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Notes On West African Crossbow Technology

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This brief paper will examine the origin, history, and multi-cultural sources of diffusion of this ancient weapon to the southeastern United States. Though long classified as obsolete, two distinct forms of the crossbow (orarbalest) continued to survive as examples of traditional material culture in isolated areas of this region until the twentieth century. As will be discussed, certain design details of one of these forms may have been derived from or influenced by technology from West Africa. It is emphasized that the body of available literature concerning traditional crossbows as they occur in both this country and in portions of west-central Africa is exceptionally limited. Hence, it should be understood that the present comments, and the conclusions drawn therefrom, are tentative in nature. They are presented as working hypotheses based upon available information to encourage other researchers to seek out additional documentation concerning, and extant examples of, these relict weapons.

In its most elemental form, the crossbow has been described as ". . . a projectile weapon equipped with a bow, but having in addition a stock set at right angles to the bow, and a string-catch which holds the bow string in a drawn position until the weapon is shot" (Wilbur 1937:427). Though popularly associated with the European Middle Ages, the crossbow possesses great antiquity. Believed to have originated in China, the crossbow was already a standard infantry weapon in that nation's military forces at least as early as the fourth century B.C. (Wilbur 1937:428-429). Evidence places the arrival of this implement in the ancient Mediterranean world (Egypt, Greece, Rome, etc.) during the fourth and fifth centuries A.D. (Wilbur 1937:430,437) and western Europe by the end of the tenth century (White 1962:35). Despite their awkward attributes and relatively slow rate of fire, crossbows had two distinct logistical advantages over the use of firearms: they were much less prone to malfunction in wet, rainy conditions and (of particular note) they required neither gunpowder nor lead, materials which were expensive and could not be readily produced. Though these ancient weapons coexisted in western Europe for almost three centuries (ca. 1200-1500) with early forms of matchlock, wheellock, and snaphaunce ignited blackpowder muskets, the crossbow as a military weapon was effectively obsolete by 1550; it appears only rarely in later accounts (Ball n.d.).

Scholars have long been aware of the occurrence of crossbows in a rather limited area of west-central Africa. Thought to have been introduced into the region by European merchantmen (variously attributed to vessels from Holland, Denmark, and Portugal) possibly as early as the fourteenth or fifteenth century (Balfour 1911 :642-643; Wilbur 1937:436), this weapon has been documented among a number of tribes and/or in various locales. Although likely an incomplete listing of their distribution and tribal associations, the majority of occurrences of this weapon in Africa are situated in the various nations adjacent to the northeastern shore of the Gulf of Guinea along the western coast of the continent. Specifically, these implements have been recorded among: the Fan, Ba-fan, and Mpongwe of Gabon; the Medjarnbi, Bakuele, Sanga, and Baya of the (French) Congo; the Fanwe of Spanish (Equatorial) Guinea; unspecified peoples on the island colony of Fernando Poo (Bioko Island, now part of Equatorial Guinea); the Ba-Kwiri, Yaunde, Bali, and Indiki of Cameroon; unspecified groups in Nigeria; the Yoruba of Niger; and the Mandingo of Benin (Balfour 1911; Powell-Cotton 1929). Significantly, this distributional area

has extensive overlap with the region historically known as the slave coast which extended from the mouth of the Volta River (Ghana) on the west to the mouth of the Niger River (Nigeria) on the east. This region covers the coastal portions of the present day nations of Nigeria, Benin, Togo, and eastern Ghana. It is more than reasonable to suggest that various tribesmen conversant with crossbow production were taken captive, sold as slaves, and transported along with their technology to the New World.

Though there are many variations of the specific features exhibited by these implements from tribe to tribe in their area of distribution in western Africa, the description of a crossbow collected in the late 1800's among the Fan of Gabon is generally representative of their typical configuration throughout the region. As described by Balfour, this weapon:

. . . consists of a short and very rigid bow, 25 1/2 inches across the arc, having a nearly rectangular section, stout at the center, and tapering towards the ends. The bow is not straight in the unstrung state, but has a set curve when free from strain. It is set symmetrically through a rectangular hole near the fore end of a slender wooden stock, measuring 50 3/4 inches in length, and is fixed with wedges. This stock is split laterally throughout the greater part of its length, so as to form an upper and lower limb, whose hinder ends are free and can be forced apart, while they remain united in the solid for [sic] end of the stock. When the two limbs are brought together, a square-sectioned peg fixed to the lower limb passes upward through the upper limb and completely fills up a notch situated on the upper surface behind the bowstring. The distance between the latter and the notch is 3 1/2 inches, and this represents the full extent of the draw. When drawn or set, the bowstring is held in the notch and the peg is forced downwards, causing the two limbs to separate. By bringing these together again, with a squeezing action, the peg as it rises in the notch forces out the bowstring, and in this very simple manner the release is effected (Balfour 1911:636-637).

The historical antecedents of this release system have been traced to an archaic type of European crossbow which survived in restricted areas of Norway until circa 1900 where it was utilized for the killing of whales trapped in fjords (Balfour 1911:644-647).

Available information concerning the appearance and distribution of crossbows in the southeastern United States suggests that these relict items of material culture survived in a limited number of areas as a result of a combination of two conditions: (1) isolation -- either physical or social, and (2) "hardtimes", generally definable as scarce resources, lack of ready cash, and limited access to outside markets (Ball n.d.). Crossbows as examples of traditional material culture within the region have been reported among Anglos in southern Appalachia (Irwin 1983:103-108; Wigginton, ed. 1980:178), and two Native American groups, the Rappahannock of Virginia (Speck et al. 1946:10), and the Catawba of South Carolina (Speck 1946:11). Examples reported in Appalachia have consistently exhibited a "trigger" (string release) mechanism built into the weapon's stock (Irwin 1983). Such a feature appears to be an adaptation of the trigger and rotating nut system routinely incorporated in crossbows of typical English/western European design (Payne-Gallwey 1976). In marked contrast, the crossbows documented among east coast Native American groups display a much simplified string-catch system consisting merely of a notch cut into the upper surface of the stock; release was accomplished by directly manipulating the string with the thumb or fingers. It is this release

system which appears to have been influenced by and modified from technology derived from Africa.

Unlike examples documented in southern Appalachia, crossbows as recorded among Native American groups along the central portion of the east coast displayed a much less complex string release system. Based upon fieldwork conducted in the period 1941-1942, Speck offered the following description of crossbows as they existed at that time among the Rappahannock Indians near the community of Indian Neck, King and Queen County, Virginia:

. . . though . . . relegated to the status of a toy, (the crossbow) is part of the traditional store of knowledge. The stock is cut from a rectangular piece of yellow pine, measuring about three feet in length, about four inches high at the butt, tapering slightly toward the front. A groove is cut along the top extending some seventeen inches from the front. This serves as a guiding channel for the arrows. A notch, seventeen inches from the rear of the stock, holds the bow string when the bow is set. A square hole of proper dimension to hold securely, by wedging if necessary, the squared grip section of an ordinary bow is cut in the stock about nine inches from the front. To operate, the crossbow is held to the shoulder in the manner of a gun. The bow string is placed in the notch. By pushing the bow string from the notch with the top of the thumb, this manual trigger releases the string and discharges the arrow (Speck et al. 1946:10; emphasis added).

Crossbows of generally similar design were also recorded by Speck among the Catawba Indians of York County, North Carolina, during the course of fieldwork undertaken during the period 1913-1942. These items, as they then existed, were described as:

The Catawba form of the object shows the simple hickory bow, four and a half feet long, set in a notch on the underside of a stock of yellow pine twenty eight inches long. A nail driven through the stock holds the bow tightly in the notch. The bow string, now of commercial cord, was formerly of rawhide, silkweed fibre, devil's shoestring or mulberry roots soaked in water and twisted.

The latter is remembered to have been serviceable only when it was kept wet to avoid its cracking through brittleness. The string passes completely over the rear end of the stock where it rests taut, in a notch. The arrow rests in a groove cut for two thirds the distance of the upper side of the stock. The bow is accordingly kept under tension until the arrow is ready to be discharged. The arrow is of the ordinary form, cane or sourwood. When ready to release it the shooter loosens the bowstring from the rear notch, fits it to the nock of the arrow and shoots it as he would with the simple bow, the nock of the arrow between the two fingers which draw the string. The release is, to say the least, clumsy and would require a dexterity which no one now has. Sam Blue is shown in a pose with a specimen which he made and which he could shoot to some distance, though without accuracy. None of the young men on the reservation knew of the crossbow except by hearsay (Speck 1946: 11; emphasis added).

The introduction of the crossbow into the area now comprising the southeastern United States may be attributed to three likely sources: Spanish and English explorers and settlers, and slaves imported into the southern colonies from West Africa (discussed in greater detail in Ball n.d.). The absence of significant Spanish cultural influence within present day North Carolina and

Virginia, in concert with the dissimilarity of these modified notch release examples with typical English derived designs, would mitigate against influence from those traditions. In support of possible African derived influence, it may be noted that by 1831 a number of the remaining Native American groups in eastern Virginia, the homeland of the Rappahannock, had ". . . become much mixed with negroes" (Swanson 1946:175) and anthropologists and cultural geographers have recorded a large number of colonial-era derived remnant mixed-blood populations within the region scattered throughout Maryland, Virginia, West Virginia, both Carolinas, eastern Tennessee, and eastern Kentucky (Berry 1963; Gilbert 1949; Price 1953). Though the Catawba did not historically intermix with the slave population of North Carolina, they were obviously situated in a region known for its plantations and would reasonably have been exposed to technological influences from the groups surrounding them.

Available descriptions of crossbows as they occur in western Africa and among Native Americans in the southeastern United States are sufficient to postulate the transmission of a type of this weapon into the New World by slave populations and the adoption of an altered form of that technology by various indigenous tribal groups. Despite featuring a crude facsimile of the gunstocks used by their Anglo neighbors, the utilization of a simplified notch string release system (less the split stock and release peg exhibited in west African examples) may be interpreted as a modification of a much older design which had effectively been abandoned in Europe by the time of the New World entrada yet continued to flourish western Africa until at least the 1920s (Powell-Cotton 1929). Though it is but a small example of transplanted technology, further research on this topic may potentially further reveal a heretofore unheralded example of African-American contributions to the cultural mosaic of the material folk culture of the United States.

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