by far the most common wooden vessels employed by these Indians. (See pl. 43, figs. 2, 3, 4; and fig. 4.)



FIG. 4.—BOX WITH BUCK SKIN COVER FOR SACRED FEATHERS.

*Vessels of skin, etc.*—Vessels of skin, rawhide, or membrane were also of slight value in the Hopi domestic economy, and those now or recently found in the villages were of scrota of the domestic goat, made by distending the membrane with sand, leaving to dry, and fitting with a rim of bent branch of rhus over which the skin was turned and stitched with sinew. The Hopi, however, knew how to work rawhide into masks, decoys, etc.

*Gourds.*—The light, strong rind of the cultivated gourd marked this plant for a wide range of usefulness among the Hopi. Despite the discovery of pottery with its attendant economies, the gourd continued in favor, its lightness and strength being valuable qualities, while its use was not superseded by basketry, which brought in vessels that were lighter than pottery and nonbreakable.

The species of gourd cultivated by the Hopi are small, and the imposing gourd vessels such as are seen about the Pima houses are absent from the Hopi economics. The small gourds, however, are very useful for many purposes, and the shell, which is more available and more easily worked than wood, has numerous applications. In connection with water the gourd is used for dippers (pl. 24, fig. 3, pl. 22, fig. 2) spring bailers, sacred water vessels (pl. 24, fig. 2) and canteens; for household use, as spoons, cups, and dippers; as tools, for pottery smoothers, and cups for paint; for special use, as seed bottles and vessels (pl. 24, figs. 1, 4, 5), medicine holders, powder horns, etc.; in music, as horns, trumpets, flutes, bells, and rattles; in games, as pea shooters, etc.; in religious paraphernalia, as parts of masks such as