Introduction

The nature of North American Indian cultures at the time of European contact in the fifteenth and sixteenth centuries is poorly understood. Europeans who first entered the New World were, for the most part, untrained in scientific observation. In addition, depopulation from introduced diseases caused rapid changes in traditional Indian lifeways. This drastic reduction in populations forced abandonment of ancient homelands; emptying of towns; and devastating economic, religious, and political restructuring. Warfare against superior numbers of Europeans and advanced military technology shattered the societies that remained.

One fact, however, stands strikingly clear: At the time of contact, warfare was endemic among the North American Indians. (See Holm 1996 for further discussion and sources concerning early Indian warfare.) Hernando De Soto, one of the first to traverse Indian country in the Southeast, found rabid hostilities among neighboring groups. His chroniclers described a semiprofessional warrior caste and fortified villages. Later travelers reported the grouping of Indians into chiefdoms and large confederacies, both to better defend themselves and to aggress against others. The Chickasaw fought the Choctaw, the Creeks fought with the Cherokee, the Calusa battled with Timucuans, and at the time of contact, all northern Florida Indians hated the Apalachee. In the Southwest the Apaches fought the tribes of the Pueblos. On the Plains the Blackfeet fought the Crow, the Sioux fought the Cheyenne, and the Crow fought the Shoshone. Explorers like Henry Hudson in New York, Samuel de Champlain in Canada, and George Vancouver on the Northwest Coast reported a similar situation in terms of Indian relationships. The early accounts of Indian culture also depicted sophisticated offensive and defensive martial technology. The most complex, and to most contemporary Americans probably the most surprising, was the presence of armor among almost all Indian groups.

Given the significance of armoring in warfare and the obvious ubiquity of warfare in native American culture at the time of contact, one would

think that historians and ethnologists would have dealt with the subject exhaustively. However, in perusing the past several years of *American Antiquity,* I found no archaeologically related references to armor, and in surveying forty thousand citations in *The Ethnographic Bibliography of North America,* I encountered the word "armor" only once, in Hough's "Primitive American Armor," published in 1895 in the *Annual Report of the Board of Regents of the Smithsonian Institution*. Hough's report simply described the specimens of native American armor housed in the United States National Museum; no systematic survey of the topic was attempted. Frank R. Secoy (1953), in his classic *Changing Military Patterns of the Great Plains Indians,* devoted a handful of pages to Indian armor but, again, drew most of his references from the Hough article. This pattern of dependence on the Hough piece has been repeated in a number of scanty references to armor found in various "dictionaries" and casual accounts of American Indian lore and material culture.

Because a wide-ranging study of North American Indian defensive technology—armor, shields, fortifications—is lacking, this work will seek to fill that void with a systematic survey from the Southeast to the Northwest Coast, from the Northeast Woodlands to the desert Southwest, and from the Subarctic to the Great Plains. I will provide a preliminary step toward a broader ethnological investigation of the relationship among warfare, defensive technology, and the evolution of political entities. Likewise, the focus of this work will assist the understanding of the relationship of subsistence base to defensive technology, as well as to many other ethnological, historical, and ethnohistorical issues related to warfare.

Many questions that rely on a basic survey of information arise. What are possible diffusion routes of armor and general defensive technology coming into native North America from surrounding cultures? Did trade systems in which armor was a major commodity exist in North America? Is armor style related to subsistence activity? Under what conditions do shields evolve—change shape and size—and become mystical accoutrements of the warriors? It is to the service of such investigations that the material in this book is directed.

For example, John Keegan (1994, 139–142), when discussing fortifications in *A History of Warfare,* differentiates among refuges, strongholds, and strategic defenses and suggests that each form relates to a certain type of political environment. Refuges function as short-term defense and only work against an enemy without the means to linger in an area for long periods. Refuges simply have to deter an enemy from organizing an as-

sault. A stronghold, on the other hand, must be able to withstand attackers who can maintain supply lines to the siege site. Strongholds must be large enough to protect and house a garrison when under attack. They typically possess walls, towers, and some sort of moat—wet or dry. In the "strategic systems" type of fortification, multiple strongholds connect, much like a wall, to deny enemies access over a wide offensive front. Keegan concludes that refuges are most likely found in small-scale societies of the band or tribal type, whereas "Strongholds are a product of small or divided sovereignties; they proliferate when central authority has not been established or is struggling to secure itself or has broken down" (1994, 142). With regard to strategic defenses, he writes, "strategic defenses are the most expensive form of fortification to construct, to maintain and to garrison, and their existence is always a mark of the wealth and advanced political development of the people who build them" (1994, 142).

The application of Keegan's observations on fortification and political structure to the North American Indian scene depends, of course, on the presentation of sufficient information to be able to pursue his argument. This book seeks to fill this informational gap.

Throughout this volume I will use the term "warfare" in a very general sense to mean fighting among members of a specific social group or between two or more groups. A more refined rendering might consider "warfare" to mean a state-level form of massed social aggression involved with maintaining and supplying an army in the field, with the ultimate aim of occupying an enemy's territory, while "raids" can be described as military operations which, if successful, require only one strike. A "raid" might be seen as a message to a potential enemy to stop the behavior that is upsetting the attacking group. A "feud" is more or less a family affair. Classically, it is about the vengeance of kinsmen against those individuals who have assaulted the life or honor of the kin group. A "military demonstration" is a show, a display engineered to impress the enemy with the futility of further hostilities or to distract an enemy while the real strategy is being acted out.

Most North American Indian warfare was of the raid and feud variety, although true warfare, in which one group maintained concerted pressure on another for the purposes of genocide or the removal of a people from their territory, existed. In some places at some times, war was unremitting, while in others lack of defensive arrangements or the dilapidation of former stout palisades indicated a low level of hostilities. In some cases thousands of fighters were involved; much more often, however, the number

of combatants was much smaller. Martial demonstrations, most often in the form of dancing while brandishing weapons, were widespread. Often, too, the martial demonstrators carried shields and were accoutred in various types of armor.

The near universality of armoring the human body is not difficult to understand. Though humans have over the past millennia risen to dominate the creatures of the earth, they accomplished this not through the strength of their sinews or the toughness of their hide, but through their intelligence and symbolic ability, which enabled them to transmit learning from one generation to the next. Humans are, in fact, quite weak physically, vulnerable because they lack thick pelts or hard coverings to protect their skin from claws and ripping canine teeth.

It is possible that ancient humans first experienced armoring with the animal pelts used to cover their bodies. The earliest skin clothing was, no doubt, crudely produced, with the "finished" skin a stiff rawhide more reminiscent of shoe leather than the finely tanned, almost feltlike buckskin of many Indian cultures. The fine tanning of leather to a clothlike suppleness came later in time. The relative hardness of the earliest leather clothing possibly suggests that one could add harder and thicker coverings to protect the body from punctures, scratches, and cuts. Possibly those who experienced physical confrontation with their fellows discovered that a layer of rough leather offered some protection from harmful blows as well as the chance to fend off attacks and fight back. Perhaps from these early experiences, human armoring unfolded.

Native Americans never developed iron and steel technology and therefore lacked the ability to produce metal-plate battle dress, the type most familiar to Westerners. Their armor was constructed of wood and bone (hard armor), leather (soft armor), and combinations of hard and soft materials. But does that mean it was ineffective as body protection? Police today employ a variety of soft armor against the highly evolved weapons of modern-day criminals. Leather and wood can, in fact, be fashioned into effective body armor and withstand some of the sharpest cutting and puncturing weapons ever produced.

There are many examples of the effectiveness of leather armor. Roman models greatly influenced early European armor. A funereal figure from the Romano-Germanic Museum at Mainz depicts a Roman legionary of the first century A.D. clothed in leather. Records indicate that in Great Britain, Charles the Bald (ca. 850), borrowing ideas from the Roman Praetorian Guard, equipped his warriors with torso protection of hardened

leather, shoulder pieces of leather strips, a leather helmet, and half-leggings of leather. The ninth century saw the appearance of the byrnie, a leather jerkin inspired by the armies of the Eastern Roman Empire. The surface was layered with disks of horn and later of copper and iron. It allowed flexibility of movement while offering ample protection from sword cuts, spear thrusts, and even arrows (Martin 1967, 19). Into the twelfth century, only the knights and noblemen could afford the elaborate metal arms and armor which had evolved at that time, while the ordinary soldier continued to fight protected by a leather jerkin and leather helmet.

Records from the time of the Japanese Emperor Tenji (661–671) indicate that the earliest armor was constructed of leather. George Cameron Stone, in *A Glossary of the Construction, Decoration and Uses of Arms and Armor* (1961, 346), describes *kawara* (*kawa* meaning leather), a type of armor made of leather scales sewed on cloth. Hakuseki Arai, in *The Armor Book in Honcho Gunkiko* (1964, 17), states, "Ancient sheep-skin armor and cow-hide armor [were] worn by the warriors of Ono-no-Ason-Uyu during the Konin era and given to his two sons, Mutsu-no-Kami-Harueda and Tsu-shimano-no-Kami-Harukaze, who fought in the Jogen era (976–97)."

The history of traditional African battle dress opens with descriptions of leather battle accoutrements. In the first century B.C., Greek geographer Strabo described the Berbers of North Africa using white leather shields. Herodotus, the Greek "Father of History," noted four hundred years earlier the North African shields made of "ostrich skin." In 1275 Ali al-Janahani al-Maghribi visited a town in the northwestern Sahara:

> There are artisans there who make arms such as lances and the *lambda* shields. These latter are made from the skin of an animal called the *lamt* which is to be found only there. It is white in color, like the gazelle, but of heavier build. Its skin is tanned in their country with milk and the shell of ostriches' eggs for a whole year. Iron makes absolutely no impression on it. If it is struck by swords the swords glance off. . . . Shields and cuirasses [front and back torso armor] are made from it worth 30 dinars apiece. (In Spring 1993, 29)

The Language of Armor

Throughout this book various terms relating to armor will be used. In Western Europe metal plate armor was commonplace by 1250, reaching its peak of popularity by the mid-fifteenth century. At that time a full suit of armor, the "white harness" as it was sometimes called, weighed about sixty pounds and was composed of myriad named pieces: the *aventail,* a

curtain of mail covering the neck and shoulders; the *besagew,* a circular plate which hung over the wearer's armpit; the *bevor,* a metal piece to protect the lower face; the *charnel,* a hinge to connect the helmet to the breastplate; and the *cuisses,* protection for the thighs. Dozens of other terms described pieces protecting the elbows, kneecaps, feet, and hands.

In the Indian armoring repertoire, gorgets (armor for the throat) occurred in a variety of forms; helmets, both hard and soft, were widespread. There is some evidence of greaves, protection for the shin and calf. The cuirass was common. Leather jackets called arming doublets, which were worn underneath armor, appeared, as did leather bards, or horse armor. Breastplates, as the term suggests, covered the front of the upper body. Shields such as the pavise (a large rectangular shield used in siege warfare) and targets (small round shields) were ubiquitous. Cuisses (armoring for the thighs); cuir bouilli (hardened leather armor); gauntlets (protection for the hands); haute-piece (upstanding neck guard); jacks, jerkins, or doublets (jackets of leather); scale-armor (protection made of overlapping scales sewn to a cloth or leather garment); rod-armor (armor made of wooden dowels); slat-armor (armoring composed of numerous wooden slats sewn together); and the tasset (armor protection for the top of the thigh) were also found in North America.

Offensive/Defensive Spiral

The "offensive/defensive spiral" is constantly alluded to in the historical study of weapons of war: One side invents an effective offensive weapon; the opposing side creates a defense against it. The new defense is then trumped by a new offense, which is defeated by a new defense, and so on. The spiral is slowed only when one side can technologically place its offense and defense outside the technological response range of the opposing forces' offensive/defensive capabilities.

Leather armor in Europe was countered by advanced metalwork, swords and axes which could sunder and pierce leather. In the eighth century, coats of chain mail significantly defeated the cutting and piercing weapons of old. The blade makers advanced their technology to pierce mail. Iron plates responded to the new generation of mail-defeating cutting weapons. The crossbow countered the new plate armor, which increased in thickness and weight to overcome the bolts of the crossbow. The crossbow-defeating armor was then attacked by early firearms, which appeared in Europe at the beginning of the fourteenth century. In response, the defensive armor became even heavier. This advance was topped by ad-

vances in the evolution of muskets that could pierce armor plates. At this point offensive technology had outstripped defensive technology. Armor weighed sixty to eighty pounds and actually imperiled the wearer by rendering him slow and inflexible.

For a time armoring technology moved in two novel directions. Lighter armor continued to be designed specifically for the battlefield function of the soldier, and the light armor of the cavalry was modified for archers or cannoneers. Secondly, full "white harnesses," suits of armor which were militarily functionless but which were used by nobility both as a visible statement of wealth and status and for ceremonial events, were created.

In the late nineteenth century, soft armor was manufactured from silk for law enforcement agencies and the Secret Service. First explored by the medieval samurai of Japan, silk armor successfully protected against cutting blades and low-velocity bullets, but, of course, the next generation of handgun bullets pierced it. In the early 1900s, "bulletproof" vests were implemented by the FBI, but they proved cumbersome and ultimately useless against the increased power of criminal ordnance. World War II saw the invention of the "flak jacket," constructed of ballistic nylon. It protected against pistol and rifle fire but was impractical for use outside the military. The failure of hard armor in Europe before advances in gun ammunition was re-created in the United States; the technology could block the bullets but became too heavy to be useful.

A new technology had to be found to break the offensive/defensive deadlock. In the 1970s DuPont introduced Kevlar ballistic fabric, the choice for most law enforcement agencies today. But inevitably, the criminal use of high-capacity semi-automatic weapons and "cop killer" bullets is challenging the most modern ballistic fabric. The offensive/defensive spiral is inescapable.

Defeat of Indian Armor

The armor of the Indians withered before the same forces that defeated plate armor in Europe and at about the same time. If Native Americans had evolved metallurgy and the ability to manipulate iron and steel, the struggle with the European invaders would have been somewhat protracted; but, of course, the end result would have been the same because of the overwhelming population numbers and overall technological, political, and economic complexity of the European culture. When plate body armor confronts the gun, only one possibility results; at some point in the evolving relationship, the body armor will be pierced by the bullet.

Sir Walter Raleigh's Roanoke Island colony in the latter 1500s offers an example of the kinds of weaponry used to ultimately defeat Indians of the area. Indian offensive weapons included the wooden sword, club, bow and arrow, and stone knife. Defensively there was the scattered use of the rod-armor cuirass (wooden dowels sewn tightly together for protection of the upper front and back torso) and wicker, wooden, and leather shields.

The hundred or so military personnel at the Roanoke Island colony carried steel swords and daggers and wielded nine- to ten-foot pikes and halberds, long-shafted weapons that combined the spear and the axe. Neither longbow nor crossbow is mentioned directly, but oblique references allude to their presence. A seasoned bowman could fire six or seven arrows in less than a minute and exceed distances of 200 yards. The longbow could fire farther and more accurately than the firearms of the period.

More significantly, the Roanoke Island colony personnel possessed several kinds of firearms, including wheel-lock pistols. The arquebus was approximately sixteen gauge and was accurate up to 50 yards. The musket of the period weighed up to 20 pounds and usually required two men to operate. The colonists used a variety of small cannons that shot 4-, 5-, 7-, and 9-pound balls, as well as sharpened bolts, large buckshot, and chains.

The soldiers of the colony were armored, wore metal helmets, and carried targets, which were small, round shields. The Indians, after fighting against the metal armor of the colonists, concluded that it had no great value. John White left a metal corselet at the colony when he departed in 1587. When he returned three years later, he found the corselet disintegrating with rust. The Indians had not even bothered to pick it up.

Gonzalo Mendex de Canzo wrote to King Philip III in 1600 and argued for the wider use of *escupil* (quilted cotton armor):

> For war with the Indians no other armor except this is of any value. As for the coat of mail, the arrow could go through it and splinters of it would be very dangerous; the buffalo-leather coat designed to absorb sword-cuts is pierced very easily; and the corslet is very dangerous, moreover, if the arrow hits it will re bound and injure the next person. It is clear that the *escupil* is the best armor because the arrow is stopped by it and sticks. (In Evans 1997, 3)

Symbolic Armor

In almost all cases, when armor outlived its usefulness on the battlefield, it remained in a modified but predictable form: It became a symbol of male

military and political power. The overelaboration of functionless "white harness" suits of armor in Europe by the sixteenth century has been noted above. The wearing of such armor signaled status and wealth.

The devolution of the gorget is tracked by Warren Moore (1967) in *Weapons of the Revolution.* Prior to the mid-eighteenth century, the gorget played an important part in defensive armor, but by the time of the American Revolution, though full body armor was rare, the gorget remained regulation for officers in the British army. From about 1702 to 1768, the British gorget was shaped like a wide crescent and hung from the neck by a ribbon. After 1768 it was fastened to the lapel or collar buttons. Moore concludes, "Generally speaking, the gorget was no more than a symbol of rank for officers of all the armies participating in the American Revolution. As such, it has lingered on through the years, and while officially abandoned by the British army in 1830, it is still worn by some armies today" (1967, 185).

Just as rulers in Europe would wear outmoded suits of full armor for ceremonial occasions, so, too, Asanti kings of eighteenth- and nineteenth-century Africa danced with a sword in the right hand and an *ekyem,* or battle shield, in the left when they ascended to the throne. Both weapons had been militarily obsolete for over a hundred years. Elaborate suits of armor were symbols of power and authority in Japan even after the entrenchment of firearms in that country's military. It will likewise be seen among the Indians that certain items which appeared in historic times as mere traditional costume adornment may well have been the last gasp of ancient armor in symbolic form.

Organization of Materials

The following material will be organized for convenience of presentation by culture area. The concept is based on the assumption (not always demonstrable) that certain ecological zones—desert, woodlands, coastal, etc.—seem to correlate with specific cultural types: High Plains tribes are bound to be buffalo hunters, riverine tribes are bound to include fishing in their subsistence repertoire, and so on. These "culture areas" are necessarily abstractions of the ethnologist; therefore, the precise boundaries of the areas vary with the expert. For example, A. L. Kroeber, when preparing to discuss the California Culture Area in *Cultural and Natural Areas of Native North America,* wrote:

> Otis T. Mason made his California area include Oregon. Wissler makes it coterminous with California, except for excluding the southeastern corner

> of the state and including western Nevada. My classification gives southern California to the Southwest, the northwestern corner to the Northwest Coast, the northeastern, as just discussed, to the Great Basin, the eastern or trans-sierra fringe also to the Basin. (1939, 53)

Since the main thrust of this work is simply to identify and catalogue Indian defensive technology to create an informational base for later more elaborate and focused studies, my culture areas will be very broadly conceived: Southeast, Northeast, High Plains, Prairie, Northwest, Southwest, California, Basin/Plateau, and North Pacific. In addition, since the accounts of early defensive technology are rare, the conclusions drawn from them are always suspect because the sample is so small. Further, the descriptions that do exist are often vague. Some authors, for example, use the terms "rod" and "slat" interchangeably when speaking of wooden armor even though they are, in fact, two different forms of armoring. "Leather tunic" can mean many things, as can "rampart," "palisade," "bastion," "redoubt," and "stockade" when applied to fortifications.

Native North American Armor, Shields, and Fortifications

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