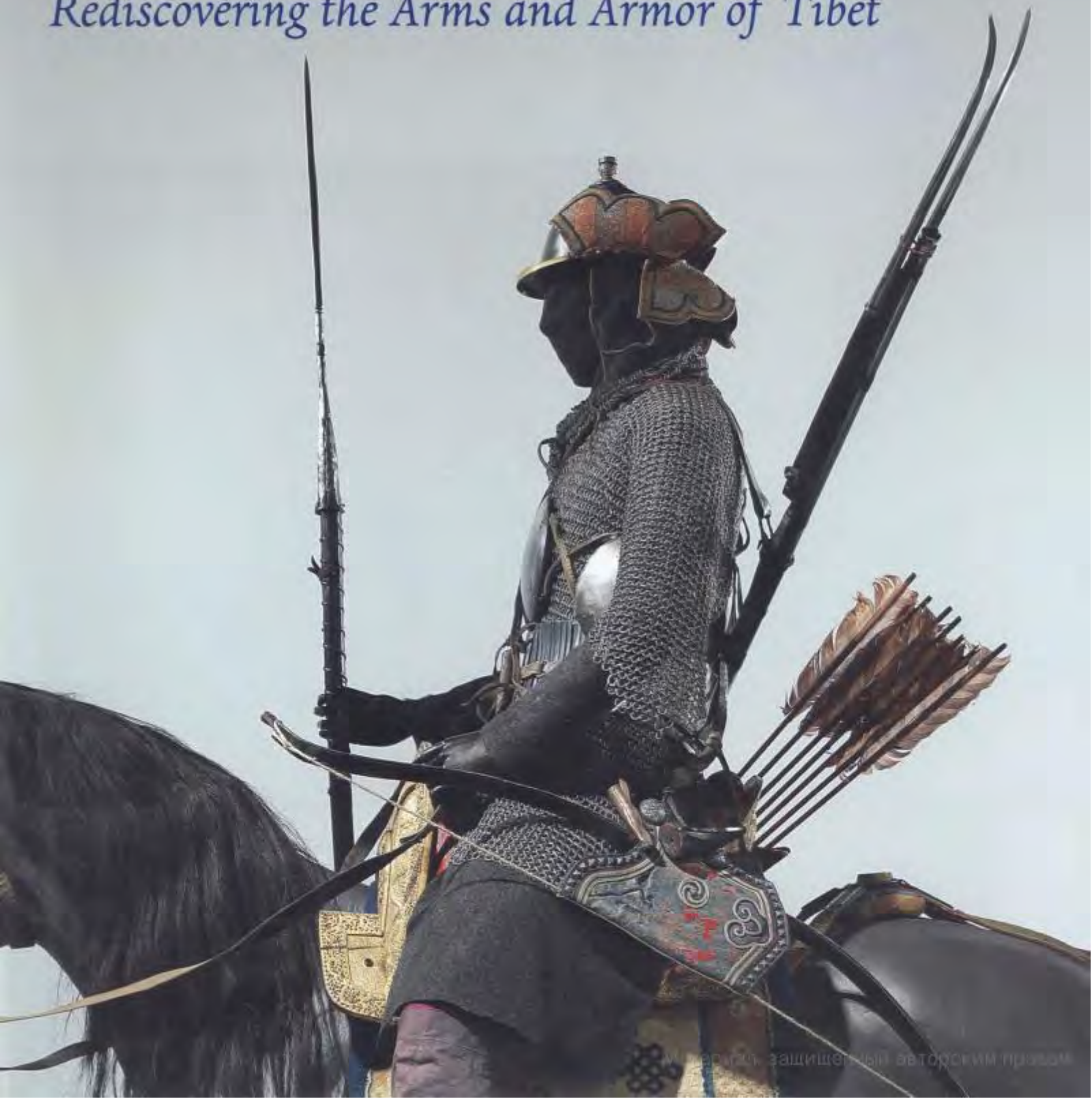
WARRIORS OF THE HIMALAYAS

Rediscovering the Arms and Armor of Tibet



REDISCOVERING THE ARMS AND ARMOR OF TIBET

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This exhibition offers the first detailed survey of traditional armor and weapons from the Tibetan plateau. It is based on the concentrations of this material found in The Metropolitan Museum of Art and a small number of other museums, particularly in Great Britain. Until recently these objects—helmets, armor, swords, firearms, saddles, and so on—were seen as following only a few well-recognized styles. When commented on at all, these artifacts have been categorized generally as both archaic and simplistic. However, the emergence during the past ten to twenty years of previously unknown and very early examples has called into question many accepted assumptions about the styles and dating of Tibetan arms and armor. A more careful appraisal reveals a far wider variety of cultural influences and date ranges, as well as styles, types, and materials used, than previously realized or expected. The results of a reexamination of the subject are presented in this catalogue.

The Tibetan plateau, the world's highest, covers an area roughly the size of western Europe and is legendary both for its elevation and its remoteness. It is bordered on three sides by vast mountain ranges—the Kunlun and Karakoram mountains to the north and northwest and the Himalayas to the south—and by the mountains and river gorges of western China on the east. Areas that are culturally Tibetan extend far beyond central Tibet and the current political boundaries of China's Tibetan Autonomous Region (TAR) to include parts of northwestern India, Nepal, Sikkim, Bhutan, as well as parts of Xinjian Uighur, Qinghai, Gansu, Sichuan, and Yunnan provinces of China. The traditional names for Tibet's principal regions are Ü (*dbus*) and Tsang (*gtsang*) in central and southwestern Tibet, Kham (*khams*) in the east, and Amdo (*a mdo*) in the northeast, the plains of Changthang (*byang thang*) to the north, and Ngari (*mnga' ris*) in the west.

Armor and weapons are certainly not among the images usually called to mind when considering the subject of Tibet, which has been identified most closely in recent decades with the pacifism and deep spirituality of the Dalai Lama and the compassionate nature of Tibetan Buddhism. The nuances and beauty of Tibetan culture, religion, and art have been brought to wide audiences through a steady flow of books, exhibitions, and films. The general perception of Tibetan arms and armor, however, stems from only two principal sources: the actual examples brought out of Tibet sporadically since the 1880s, which until now have remained largely unstudied and unpublished, and photographs taken in Tibet in the first half of the twentieth century showing armor and weapons being worn or displayed (figs. 2–8).

These photographs provide rare visual documentation of most of the distinctive types of armor and weapons that form the nucleus of this catalogue and exhibition. Among the earliest are two key photos taken during the Younghusband Expedition, a British military incursion into Tibet in 1903–4 (figs. 3, 4).[1] The weapons shown in them—swords, spears, and matchlock guns—were still in common use in Tibet and were only just then beginning to be replaced by modern small arms. The body armor for men and horses, by contrast, was photographed at the very last moments of its centuries-long history of use for actual defense in battle. Most of the later photos discussed below, still a rich source of information, show Tibetan arms and armor worn as costume in ceremonial contexts.

A summary of the armor and weapons of the Tibetans in 1903–4 was given by Dr. L. Austine Waddell (1854–1938), the medical officer attached to the Younghusband Expedition and the leading British Tibetologist of the time:

> *A few still wear iron helmets and cuirasses of the type familiar to us in medieval literature, consisting of small, narrow, willow-like leaves about*

Fig. 2. Armored infantryman (*zimchongpa*), wearing a Tibetan helmet and lamellar armor and armed with a spear and a sword. Photographed at the Great Prayer Festival in Lhasa, 1943, by Ilya Tolstoy. Ewell Sale Stewart Library, Academy of Natural Sciences, Philadelphia

Fig. 3. Armored cavalryman, wearing a helmet and coat of mail and armed with a spear, sword, and matchlock musket. The horse wears armor on its head, neck, and chest. Photographed in Tibet, 1903–4, probably by L. A. Waddell (photo: after L. A. Waddell, *Lhasa and Its Mysteries* [New York, 1906], facing p. 168)

Fig. 4. Armored infantrymen, wearing Tibetan helmets and lamellar armor and holding wicker shields and matchlock muskets. They are wearing their lamellar armor backward, which suggests that this was a staged photograph or that they were very raw recruits. Photographed in Tibet, 1903–4, probably by L. A. Waddell (photo: after L. A. Waddell, *Lhasa and Its Mysteries* [New York, 1906], facing p. 172)

1½ inch long, threaded with leather thongs. A few also wear coats of chain-mail. The iron helmet of the cavalry was distinguished from that of the infantry, who have a cock's feather, by a red tassel or peacock's feather on the top. The high officers sometimes clothe their horse in armour, a new set of which was captured. The clothing of the horses and saddlery of the leaders was artistic and full of colour, with good carpet saddle-cloth, throat-tassels, and massive bits and stirrup-irons, silver or gold inlaid, mostly from Derge in Eastern Tibet. . . . The weapons of the Tibetan warrior are numerous and picturesque. On his back is slung a matchlock or a modern rifle; in his hand he clutches a long spear; from his belt hangs an ugly long sword, one-edged, with a straight heavy blade. When guns are insufficient to go round, the remaining men carry bows and arrows, the latter of bamboo with barbed iron heads 3 inches long, also slings, and heavy shields, wooden or wicker-work, or hide with iron bosses.[2]

The "iron helmets" Waddell would have encountered were mostly of two kinds: a helmet with a one-piece hemispherical bowl (such as cat. no. 46) and the most typical form of Tibetan helmet, usually made of eight overlapping segments, as worn by the infantrymen in figures 2 and 4 (compare cat. nos. 1, 2, 4, 5). The "cuirasses of the type familiar to us in medieval literature, consisting of small, narrow, willow-like

leaves about 1½ inch long, threaded with leather thongs" refers specifically to what may be considered the classic form of Tibetan body armor, known in English as lamellar armor, and in Tibetan variously as *go cha*, *khrab*, or, more precisely, *byang bu'i khrab* (figs. 2, 4).[3] The "willow-like leaves" are the small iron plates (in English lamellae and in Tibetan *byang bu*), which are laced together to form the armor (cat. nos. 1–6). The "chain-mail," just discernible on the cavalryman in figure 3, refers to the meshlike type of armor made up of hundreds or even thousands of small interlocking iron rings (cat. nos. 40, 46). Known in English simply as mail, and in Tibetan as *a lung gi khrab*, most if not all of what was used in Tibet was probably imported from India or the Middle East.

Waddell's photograph of the armored cavalryman in figure 3 and his statement that the "high officers sometimes clothe their horse in armour" provide the only solid evidence for the continued, if limited, use of horse armor in a military context in Tibet up to that time, long after it had gone out of use in virtually all other parts of the world.[4] This highly distinctive form of horse armor was unique to Tibet, and very few complete examples of it have survived to the present day (cat. no. 26). The "saddlery" including "massive bits and stirrup-irons, silver or gold inlaid" (and presumably by extension the saddles themselves), "mostly from Derge in Eastern Tibet," present some of the finest examples of decorated Tibetan ironwork (for example, cat. nos. 112, 130, 135).

In terms of weapons Waddell's list begins with the matchlock, known in Tibetan as a *me mda'* (literally, fire arrow), a simple but reliable type of firearm used in Europe from the fifteenth to the seventeenth century and in Tibet from at least the seventeenth century until well into the twentieth (cat. nos. 99–102). The most obvious feature of the Tibetan matchlock is the pair of long thin prongs, used to prop up the weapon when shooting on foot as opposed to on horseback. In these and other photos the prongs are usually extended straight out when the gun is slung on the back (as in fig. 3) or folded under the stock (as in fig. 4). The long spear (*mdung*), such as that carried by the cavalryman in figure 3, could measure anywhere from 6 to 12 feet in length and typically had a wood shaft reinforced with a coiling iron strap (cat. nos. 75, 76). Beyond the plain fighting spears of this type, a wide variety of decorated ceremonial spearheads have come to light in recent years (cat. nos. 77–84). Waddell's description of the "ugly long sword, one-edged, with a straight heavy blade" could be applied to many of the workaday swords he must have encountered. This ignores, however, the great variety of finely made and elaborately decorated Tibetan swords (*gri*, *ral gri*, or *dpa' dam*), such as those described by the journalist Percival Landon, who also accompanied the expedition, as having "richly worked sword-hilts" (cat. nos. 61–67).[5] Waddell's comment that "when guns are insufficient . . . the remaining men carry bows and arrows" indicates that archery had already been replaced by firearms

Fig. 5. Opposing lines of armored infantrymen (*zimchongpa*), photographed by F. Spencer Chapman at the Great Prayer Festival in Lhasa, 1936. Pitt Rivers Museum, Oxford (1998.157.83)

as the principal projectile weapon, although the bow remained in regular use for hunting and sport (cat. nos. 95–97). He also mentioned slings (*sgu rdo* or *'ur rdo*), a common accessory used by herdsmen and nomads, which made an effective weapon when necessary. Waddell's summary concludes with shields (*phub*), "wooden or wicker-work, or hide with iron bosses." The wicker or cane shields (*sba phub*) were of two types, one flat and the other domed, both distinctively Tibetan (cat. nos. 24, 25). The "hide [shield] with iron bosses" describes the characteristic form of shields from India, Nepal, and Bhutan, which would not have been uncommon in Tibet.

The tantalizing but limited glimpse offered by the two Waddell photos is greatly increased just slightly later in the century by a rich source of photographs centering on the ceremonies included in the month-long Great Prayer Festival, or Monlam Chenmo (*smon lam chen mo*), which was held annually during the first month of the lunar year in the Tibetan capital, Lhasa. This elaborate series of events was well documented in photographs, especially those by Hugh Richardson, who observed some or all of the ceremonies on several occasions between 1937 and 1950, by Frederick Spencer Chapman in 1936, in still photos and film footage shot by Harry Staunton in 1940, and by Brooke Dolan and Ilya Tolstoy, who visited Lhasa in 1942–43.[6] Armor and weapons played an important part in the costume of two groups involved in the festivities: a body of infantry, known as the *zimchongpa* (*gzim sbyong pa*), and two detachments of cavalry.

The infantrymen wore lamellar armor and usually the most typical form of helmet, made of eight overlapping segments, and were equipped with a variety of swords, shields, spears, bows, and matchlock muskets (fig. 2).[7] Based on an analysis of the corresponding examples in this catalogue, most of the equipment of the *zimchongpa* appears to date from the mid-fifteenth to the early seventeenth century, an extremely tumultuous period in Tibetan history.[8] At the time the photographs were taken, the *zimchongpa* acted as a ceremonial guard troop for the Dalai Lama and the State Oracle on various occasions.[9] Their main performance, however, came toward the end of the Great Prayer Festival and consisted of a sequence of mock combats in which two opposing lines of *zimchongpa* engaged in verbal exchange, the spokesman from one side proclaiming the victories of his "army" and taunting the leader of the other side, followed by the opposing sides brandishing or discharging their weapons (fig. 5).[10]

Like the *zimchongpa*, the cavalry had very specific roles to fulfill during the Great Prayer Festival, including a ceremonial review of troops and their equipment and a horseback target-shooting contest.[11] It was the responsibility of various noble families to arm and equip contingents of riders for these events, probably continuing a practice formerly intended for the mobilization of troops in times of need. All of the riders were outfitted with generally the same types of equipment, the quality and condition of which, however, varied widely. The style and type of the equipment suggest that the standards or regulations governing it were established in the seventeenth or eighteenth century. The cavalrymen's armor basically consisted of a steel helmet fitted with textile flaps, a mail shirt, a set of "four mirrors" (four round plates strapped over the chest, back, and sides), and often an armored belt (fig. 6). Their weapons included a matchlock or modern rifle slung over the back, a bandolier with powder and shot for the musket, a spear, a bow worn in a bow case on the left hip, and a quiver of arrows worn at the right hip (fig. 7), all of which can be seen in catalogue number 46. The principal riders, who acted as standard-bearers, wore more elaborate armor and helmet crests. The largest and most decorative crests (fig. 8) were attached by a cord to the rider's thumb, probably to prevent the crest from falling to the ground if it became dislodged from the helmet. The rider in this image also wears what appears to be the most distinctive helmet seen in any of the Great Prayer Festival photos. In addition to the sumptuous crest and very large textile flaps, the helmet itself has a high, stepped bowl, which is decorated on the bowl, brim, and brow with designs of dragons and scrollwork, and has a domed finial of pierced iron just visible at the base of the crest. Unlike most of the helmets worn at this event, which appear to be Tibetan and Bhutanese, this helmet is probably Chinese or Mongolian, perhaps dating from the sixteenth century. It may have been one of the helmets specially issued from the treasury of the Jokhang Temple in Lhasa solely for use in the Great Prayer Festival as mentioned by Hugh Richardson.[12]

As the preceding comments indicate, the seeming paradox of the existence of any, let alone so many, examples of arms and armor from Tibet is no paradox at all when seen in the context of Tibetan history, which included many extended periods of intense military activity. A brief review of Tibetan history from the seventh to the early twentieth century makes this readily apparent.[13] During the Yarlung dynasty, from the seventh to the ninth centuries, Tibet was a powerful and expanding empire and dominated an area stretching from present-day Uzbekistan to western China through trade, politics, and armed might.[14] In contemporary documents, such as the Tang Annals, Tibetan armor and weapons were praised for both their high quality and their great effectiveness: "Their armor is excellent. They clothe their entire bodies in it, except for the eyeholes. Even powerful bows and keen blades can do them little harm. . . . They have bows and swords, shields, spears, suits of armor and helmets. . . . Both men and horses are covered in coats of mail of excellent manufacture."[15] Unfortunately, almost nothing of the armor or weapons from this period appears to have survived, or at least to have been identified as such. The only piece

Fig. 6. Armored cavalryman, wearing a helmet, shirt of mail, set of four mirrors, and armored belt, and armed with lance, bow and arrow, and gun. Photographed by Harry Staunton during the Great Prayer Festival in Lhasa, 1940. Pitt Rivers Museum, Oxford (1999.23.2.67)

Fig. 8. Standard-bearer wearing an elaborately decorated crest, helmet, and breastplate. Photographed by Ilya Tolstoy at the Great Prayer Festival in Lhasa, 1943. Ewell Sale Stewart Library, Academy of Natural Sciences, Philadelphia

Fig. 7. Armored cavalryman seen from the rear, wearing a helmet, shirt of mail, set of four mirrors, and armored belt. This view also shows his musket with a protective cover over the lower half of the stock, a bandolier, and other accessories. Photographed at the Great Prayer Festival in Lhasa, 1943, by Brooke Dolan. Ewell Sale Stewart Library, Academy of Natural Sciences, Philadelphia

in this catalogue tentatively attributed to that era, traditionally referred to as the time of the Three Ancestral Dharma Kings, is a helmet, which is a uniquely important example of its type (cat. no. 8).[16] In the seventh century under the first Dharma king, Songtsen Gampo, Buddhism, which would become the defining aspect of Tibetan culture, was introduced into Tibet. Also at this time the first Buddhist temples were built. The first Buddhist monastery in Tibet, Samye (*bsam yas*), was built in the 770s by King Trisong Detsen, who later made Buddhism the official religion of the kingdom. In addition, during this time Tibet was in frequent contact with China, the Uighur and other Turkic and Mongol peoples of the steppes, the burgeoning Arab caliphates then spreading into Central Asia, and the kingdoms in northern India and Nepal.

After the fall of the Yarlung dynasty, from the mid-ninth century until the advent of Mongol supremacy in the mid-thirteenth century, authority in Tibet was divided among many noble families and small states, which were frequently at odds with one another.[17] Descendants of the Yarlung dynasty relocated to western Tibet, establishing kingdoms that were instrumental in supporting a resurgence of Buddhism beginning in the eleventh century. During that century and the next, under the patronage of different noble families, various Buddhist sects or schools developed and in turn founded monastic orders throughout the country. In addition to the Nyingma (*rnying ma*) school, which traces its origins to Padmasambhava, one of the founders of Tibetan Buddhism in the eighth century, other important schools established at that time included the Kadam (*bka' gdams*), Sakya (*sa skya*), and Kagyu (*bka' brgyud*), from which there were several branches including the Phagmodru (*phag mo gru*), Karma (*ka rma*), and Drigung (*'bri gung*). The Gelug (*dge lugs*) school, which would eventually become the most influential, developed in the late fourteenth century. The larger monasteries gradually became increasingly important, not only spiritually but also as seats of economic and political power.

The thirteenth-century expansion of the Mongol Empire by the descendants of Genghis Khan (d. 1227) led to the conquest of China and the establishment of the Yuan dynasty (1279–1368). Again, few examples of arms and armor can be reliably identified as dating from this period. Among the pieces in this catalogue that can reasonably be attributed to this era or slightly later are an extremely rare multilame helmet (cat. no. 9), an exquisite set of damascened saddle plates (cat. no. 111), a similarly decorated sword (cat. no. 57), and two quivers (cat. nos. 91, 92), the quivers being perhaps the only extant examples of their type. During this period Mongol rulers controlled not only China and Tibet but also Korea, Persia, and Russia, and reached to the edges of Europe. A critical relationship was established at this time between the Mongols and Tibetan Buddhism, beginning with the abbot of Sakya Monastery, Kunga Gyaltsen (*kun dga' rgyal mtshan*, 1182–1251, known as Sakya Pandita), who was essentially made the representative of Mongol authority in Tibet by Godan, a grandson of Genghis Khan, in 1247. In about 1255 Sakya Pandita's nephew and successor, Phagpa (*'phags pa*, 1235–1280), became the personal spiritual teacher of Kublai Khan (1215–1294), who within a few years was the first Yuan emperor. Kublai later made Phagpa the official head of his civil administration in Tibet, in charge of the thirteen administrative districts (myriarchies) into which the Mongols divided central Tibet. An elaborately decorated helmet and a coat of plates said to have been given to Phagpa by Kublai Khan are still preserved in Sakya Monastery, Tibet.[18] While other Mongol princes were important patrons of different Tibetan schools, the Sakyapa wielded the greatest temporal power until after the death of Kublai Khan. However, the Yuan emperors following Kublai Khan gradually intervened less in Tibetan affairs, and without active Mongol support Sakya power waned in central Tibet.

In the next and very tumultuous period of Tibetan history, from roughly the middle of the fourteenth century until 1642, power was held by three successive secular dynasties, the Phagmodrupa, the princes of Rinpung (*rin spungs*), and the kings of Tsang. Most of the armor in this catalogue, including many of the most elaborate and unusual examples, appears to fall, not surprisingly, into this turbulent period: the distinctive examples of horse armor (cat. nos. 26–33), lamellar body armor (cat. nos. 1–7), several examples of leather armor (cat. nos. 34–39), and a remarkably diverse group of helmets (cat. nos. 10–18). By the middle of the fourteenth century, after a period of violent struggle, the preeminent position of the Sakyapa was taken by the secular arm of the Phagmodrupa, a branch of the Kagyu school. The leader of the Phagmodrupa was Changchub Gyaltsen (*byang chub rgyal mtshan*, 1302–1364), a member of the powerful Lang (*rlangs*) family, who ruled the Lhokha region south of Lhasa, including the Yarlung Valley. After gaining control of Ü and Tsang, Changchub Gyaltsen abolished many aspects of the Yuan-Mongol administration and instituted a revival of laws, customs, and literature modeled after the practices of the period of the ancient Tibetan kings of the Yarlung dynasty. By the late fifteenth century, after a long rivalry, the Phagmodrupa, who were allied with the Gelugpa, were supplanted by their former ministers, the princes of Rinpung, who were based in Tsang and supported by the Karmapa. In the 1560s the Rinpung were themselves supplanted by their ministers, who established the line of the kings of Tsang, the last native Tibetan secular monarchy, which remained in power for approximately eighty years. Although this was a period of incessant struggle between Tsang and Ü, the Ming dynasty (1368–1644) of China did not actively intervene in internal Tibetan politics. It did, however, expand upon the Yuan practice of patronizing monasteries and conferring titles and bestowing lavish gifts on Tibetan lay and religious officials.[19]

The level of political involvement changed markedly, however, early in the Qing dynasty (1644–1911) owing to renewed military activity by the Mongols in Tibet.

Active ties with the Mongols were reestablished by Sonam Gyatso (*bsod nams rgya mtsho*, 1543–1588), head of the Gelug order, who secured the patronage of the powerful Mongol ruler Altan Khan in 1578 and proselytized with great success in Mongolia for several years. The khan bestowed on him the title of *dalai*, meaning "ocean," in reference to the vastness of his spirituality, combined with the Tibetan term *lama*, for spiritual teacher or guru. As Sonam Gyatso was the third incarnation in the Gelug lineage, the title was conferred posthumously on his two predecessors, making him the Third Dalai Lama although the title had originated with him. After Sonam Gyatso's death in 1588, his reincarnation and successor was identified as the grandson of Altan Khan, Yonten Gyatso (*yon tan rgya mtsho*, 1589–1617), whose installation as the Fourth Dalai Lama solidified the bonds between the Gelug order and their Mongol allies.

Following the death of the Fourth Dalai Lama, armed conflict intensified between the Gelug and rival groups, particularly the Karma Kagyu in Tsang, who were supported by the king of Tsang, Karma Tenkyong (*kar ma btsan skyong*). Eventually, the Fifth Dalai Lama, Nawang Losang Gyatso (*ngag dbang blo bzang rgya mthso*, 1617–1682), turned to Gushri Khan, chief of the powerful Qoshot Mongols, for protection, and after several years of fighting, the king of Tsang and his allies were completely defeated. In 1642 Gushri Khan gave the Fifth Dalai Lama authority over all of Tibet, while retaining for himself the title king of Tibet and settling with his army outside Lhasa. This began the institution of the centralized rule of the Dalai Lamas, a practice that continued, with many vicissitudes, up until 1959. Due in part to Tibetan influence with the Mongol tribes on China's borders, the first Manchu emperor of the Qing dynasty, Shunzhi (r. 1644–61), reestablished ties with Tibet by inviting the Fifth Dalai Lama to Beijing, where he was received with highest honors in 1653. In general the last forty years of the Fifth Dalai Lama's reign were a period of great religious and administrative reform, which, despite border conflicts with Nepal, Bhutan, and Ladakh, was a time of relative peace and stability in Tibet.

By the early eighteenth century, disputes between the Fifth Dalai Lama's regent, Sangye Gyatso (*sangs rgyas rgya mtsho*), and Gushri Khan's successor, Lhabsang Khan, led to violent civil war in which the Dzungar Mongols, a powerful tribe of western Mongols, took the side of the regent. Because of the involvement of the Dzungars, who also posed a potentially serious threat to China, Emperor Kangxi (1662–1722) lent his support to Lhabsang Khan and his allies. Initially Lhabsang Khan was successful, defeating the regent and ruling Tibet as king from 1705 to 1717. In that year, however, Lhabsang Khan was killed and his Qoshot Mongols decisively defeated in a climactic battle with the Dzungars, who then occupied Lhasa. Within a short time the oppressive methods of the Dzungars led to a popular uprising. In 1720 a combined Qing and Tibetan army drove the Dzungars out and installed the Seventh Dalai Lama, Kalzang Gyatso (*skal bzang rgya mtsho*, 1708–1757), in Lhasa. This marked the end of the Mongols as a dominant military presence in Tibet and laid the foundations for future Qing influence. After a brief civil war in 1727–28, a Manchu garrison was established in Lhasa, and two resident Qing officials, called *ambans*, were also permanently stationed in the capital. After a long period of effective rule by the Tibetan minister Pholhanas (*pho lha nas*), followed briefly by his son Gyumey Namgyal (*'gyur med rnam rgyal*), the Seventh Dalai Lama assumed full administration of the country in 1751. It was also during this period that large, ethnically Tibetan areas of Kham and Amdo, which border China, were incorporated into the provinces of Sichuan, Yunnan, and Qinghai. Under Emperor Qianlong (r. 1736–96) China reached its greatest territorial expansion since the Yuan dynasty, incorporating Chinese Turkestan (Xinjiang Uighur) and Outer Mongolia into the empire. Tibet, however, was treated as an independent protectorate, with no attempt made to convert it into a province during Qianlong's reign.

Objects in the catalogue that reflect the role of the Qing during the seventeenth and eighteenth centuries include a finely decorated helmet (cat. no. 19), two elaborate saddles probably made in China for the Tibetan market (cat. nos. 120, 122), and swords made to be worn suspended from the belt in the Chinese fashion (cat. nos. 65–67). Also from this period or slightly later is the complete set of equipment for a cavalryman, showing the use of mail rather than lamellar armor, and the addition of a musket to the bow and arrow (cat. no. 46). Other than the very limited adoption of some modern firearms, the traditional armor and weapons outlined above remained in use in Tibet up to the early twentieth century.

In 1788, during the reign of the Eighth Dalai Lama, Jampal Gyatso (*'jam dpal rgya mtsho*, 1758–1804), the Gurkhas of Nepal invaded and occupied much of southwestern Tibet. The ensuing war lasted until 1792, when the Gurkhas were driven out by Tibetan troops assisted by a Manchu army. After Qianlong, and for much of the nineteenth century, the Manchus were too preoccupied with internal affairs and the growing involvement of Western nations in China to intervene actively in Tibet. As a consequence, Tibet's war with the Sikhs and Ladakhis (the Dogra War) in 1841–42, a second war with the Nepalese Gurkhas in 1855–56, the Nyarong War fought in eastern Tibet in 1862–65, and finally the Younghusband Expedition of 1903–4 were met without assistance from China. The period of waning Manchu influence in Tibet also coincided with the reigns of the Ninth to the Twelfth Dalai Lamas,

all of whom died young enough that Tibet was ruled by regents for virtually all of the nineteenth century, from the death of the Eighth Dalai Lama, in 1804, until the Thirteenth Dalai Lama, Thubten Gyatso (*thub bstan rgya mtsho*, 1876–1933), assumed full spiritual and temporal powers in 1895. The Thirteenth Dalai Lama's reign was the longest, the most active, and, in its later years, the most effective since that of the Fifth Dalai Lama in the mid-seventeenth century.

At the end of the nineteenth century in certain circles of the British government it was feared that the expansion of Russian influence and power in Central Asia would extend, or had already extended, deep into Tibet and thereby pose a threat to the interests of British India. Therefore, in 1903 a mission was authorized ostensibly to negotiate free trade agreements between Tibet and British India.[20] Led by Colonel Francis Younghusband and Brigadier General James Macdonald, the mission was a heavily armed expeditionary force that included approximately three thousand British troops, accompanied by several thousand native laborers who provided support, supplies, and transport.[21] After several failed attempts at negotiations and a few pitched battles, in which the Tibetans suffered disproportionately heavy casualties, the British entered Lhasa on August 3, 1904. Not wishing to be forced into negotiating a treaty, the Dalai Lama fled to Mongolia in advance of the British approach, where he remained until 1906, followed by stays in Amdo and Peking; he did not return to Lhasa until 1909. The British, meanwhile, soon departed, having secured a trade treaty from the government ministers in Lhasa and having failed to find any evidence of Russian complicity in Tibetan affairs. Probably on the occasion of the signing of the treaty, the regent of Tibet, Ganden Tri Ripoche Lozang Gyaltsen Lamoshar (*blo bzang rgyal mtshan la mo shar*), presented Colonel Younghusband and General Macdonald each with a gilded bronze statue of the Buddha.[22] It may have also been at this time that Macdonald acquired a Bhutanese sword of exceptionally fine quality (cat. no. 73). In 1909 Chinese forces invaded eastern Tibet and in 1910 reached Lhasa; the Dalai Lama was forced into exile once again, this time taking sanctuary with the British government in India, where he remained as a guest in Darjeeling. Only the Chinese revolution and the overthrow of the Qing dynasty in 1911 forestalled the invasion and allowed the Thirteenth Dalai Lama to return to Tibet in 1912. In gratitude to his British hosts, the Dalai Lama presented a complete Tibetan horse armor (cat. no. 26) to Sir Charles Bell, his principal host in Darjeeling. He also gave a large and important group of Tibetan objects and works of art to the king of England, George V (r. 1910–36), most of which was then put on long-term loan at the British Museum and the Victoria and Albert Museum. Among these were a lamellar armor and helmet, a sword, two shields, and a saddle said to be that of "the King of Rimpung," a reference to the Rinpung (*rin spungs*) family, which ruled central Tibet from the late fifteenth until the mid-sixteenth century.[23]

Because the contrast between the traditional arms of the Tibetans and the modern military equipment of the British was so great, the actions of the Younghusband Expedition briefly brought Tibetan arms and armor to the attention of the outside world. Attracted by the distinctive nature and rarity of the material, members of the expedition collected many examples, most of them initially as campaign trophies. The majority, however, soon went directly or indirectly into various museum collections in Great Britain, especially the Victoria and Albert Museum, the Tower of London, the British Museum, the Liverpool Museum, the Pitt Rivers Museum, and the Royal Scottish Museum. Although certainly the most dramatic, the Younghusband Expedition was not the usual or even the first means by which Tibetan arms and armor were collected in the West. The American diplomat and Orientalist William Woodville Rockhill (1854–1914) included several examples of swords, archery equipment, firearms, and equestrian equipment in the far-ranging collection of Tibetan material culture that he assembled for the Smithsonian Institution during expeditions in the 1880s and 1890s.[24] Likewise, the expeditions to China in 1901–4 and to China and Tibet in 1908–10, led by the noted Sinologist Berthold Laufer (1874–1934), were the means by which many examples of Tibetan arms and armor were added to the Field Museum in Chicago.[25] Some examples of arms were also included in the collections gathered by various missionaries working in China and Tibet, the most notable being that of Dr. Albert Shelton (1875–1922), which forms the nucleus of the very important Tibetan collection in the Newark Museum.[26] Other examples acquired by travelers, explorers, researchers, and collectors have continued to trickle into private collections and museums from the 1920s until the present.[27] The core of the holdings of Tibetan arms and armor in the Metropolitan Museum came from the private collector George Cameron Stone (1859–1935), whose extensive collection of approximately four thousand examples of non-European armor and weapons, including some fifty from Tibet, was bequeathed to the Museum in 1935. Stone bought widely from dealers and auction houses, both in the United States and abroad, and also purchased items personally during his travels.[28] A relatively large number of Tibetan works of art and objects of all kinds, often the personal possessions of Tibetan exiles, became available to collectors and museums following the annexation of Tibet by the People's Republic of China beginning in 1948, which resulted in the Fourteenth Dalai Lama being forced into exile in 1959 and the exodus of thousands of Tibetans. Important pieces that can be connected with Tibetan expatriates of this period include catalogue number 126.[29] Of the more unusual and early examples that have emerged since the 1980s, some may have once been pre-

Fig. 9. Column wrapped with armor and weapons in the gonkhang of Phyang Monastery, Ladakh, showing a wicker shield reinforced with iron struts, a spear, matchlock musket, eight-plate helmet, quiver, and parts of a horse armor (photo the author, 2003)

Fig. 10. Lamellar armor at the temple of the Nechung Oracle, near Lhasa. Photographed by Brooke Dolan, 1943. Ewell Sale Stewart Library, Academy of Natural Sciences, Philadelphia

served as votive objects in Tibetan monasteries and temples, several thousand of which were systematically stripped of their contents and destroyed or significantly damaged by Red Guard units during the Cultural Revolution in the late 1960s.[30]

The fact that such a large quantity and wide variety of armor and weapons survived into the twentieth century, though remarkable, can be explained by the circumstances found in Tibet. Many of the weapons, such as matchlock muskets, swords, spears, and archery equipment, were not outmoded in the Tibetan context and therefore remained in regular use. Although some examples are older or finer than others, objects of these types were still being made on a regular basis. In contrast to this, the lamellar armor and horse armor, some of which was still being used at the time of the Younghusband Expedition in 1903–4, was as much as four hundred years old or more. The finest examples of these may have been preserved among the heirlooms of the nobility (cat. nos. 30, 31). Through the nineteenth century, much of the more ordinary material was probably kept in armories at regional fortresses (*rdzong*) or maintained by noble families for use by militias or by local levies called up in times of need.[31] This may account for what appear to be inventory numbers on several extant lamellar armors, such as one would expect to find on objects kept in an armory or storehouse context (cat. nos. 4, 5). Of the arms and armor that were photographed in Lhasa in the context of the Great Prayer Festival, that of the *zimchongpa* may have been stored in the *zhol*, the village at the foot of the

Fig. 11. Votive armor and weapons hung on the walls of the chapel of Hayagriva in Sera Monastery, Tibet, showing a Chinese coat of plates in the center beneath a helmet, a quiver of arrows, and a domed wicker shield (photo: Grace Brady, 1997)

Fig. 12. Another view of the votive arms and armor hung on the walls of the chapel of Hayagriva in Sera Monastery, Tibet, showing several Tibetan lamellar armors, quivers of arrows, and other weapons (photo: Grace Brady, 1997)

Potala Palace in Lhasa, while the equipment of the cavalry, as mentioned earlier, was the responsibility of individual noble families.[32]

Another important way in which historical armor and weapons survives in regions where Tibetan Buddhism is practiced involves the long-standing and widespread tradition of placing votive arms in monasteries and temples. There they are kept in special chapels, known as gonkhang (*mgon khang*), which are dedicated to guardian deities (*mgon po* or *dharmapala*) (fig. 9). The importance of arms in the iconography of these gods, who are seen as the fierce defenders of Buddhism and its followers, is discussed by Amy Heller in "Armor and Weapons in the Iconography of Tibetan Buddhist Deities." The significance of the gonkhang as a place of worship and protection is discussed from a Buddhist perspective by Lozang Jamspal in "The Gonkhang, Temple of the Guardian Deities." The great Tibetologist René de Nebesky-Wojkowitz described the gonkhang as "mostly regarded as the holiest room of a temple."

> *Its entrance is often guarded by stuffed wild yak, leopards, etc. . . . who act as messengers and guards of the protective deities. The* mgon khang *is usually a dark room, lit only by a few butter-lamps burning in front of the images, which represent various chief* dharmapalas *and the particular guardian-deities of the monastery. Most of these images are scarcely visible under the numerous ceremonial scarfs which have been draped over them. On the walls hang painted-scrolls depicting the* dharmapalas *and their retinue. These* thang ka *are usually kept covered by a piece of cloth, which is only removed when a ceremony takes place in the* mgon khang. *. . . The pillars of this chapel are decorated with masks, representing the angrily contorted faces of the various* dharmapalas. *In the corners of the room lean bundles of ancient arms which were used for a long time in warfare and, having in this way acquired magic qualities, they were presented to the temple. They are supposed to be the most effective weapons of the guardian-deities.*[33]

In the narrative of his trip to Tibet in 1881–82, Sarat Chandra Das (1849–1917) mentioned armor or weapons in the gonkhang of the monasteries of Dongtse, Samding, Ramoche, and Samye.[34] Waddell also noted armor in the gonkhang he saw in Gyantse, in the Jokhang in Lhasa, and nearby at the monastery of the Nechung Oracle. In the Jokhang, the most famous temple in Lhasa, he described seeing the figure of the guardian deity Palden Lhamo "surrounded by hideous masks with great tusks and by all sorts of weapons—antediluvian battle-axes, spears, bows and arrows, chain armour, swords of every shape, and muskets, a collection of which gives her shrine the character of an armoury."[35] Some sixty years after Das, Brooke Dolan also visited Samding and noted in his diary: "On the top of fourth level of the monastery is a large room hung with armor and weapons of which much is, or may well be, 18th century Mongolian. There are many suits of link-mail and round casques, also ancient spears and great swords. Many of the weapons, however are more recent and of Tibetan origin."[36] And nearly forty years after Waddell, Dolan visited the temple of the Nechung Oracle (fig. 10) and wrote in his diary: "On the wooden pillars, which support a shallow tiled roof surrounding the courtyard, are suspended suits of mail and iron casques worn by Mongol or

Left: Fig. 13. Panoply of armor and weapons on a column in the main assembly hall, Drepung Monastery, Tibet, showing a Tibetan eight-plate helmet, lamellar armor, coat of mail, set of four mirrors, and armored belt, plus a bow, quiver, and wicker shield (photo: Michael Henss, 1982)

Right: Fig. 14. Another panoply of armor and weapons on a column in the main assembly hall, Drepung Monastery, Tibet, showing a Tibetan helmet, Chinese coat of plates, sword, wicker shield, bow, and quiver of arrows (photo: Steven Kossak, 2001)

Left: Fig. 15. A view of the column wrapped with armor and weapons in the gonkhang of Phyang Monastery, Ladakh, showing the plates of the helmet hanging to the left, a quiver, and parts of a horse armor made of textile and reinforced with iron bosses (photo: the author, 2003)

Right: Fig. 16. Votive arms draped with offering scarves on a column, Hemis Monastery, Ladakh, showing a variety of Indian and Tibetan weapons (photo: the author, 2003)

Fig. 17. Votive armor and weapons mounted on a column in Lamayuru Monastery, Ladakh, showing a Tibetan lamellar armor, several Indian swords, and other weapons (photo: the author, 2003)

Tibetan warriors one hundred or five hundred years ago. I was flabbergasted at the suppleness of the chamois-leather connecting the links."[37]

A significant array of armor and weapons of various types can be seen in the chapel of Hayagriva (*rta mgrin*) in Sera Monastery, including several lamellar armors, a coat of plates, helmets, round wicker shields, bows and bow cases, and quivers with arrows (figs. 11, 12).[38] Panoplies of arms and armor are arranged at the tops of columns in the main assembly hall of Drepung Monastery (figs. 13, 14).[39] In the first of these groupings (fig. 13), there can be seen a helmet of the eight-plate type, a lamellar armor mounted over a shirt of mail, a set of four mirrors, and an armored belt of the same types seen in the Great Prayer Festival photos (for instance, figs. 2, 6) and in this catalogue (for example, cat. nos. 5, 44, 45). On the second panoply (fig. 14) the most distinctive features are the Chinese coat of plates (inadvertently displayed inside out), like that on the walls of the Hayagriva chapel in Sera (fig. 11), and the domed wicker shield, again like those in Sera (compare cat. no. 25). In Ladakh there are also several interesting assemblages of arms and armor in the gonkhang of various Tibetan Buddhist monasteries, including Phyang (figs. 9, 15), Hemis (fig. 16), Likir, Lamayuru (fig. 17), and elsewhere.[40] While the votive arms in the gonkhang of Tibet appear to be mostly Tibetan, Mongolian, and Chinese in origin, those of Ladakh are a mix of Tibetan, Mongolian, Indian, and Middle Eastern, depending probably on the location of the monastery.

The panoplies of arms in Phyang, in particular, have several points of interest. In addition to a typical eight-plate helmet (now in pieces), a spear, a matchlock gun, bow cases, and quivers, they include flat, round wicker shields reinforced with iron struts and fragments of a horse armor made of textile reinforced with iron bosses. Two animal hides, one possibly a horsehide, are also wrapped around the columns. With the exception of a few shields now found in various collections (see cat. no. 24), this type of shield and this form of horse armor are otherwise known only through examples found in the ruins of Tsaparang, capital of the ancient kingdom of Guge in western Tibet, which was conquered decisively in the seventeenth century by the kingdom of Ladakh.[41] The gonkhang is considered the oldest temple in Phyang Monastery and is thought to have been built during the reigns of the Ladakhi kings Tsewang Namgyal (r. 1535–75) and Jamyang Namgyal (r. ca. 1580–90). The arms in the gonkhang are said to have been captured around that time from invading Hor forces, a branch of the Mongols.[42] Therefore, the Tsaparang-Phyang shields, and particularly the horse armors, constitute an important group because of their historical context and rarity of type. Moreover, they suggest what may be learned from the few groupings of votive arms that have remained intact and relatively undisturbed in gonkhang settings.[43]

The materials and techniques used to decorate arms and armor from Tibet cover a broad range, from the very simple to the extremely elaborate. Metalwork of differing types is present on the majority of examples in this catalogue, often uniting the crafts of blacksmith, goldsmith, silversmith, and sculptor, and involving the use of iron, silver, gold, and copper alloys. Leather, after iron, is the most important component and is used for several types of armor, both as the defensive plates that make up the armor and for the lacing that holds the plates together. It also appears in bow cases and quivers, equestrian tack, shields made of hide, and various other accessories. Leatherworking techniques include painted and tooled leather and appliqués, and it is seen as a foundation material or lining made from patterns of cut and sewn leather. In addition, surface decoration on leather can simulate the appearance of lacquer techniques and occurs in this form most

often on bow cases and quivers but also on some types of leather armor and other items (for example, cat. nos. 36–38, 94). Wood is used most visibly for gunstocks and less noticeably as the core material for most sword scabbards and for some types of sword grips. Textiles, including embroidered silks and brocades, also play an important part as decorative coverings and trim, particularly on saddles and tack. Stiffened panels of silk brocade are also attached to the ends of sleeves and the hems of some Tibetan lamellar armors (cat. nos. 2, 3). Bhutanese helmets, such as those worn at the Great Prayer Festival (see figs. 6, 7), were refitted in Tibet with upturned flaps of colorful fabric (see cat. no. 46). Fabric is also used on Chinese armors as part of the neck defense attached to the rim of a helmet and as the outer covering of armor of the coat-of-plates type. Ray skin, a seemingly exotic material for the Tibetan plateau, often occurs as the covering for sword grips, particularly in eastern Tibet, and has a long history of being used for this purpose in Japan and China. Tiger and leopard skin reportedly covered quivers and possibly bow cases.[44] Turquoise, coral, and lapis lazuli are treasured components of Tibetan jewelry of all kinds and are also important features in the decoration of arms and armor. Turquoise and coral are among the key decorative elements of swords. One stone is usually set in the center of a sword's pommel, while others are set singly, in pairs, or in groups of three on the scabbard mounts (for instance, cat. nos. 63, 66, 67). They are also found, although less frequently, on saddle plates (cat. no. 111) and helmets (cat. no. 14). Cane, a humble material frequently used in basketwork, is the primary component of most Tibetan shields (cat. nos. 24, 25).

The techniques most often employed to decorate objects made principally of iron include engraving, inlay, and damascening with gold and silver, pierced work, chiseling, and embossing.[45] These techniques can be used alone, but are more frequently combined. All, except inlay and damascening, are also commonly seen on silver. A detailed discussion of Tibetan ironworking traditions is found in "A History of Ironworking in Tibet" by John Clarke.

Engraving consists of incising a design into a metal surface using punches, chisels, or other specialized engraving tools. Inlay involves inserting gold or silver wires into the grooves engraved into the surface of the iron for that purpose. True inlay, however, is rarely found on Himalayan ironwork (cat. no. 41). Closely related to inlay, but far more common, is the technique called damascening (more recently also referred to by the generic term "overlay"), which is done by scoring or crosshatching an iron surface with a pattern of fine lines, usually within the borders of an engraved design. Gold and silver foil or, very often, individual wires of gold and silver are then laid over the cross-hatching and rubbed with a burnishing tool to adhere the precious metal to the iron ground. Wires laid side by side and properly burnished produce the effect of a continuous sheet of gold or silver. Damascening is the technique employed on nearly every Tibetan iron object decorated with gold and silver, and it is represented by many examples in this catalogue. It is frequently used both on the smooth and relatively flat or slightly curved surfaces offered by helmets, spearheads, or stirrups and on intricately pierced and chiseled surfaces, such as those found on sword fittings, saddles, and horse harnesses. In addition, other types of Tibetan objects that utilize the same form of decoration include pen cases, cup cases, and door fittings (cat. nos. 113, 114). The cross-hatching pattern on the iron ground is often visible to the naked eye, particularly where the gold or silver has worn away, and is always visible under magnification, making it possible to differentiate between damascening and mercury gilding. Mercury gilding, also called fire gilding, is a technique frequently used for applying a thin layer of gold to objects made of silver, bronze, or copper alloys, but it does not appear to have been used on Tibetan objects made of iron before the late nineteenth or early twentieth century (cat. no. 124). In mercury gilding, a paste (called an amalgam) is made from gold and mercury. This is applied to a ground that has been coated with a thin layer of copper or copper sulfate. The surface is then heated until the mercury evaporates, which causes the gold to adhere to the ground. In a less common variation on this technique, a layer of silver is damascened over an iron ground, and then mercury gilding is applied over the silver. This technique is found on only one helmet and a few saddles and related pieces in the catalogue, which, however, are Chinese or appear to be strongly influenced by Chinese styles (cat. nos. 19, 118–121).

Simple pierced work can be found on relatively flat sheets of iron, such as those seen on some horse armor, sword mounts, and other decorative fittings (cat. no. 30). Often, however, it is coupled with chiseling and damascening, as mentioned above. In the case of saddle plates in particular, it is skillfully employed to create an illusion of depth through intricately overlapping figures and scrollwork (for example, cat. nos. 112, 120, 134). Chiseling, often but not always used in conjunction with pierced work, is essentially carving in iron to create decorative patterns. Some of its best examples are found on the most elaborate sword hilts, saddles, and stirrups (for example, cat. nos. 56, 122, 127). Embossing refers to the technique of hammering a sheet of metal over a form, or from the back, to raise up the general shapes of a design, which are then finished from the front by chasing (engraving and chiseling). Embossed silver and copper plaques are found on sword scabbards (cat. no. 65) and gunstocks (cat. nos. 99, 100), usually in silver, and on saddles, sometimes in silver but usually in copper (cat. nos. 116, 125).

The degree of ornamentation and the range of symbols found on Tibetan arms and armor can vary considerably, but generally the same decorative motifs found on other Tibetan objects and works of art, such

as furniture, ritual implements, sculpture, and paintings, are seen on arms and armor. While these motifs can have deep symbolic or iconographic significance, on secular objects they usually serve simply as protective and auspicious symbols, and as signs of Buddhist piety.[46] Of the material in this catalogue, the greatest variety of ornament usually appears on saddle plates, probably because they offer more surface area for decoration than many other types of objects, and because elaborate saddles, when well decorated, were recognized as objects of considerable status (fig. 18). The most prevalent form of decoration on objects of all types consists of a wide variety of scrollwork (*pa tra*), which can range in appearance from leafy tendrils (*shing lo*) to stylized clouds (*sprin ris*) to flame patterns (*me ris*).[47] Scrollwork can be used as the sole design feature, but it more often serves as the background for other motifs, particularly dragons (*'brug*). Perhaps the single most frequently used motif, dragons are prominently featured on saddle plates, the fittings of sword scabbards, on helmets, in the surface decoration of leather armor, bow cases and quivers, and elsewhere. Three-dimensional dragon heads, usually chiseled in iron but also sometimes cast in iron, brass, and even silver, are also a ubiquitous feature of Tibetan, Mongolian, and Chinese stirrups (cat. nos. 127–131). Nearly as popular as the dragon is a type of monster mask known in Tibetan as *tsi pa ṭa* or by its Sanskrit name *kirttimukha*, which is sometimes found on early sword hilts (cat. nos. 55, 57) but more often occupies a central position on saddle plates (for example, cat. nos. 112, 116).[48] It is typically represented by a frontal image of a disembodied leonine mask with flaming eyes and bared fangs. A pair of hands floats beneath the mask and holds writhing snakes or tendrils. This symbol is found throughout Tibet, China, India, and Indonesia, where it is used as a sign of good fortune and to ward off evil. A closely related motif has a very similar mask, but it is joined to the body of a winged creature, which represents the *khyung*, better known by its Sanskrit name, *garuda*, a mythical bird that protects against serpents and illnesses (cat. no. 125). Other important and frequently encountered motifs come from the group known as the Eight Auspicious Symbols (*bkra shis rtags brgyad*), which consists of the endless knot (*dpal be'u*), lotus (*pad ma*), umbrella (*gdugs*), conch shell (*dung*), wheel (*'khor lo*), victory banner (*rgyal mtshan*), vase (*bum pa*), and golden fish (*gser nya*). These can appear individually or in groups, as central design features or as subtle accents on virtually any type of Tibetan object, from the most humble utilitarian item to the most elaborate ritual object or painting. Also frequently used is a motif depicting a flaming jewel or jewels (*nor bu me 'bar*), which generally takes one of three forms: three distinct orbs representing the Three Jewels (*dkon mchog gsum*); a cluster of elongated shapes representing the Precious Jewel (*nor bu rin po che*) or Wish-Fulfilling Jewel (*yid bzhin nor bu*); and a single flaming jewel or flaming pearl (*mu tig*). It is usually centrally placed on saddle plates (cat. no. 122) but also appears on helmets (cat. no. 14), on sword fittings (cat. no. 65), and even on firearms (cat. no. 100). The Three Jewels, a fundamental symbol of Buddhism, signify the Buddha, his teachings, and the community of believers. The Precious Jewel or Wish-Fulfilling Jewel, part of a group of emblems known as the Seven Jewels of Royal Power (*rgyal srid rin chen sna bdun*), symbolizes abundance and prosperity. The single flaming jewel or flaming pearl, a variation of the Wish-Fulfilling Jewel, is often seen in conjunction with dragons and can also symbolize purity. Other popular individual motifs such as the thunderbolt (*rdo rje* or *vajra*, cat. no. 44), the swastika (*g.yung drung*, cat. no. 23), and the whirling emblem (*dga' 'khyil*, cat. no. 43) can form the center of a decorative pattern or be incorporated into an overall scheme of ornament.

A less common but highly evocative type of decoration on armor and weapons is the use of lettering, which is sometimes found on helmets (cat. nos. 12, 16), shields (cat. no. 25), and, in at least one instance each, a sword (cat. no. 55) and a spearhead (cat. no. 77). This usually takes the form of Lantsa (also called Ranjana), an ornamental alphabet derived from ancient Indian scripts, which is used for sacred texts and individual symbolic letters called seed syllables (*sa bon* or *bija*). On a few examples the more conventional Tibetan script, *dbu can*, is also incorporated into the decoration or as an inscription (cat. nos. 16, 45, 80, 90), which in one rare instance includes Tibetan and Mongolian script (cat. no. 85). Less common motifs also occur, such as the dry skull (*thod skam*). A symbol associated with ritual offerings to the wrathful deities, it appears on three objects in the catalogue, a spearhead, gunstock, and gun barrel (cat. nos. 78, 103, 105).

Historical texts on the subject of Tibetan arms occupy a small niche in Tibet's vast literary tradition. They fall into the genre known as *brtag thabs* (analytical methods), which comprises texts devoted to the appraisal, examination, and appreciation of material relating to the arts, ritual objects, and secular culture.[49] Chapters on armor, helmets, swords, archery equipment, saddles, and stirrups are scattered through a handful of these texts, dating from the fifteenth century onward. What appears to be the earliest manuscript to include all of these topics dates from the sixteenth century (fig. 46) and exists in several versions, which, however, vary considerably in their states of completeness. An attempt to reconstruct something approaching a critical edition of the relevant chapters from these different versions appears in the appendix "Excerpts from *A Treatise on Worldly Traditions*."

Our understanding of the creation and development of traditional Tibetan arms is hampered by the fact that, unlike the armor and weapons from areas such as Japan, the Middle East, and Europe, Tibetan arms are not inscribed or stamped with any marks or signatures that might tell us where and when they were made or who their

Fig. 18. Dundul Namgyal (George) Tsarong (*dram 'dul rnam rgyal tsha rong*) outfitted for his role as a *ya ser*, one of the commanders of the feudal cavalry, during the Great Prayer Festival in Lhasa. Part of the elaborately pierced and chiseled pommel plate of his saddle is visible below his left arm. Photograph by Heinrich Harrer, late 1940s (photo: © The Ethnographic Museum of the University of Zürich [VMZ 400.07.23.022])

makers were. Therefore, lacking information indicative of distinct schools or centers of production, the examples in this catalogue have been grouped into broad categories according to type. Within these categories a rough chronology has been attempted based almost entirely on considerations of form and style, supported in a few instances by carbon-14 analysis. Attributions of place and date that result from such a survey can only be provisional at best. It is hoped, however, that by creating even so tentative a framework for this body of material, the variety, complexity, and merit of armor and weapons from Tibet may begin to be appreciated as yet another facet of that rich and enduring culture.

1. The context of the expedition is outlined later in this introduction. For detailed discussions, see esp. Allen 2004, French 1995, Waddell 1905, and *Younghusband* 1999.
2. Waddell 1905, pp. 168–69. Waddell states in his preface (p. vii) that nearly all of the photographs in the book were taken by him personally. Unfortunately, the present whereabouts of Waddell's original papers and photos, if they survive, are unknown.
3. For a listing of Tibetan terms, refer also to the appendix "Tibetan-English Glossary of Arms and Armor Terms."
4. Horse armor may still have been in use in the Sudan at this time. See Spring 1993, pl. 9 and pp. 33–39.
5. Quoted in Allen 2004, p. 106.
6. For the photographs by Richardson, Chapman, and others, see Harris and Shakya 2003. For detailed discussions of the ceremonies and the roles of the armored infantry and cavalry, see Richardson 1993 and Karsten 1983. See Tung 1996 regarding Dolan and Tolstoy. A synopsis of the use of historical arms and armor in the Great Prayer Festival is given in LaRocca 1999a.
7. The elaborate pennons and plumes seen on the helmets of many of the *zimchongpa* have parallels on the helmets of warriors and guardian deities depicted in Tibetan art. It should also be noted that, for whatever reason, the *zimchongpa* who are armed with muskets wear helmets that are consistently without plumes.
8. Regarding this period, see the brief outline below in this introduction, and for the dating of the arms and armor attributed to that era, see the individual catalogue entries and the appendix "Radiocarbon Dating Results."
9. On the term *zimchongpa* and their duties, see Richardson 1993, p. 39.
10. Richardson (1993, pp. 40–44) describes these events in detail and identifies them as taking place on the 24th day of the festival, known as Casting Out the Votive Offering for the Great Prayer (*smon lam gtor rgyag*), in front of the Jokhang Temple. According to Brooke Dolan, who also recorded the event in his diary, this was done three times, first by bowmen, then by those with muskets, and last by spearmen. See Tung 1996, pp. 161–62, and Dolan's unpublished journal, vol. 3, pp. 46–48, entry for February 3, 1943, Archives, Academy of Natural Sciences, Philadelphia. Richardson (1993, p. 41) described the sequence slightly differently, as the bowmen, followed by those armed with swords and shields, then the musketeers. Chapman's photos include the most complete series of the opposing lines of *zimchongpa*, with images very clearly showing the spearmen, musketeers, and swordsmen, and another in which the weapons are not clear, but which may show the archers (Archives, Pitt Rivers Museum, Oxford, 1998.131.605–.610, and in color 1998.157.83–.84).
11. Richardson described the review of troops, or Trapchi Tsisher (*gra phyi rtsis bsher*), as taking place on the 23rd day of the festival, and the target-shooting contest called the gallop behind the fort, or Dzonggyap Shambe (*rdzong rgyab zhabs 'bel*), on the 26th day. See Richardson 1993, esp. pp. 34–37, 44, 56–57; Karsten 1983, passim. In addition to Richardson's and Karsten's description of the horseback target-shooting, see also the very informative first-person account by Tsipon Shuguba (*rtsi dpon shul khud 'jam dbyangs mkhas grub*, Shuguba 1995, pp. 31–32), who was a contestant in 1923.
12. Richardson 1993, p. 34.
13. For extensive information on Tibetan history and culture, see the following sources, on which this outline is based: Beckwith 1993, Goldstein 1999b, Reynolds 1999, Shakabpa 1967, Smith 1996, Snellgrove and Richardson 1995, and Stein 1972.
14. For a detailed study of the period of the Tibetan empire, see Beckwith 1993.
15. As quoted in Stein 1972, p. 62. Examples are also given in Beckwith 1993, esp. pp. 110–11, with references. See also Demiéville 1952, esp. pp. 373–76; Laufer 1914, esp. pp. 252–57.
16. The Three Ancestral Dharma Kings (*chos rgyal mes dbon rnam gsum*) were Songtsen Gampo (*srong btsan sgam po*, r. 620–50), Trisong Detsen (*khri srong lde btsan*, r. 755–ca. 797), and Ralpachen (*ral pa can*, r. 815–38). The helmet attributed to Songtsen Gampo that was included in the exhibition catalogue *Trésors du Tibet: Région autonome du Tibet, Chine* ([Paris, 1987], cover illus. and fig. 25) is actually a Buddhist ritual crown of much later date. Excepting the fragments recovered by Aurel Stein (British Museum, MAS526, 567, 592, 610, 611, 616, 621), the only body armor apparently to have survived from this era is an extraordinary lacquered leather armor of the type used by the Yi or Lolo peoples in the southeastern corner of the Tibetan plateau (Yunnan Province in southwestern China), which has been C-14 dated to the 8th–10th centuries; it is illustrated in Anninos 2000, p. 110, figs. 12, 13.
17. For an overview of military events in Tibet from the end of the Yarlung dynasty to the beginning of Mongol rule (10th–13th centuries), see Petech 1983.
18. Illustrated in *Buddhist Art of the Tibetan Plateau* (Hong Kong, 1988), pp. 284–85; LaRocca 1999a, p. 124 and fig. 21. While the helmet may possibly date from the Yuan period, the coat of plates appears to be later. Published photographs of the coat of plates show it mistakenly displayed inside out. Another helmet and armor, also identified as "given to the leader of the Sakya sect by the Yuan emperor," are illustrated in *Clothing and Ornaments of China's Tibetan Nationality* (Beijing, 2002), p. 3. These are a lamellar armor and an eight-plate helmet of the type seen in the present catalogue, e.g., cat. no. 4.
19. For the high point of Ming interaction with Tibet, during the reign of the emperor Yongle (r. 1403–24), see Watt and Leidy 2005.
20. Regarding the Younghusband Expedition, see esp. Allen 2004, French 1995, and *Younghusband* 1999.
21. The majority of the troops were from the Gorkha, Pathan, and Sikh units of the British Army in India. For a breakdown of the personnel involved in the expedition, see Gulati 2003, esp. p. 242. His overall discussion (pp. 224–302) is revealing in that it is given from the perspective of an Indian military officer.
22. For the Buddha given to Younghusband, see French 1995, pp. 400–401, and for both, see Allen 2004, p. 294. Macdonald's Buddha was bequeathed to the Marischal Museum, University of Aberdeen, in 1931, along with other objects obtained during his military service in Tibet and Africa. I am very grateful to Neil Curtis of the Marischal Museum for making available for study lists of the material and the Tibetan pieces in the collection.
23. I am very grateful to Simon Metcalf for researching this gift and for providing a copy of the original list, entitled "List of Presents to T. M. The King and Queen, from The Dalai Lama, 28 June, 1913." Among the twenty total lots, the descriptions of the arms and armor, quoted here in full, are as follows: "8. A Tibetan Sword, as still used by the Khambas, who are the most warlike of the Tibetans and live in S.E. Tibet. Was probably made in Derge. . . . 16. A Tibetan saddle with trappings, called the saddle of "Rimpung gyalpo" the saddle of the King of Rimpung. This King ruled at Rimpung, (about three days march, N.E. of Gyantse) some five hundred years ago before the era of the [current] Dalai Lama. On this saddle the first Dalai Lama is said to have ridden into Lhasa. His immediate successors did so also, and for the last two hundred years the saddle has been kept in the Potala at Lhasa as a national relic. (This is the most important of the gifts from the Dalai Lama.) . . . 17. A Coat of Tibetan Armour with steel helmet. This kind of armour is no longer made, but it occasionally worn at national festivals. . . . 18. Two old Tibetan leather shields with silver bosses." Lots 8, 16, and 17 were recorded as lent to the British Museum. Unfortunately, at the time of this writing, their whereabouts were unknown. According to Berthold Laufer (1914, p. 290,

n. 3), the Tibetan armor given by the Dalai Lama to the king was the one illustrated as plate 3 of the British Museum's *Handbook to the Ethnographical Collections* (London, 1910). However, since the publication of this booklet preceded the date of the gift by three years, the Tibetan armor illustrated there cannot be from the gift group listed above.

24. See Rockhill 1891 and Rockhill 1895 for examples acquired during his travels, most of which are now in the collections of the National Museum of Natural History, Smithsonian Institution, Washington. I am very grateful to Felicia Pickering of the NMNH for facilitating my study of these objects. Rockhill's published comments about the provenance and the use of this material remain extremely valuable. For the details of Rockhill's career and his travels, see Wimmel 2003.
25. See Laufer 1914. I am very grateful to Julian Freeman for sharing with me his notes and photographs of the Tibetan edged weapons in the Field Museum.
26. For the Newark Museum's Tibetan collection, see Olson 1950–71 and Reynolds 1999. Regarding Shelton's career, see Wissing 2004. I am greatly indebted to Valrae Reynolds for making the Newark collection available for study, and for help with many questions relating to Tibet.
27. Random examples of Tibetan arms have entered many U.S. museum collections this way, including the University of Pennsylvania Museum of Archaeology and Anthropology, the Peabody Essex Museum in Salem, the Peabody Museum of Harvard University, the University of Nebraska State Museum, and others.
28. Several Tibetan pieces from Stone's collection are included in Stone 1934. For a brief biography of him, see LaRocca 1999b.
29. A prime example is the Tibetan collection, including arms and armor, in the National Museum of Denmark, Copenhagen, formed by Prince Peter of Denmark during his fieldwork with the Tibetan expatriate community in Kalimpong, India, in the late 1940s and early 1950s. See Jones 1996.
30. On the effects of the Cultural Revolution in Tibet, see Shakya 1999, esp. p. 420; Smith 1996, pp. 541–62.
31. For his personal observations on the regional militias in Tibet in the late 19th century, see Das 1902a, pp. 88–89, 91, 95–96.
32. I am grateful to Hugh Richardson (personal communication, June 27, 1997) for these suggestions and other helpful information.
33. Nebesky-Wojkowitz 1975, pp. 401–2.
34. Das 1902a, pp. 87, 149, 170, 245. In the text, however, Das repeatedly misinterpreted *ngon khang* as *gong khang*, meaning "upper room." Phonetically the two terms are almost identical.
35. Waddell 1905, pp. 229, 370 (quoted passage), 382.
36. Entry for December 8, 1942, published in "Across Tibet: Excerpts from the Journals of Capt. Brooke Dolan, 1942–43," *Frontiers* (Academy of Natural Sciences, Philadelphia), 2 (1980), p. 6.
37. Dolan diary, vol. 2, p. 147v, entry for January 12, 1943, Archives, Academy of Natural Sciences, Philadelphia.
38. I am very grateful to Robert Hales, Grace Brady, and José Cabezón for providing me with images of this material. The coat of plates in figure 11 is similar to that in Sakya Monastery (mentioned in note 18) and is probably Chinese, 17th–18th century.
39. Images of these were kindly provided by Michael Henss, Grace Brady, and Steven Kossak.
40. For invaluable assistance in the study of this material during a visit to Ladakh in the summer of 2003, I am greatly indebted to Lozang Jamspal, Tsering Yanskit, Getsul Lobzang Yignyen, Tsering Angmo, Phuntshog Angmo, Tinley Angmo, and David Kittay.
41. For the horse armor and shields, see Gage 1991, vol. 1, pp. 212–26; vol. 2, color pls. XC, XCI, and black-and-white pls. CXXVIII–CXXXI, CLIX. The horse armor and one of the shields of the same type from Tsaparang appear in *Xizang wen wu jing cui—A Well-Selected Collection of Tibetan Cultural Relics* (Beijing, 1992), nos. 15, 16, where they are dated as 11th–16th century. They were also included in the exhibition catalogue *Tesori del Tibet* (Milan, 1994), nos. 19, 21 (illus. in color). The same shield, or a very similar one from the same group, is included in *Xizang bo wu guan—The Tibet Museum* (Beijing, 2001), p. 48, where it is dated 10th–11th century.
42. *The Guide to the Monastery at Phyang* (n.p., n.d.), p. 22. Francke (1999, e.g., pp. 81, 108) also mentioned several instances of the Ladakhi kings capturing, or being given as tribute, armor and weapons, both from the Mongols and from the kingdom of Guge.
43. It is uncertain how many gonkhang in Tibet survived the Cultural Revolution intact, but it was probably a small minority. A recent photo of the gonkhang in Deyang Monastic College, Drepung Monastery, for instance, clearly shows that both the arrangement of arms and most of the arms in it are relatively new (*Zhaibung Monastery* [Beijing, 1999], n.p.). Even in areas unaffected by the Cultural Revolution, recent changes have sometimes been made. For instance, the weapons lining the wall of the gonkhang of Matho Monastery in Ladakh are all relatively modern Indian reproductions.
44. See the appendix "Tibetan-English Glossary of Arms and Armor Terms: III. Archery Equipment and Projectile Weapons, Other than Firearms," under *stag dong*.
45. On these techniques, see 'od zer 1989 and Dagyab 1977. Decoration on iron is traditionally divided into three basic categories: engraving on a flat or smooth surface (*'jam tshags*), raised engraving (*'bur tshags*), and pierced engraving (*dkrol tshags*). On these, see 'od zer 1989, pp. 44–47; Dagyab 1977, vol. 1, p. 48. The techniques are also discussed in Rauber-Schweizer 1976, esp. pp. 138–39. The spelling *tshags*, rather than *tshag*, follows 'od zer 1989; Tashi Namgyal; and *dung dkar* 2002, p. 1691.
46. For further information on the symbols mentioned here, see Dagyab 1995 and Beer 1999.
47. Another Tibetan name for the scroll motif appears to be *shing lo sprin ris* (literally, tree leave cloud design); 'od zer 1989, p. 61.
48. There are many spelling variations of the Tibetan name for this term, most of them apparently based on phonetic equivalents. It appears in 'od zer (1989, p. 46) as *dziH pa tra*; in *Zhaibung Monastery* ([Beijing, 1999], n.p.) as *rdzi par*; and as *zipak* by Tony Anninos (in Kamansky 2004, p. 102; also with several other variations listed in the glossary, p. 338). The spelling *tri pa ta* has been adopted here since it is confirmed in reliable Tibetan dictionaries, such as *bod rgya* (p. 2186) and Goldstein 2001 (p. 846).
49. Martin 1997, p. 233.

A HISTORY OF IRONWORKING IN TIBET: CENTERS OF PRODUCTION, STYLES, AND TECHNIQUES

JOHN CLARKE

The Early Period, 7th–12th Centuries

Both Arab and Chinese sources attest to the brilliance and precociousness of Tibetan metallurgy during the first two and a half centuries of the Tibetan empire (7th–mid-9th centuries). The same mastery Tibetans displayed in their gold work was also evident in their manufacture of armor and shields and construction of iron suspension bridges. The Tang Annals from the start of the ninth century tell us that in battle both noblemen and their horses wore strong and fine mail armor that completely covered them, leaving only eye holes.[1] This was evidently a well-established technology even by the early seventh century, as is revealed by a Tibetan gift to the Tang court in 638 of a suit of mail made in gold links.[2] Knowledge of mail was probably borrowed by Tibetans from the Sasanians, and this type of armor is shown clothing the first Sasanian king, Ardashir (r. 226–40), and his son Shapur (r. 241–72) on stone reliefs of the period.[3] Though there is evidence that the Tibetans imported arms in this period from Central Asia and Sogdia, it is clear that their own industry was sophisticated and was producing arms in its own right. This evidence comes in the form of a seventh-century Arab reference to a gift of one hundred mail coats and a tenth-century reference to a type of shield that was well known as a Tibetan product.[4] Between the seventh and ninth centuries the expansionist Tibetan empire was engaged in almost continuous warfare on its Chinese and Central Asian frontiers. This must have necessitated a huge arms production, of which we get only tiny glimpses. When a joint Tibetan-Arab army was defeated in 801 by the Chinese forces, twenty thousand suits of armor were taken, and even allowing for a percentage of these being Arab, one begins to understand the numbers involved.[5] We also know that the Tibetan emperor (*gtsan po*) traveled with an entourage that included armorers.[6] Additionally the Tang Annals tell us that even in peacetime, as in eastern Tibet until the 1950s, all men carried swords. During these centuries Tibet was also able to span some of its most fearsome river gorges with chain suspension bridges a thousand years in advance of that technology's introduction in the West. Chinese pilgrims en route to India found such bridges in use in the early sixth century in the Himalayan regions from Gilgit (Pakistan) to Uddyana (modern Swat in Pakistan), and there is another reference to one on the Upper Indus River in 646.[7] It is still uncertain whether the technological innovation came from China, as some scholars suppose, or from Tibet whose terrain certainly gave the most need for its use.[8] We do know that by the eighth century iron suspension bridges had been constructed by the Tibetans across two tributaries of the Mekong River on the southwest Chinese border and on the Upper Yangtze River.[9]

But when might Tibet's iron technology have been imported and from where? China is recognized as having developed a wrought iron technology as early as the sixth century B.C.[10] Records of the Han dynasty talk of iron mines, foundries, and workshops producing iron goods for export as lying east of the Tian Shan mountains in Central Asia, an area from which in the ninth–twelfth centuries we know iron weapons were exported to Tibet.[11] In fact in this area of modern Xinjiang two iron-mining and smelting sites of the Han period have been excavated in Lop County, and others in Kuqa County and Minfeng County, respectively.[12] And a fourth-century Buddhist traveler recorded the use of coal to smelt iron in Xinjiang.[13] But though Chinese technology was evidently advanced at an early period, there is no direct evidence that this was the source of Tibet's knowledge.

Tibetan conquests from the seventh century in Central Asia and Transoxiana or Sogdia, the area between the Oxus and Jaxartes rivers, brought them into contact not only with Chinese but with Sogdians

Fig. 19. Top view of cat. no. 113, cup case, eastern Tibetan, 15th century. Wrought iron and gold, H. 2 in. (5 cm), Diam. 6⅛ in. (15.6 cm). Victoria and Albert Museum, London (IM.162-1913)

century, accounts that a number of Mongol peoples, notably the Kalmuks and the Buriats, were skilled in the damascened decoration of ironwork.[34] It is therefore possible, though unproven at present, that the fine metalworking tradition of eastern Tibet was established as the result of contact with Mongolia and/or Turkic Central Asia.

There are very few surviving pieces of pre-fifteenth-century iron inlaid with gold or silver. A probable thirteenth-century iron helmet or drum inlaid with silver decoration from northeastern Iran in the Khalili Collection, London, underlines the importance of Iran as one of the most likely locations for the development of such skills.[35] Inlay in silver and copper on brass or bronze had, in the mid-twelfth century, first become a major feature of eastern Iranian metalwork, where it represented a cheaper substitute for scarce silver.[36] Such inlaying skills could have been spread, or further developed, during the early Mongol Empire through the forced transference of captured craftsmen during the reigns of Ögödei (1229–41) and Möngke (1251–59). During this period artisans, including Iranians and Chinese, were redistributed to established craft-working centers such as Yanjing (today's Beijing), Besh Baliq (capital of the Uighur kingdom), and others including one in the northern foothills of the Tian Shan mountains and another in Transoxiana.[37] The ethnic mix of craftsmen from all over the empire, which included armorers and gold- and silversmiths, resulted in a period of artistic and technical innovation. This would have provided a fertile period for the further development of a technique such as overlay, or damascening, combining as it does the skills of the blacksmith and the goldsmith. The possible adoption or development of these skills during the late thirteenth century in Beijing, under the tutelage of the Nepalese craftsman Anige, is discussed below.

The Organization of Ironworkers, 13th–19th Centuries

By the thirteenth century monastic institutions in Tibet had started to become wealthy and would already have been the major patrons of craftsmen that we know them as in the twentieth century. The consistent early twentieth-century pattern of metalworkers being settled in groups near monasteries, and sometimes paid a retaining fee by the monastic authorities, offers a strong clue to patronage systems in those earlier centuries. This is certainly the type of organization seen in the nineteenth century at Tashilhunpo (*bkra shis lhun po*) Monastery in southern Tibet, which was then served by a craft-working village of Tashikitsel (*bkra shis skyid tshal*), one mile south of it. In 1882 Sarat Chandra Das noted that the village contained clerks, painters, and other artisans who received an allowance from the monastery.[38] Up until the mid-seventeenth century, when Tibet was politically unified under the Fifth Dalai Lama, power lay not only with the monasteries but also with regional secular authorities who would have similarly required craftsmen to provide tools, vessels, and weapons. In Bhutan until the 1950s this same system operated, each district governor or *dzongpon* (*rdzong dpon*) keeping his own group of metalworkers and paying them a small retaining fee. Hence economics dictated that craftsmen gathered near monasteries or local rulers. Metalwork made in Tibet was also exported to China. The Chinese Ming Annals of 1587 say that helmets, armor, knives, and swords as well as bronze Buddhas and "pagodas" were made in Tibet by its various rulers. These are described as tribute, a euphemism for trade items in this context.[39]

But during the building of the Potala between 1642 and 1694, thousands of craftsmen of all kinds were required and were organized in a guild system, each set of workers forming a *zokhang* (*bzo khang*, literally, house of craftsmen). A permanent building called the Dodzhol Palkyil (*'dod zhol dpal 'khyil*) at the foot of the Potala itself was built to house the guilds of the metalworkers, wood-carvers, and clay statue makers.[40] The aim of the organization was to make the best craftsmen available for government work for a specified period each year; by the twentieth century this was typically two to three months. During the twentieth century each group of metalworkers had its own *zokhang*, and among these was that of the ironworkers who numbered about fifteen in the 1940s and who made door clasps, locks, keys, and the corners of boxes. Over the last three centuries such craftsmen will have made much of the ornamental ironwork that the visitor sees today on the great monasteries and palaces of Lhasa such as the Potala and Norbuligka palaces dating from the seventeenth to the twentieth century. No arms had been made there in living memory, though they might well have been produced in the workshop before the establishment during the late nineteenth century of the arsenal just west of Lhasa. Officers on the British military expedition of 1904 noted that by then there were two Muslim artisans at the arsenal. For the previous ten years these men had been copying Martini-Henry rifles and making trips to Calcutta to take back raw materials required.[41]

The Iron Bridge Builder, Tangtong Gyalpo

One exception to our general lack of knowledge of the history of ironworking in Tibet is the life of the enigmatic fifteenth-century engineer saint Tangtong Gyalpo (*thang stong rgyal po*), also known as Chakzampa (*lcags zam pa*), "Iron Bridge Builder," who lived between 1385 and 1464.[42] Inspired, according to one source, by being refused a ferry passage due to his eccentric appearance, he began a career as a builder of iron suspension bridges, carrying forward what we have already seen was an ancient Tibetan technology. He is credited with the creation of fifty-eight iron

Fig. 20. Iron chain suspension bridge at Duksum, Tashigang (*bkra shis gang*), eastern Bhutan, built by Tangtong Gyalpo, early 15th century. The walkway was probably formed from wooden slats, which no longer exist. Lines of multiple chains forming the sides and path supports are secured within the massive stone gatehouses at either end (photo: the author, 1998)

chain bridges, of which about eight were in Bhutan, over a hundred boat ferries, and a number of temples, stupas, and monasteries throughout the region. All of these can be seen in the Buddhist context as pious works done to benefit others, and his biographies show him very much as a Tantric yogi or Mahasiddha, a being possessing supernatural powers or *siddhi*.[43] Several of the saint's bridges survive even today in Tibet and include Chakzam (*lchag zam*) and Chungriboche (*chung ri bo che*) on the Tsangpo (*gtsang po*) River and Lundrubshang (*lhun grub shangs*) near Reting (*rva sgreng*) Monastery.[44] The saint's one remaining intact bridge in Bhutan spanning a small river at Duksum in eastern Bhutan (fig. 20) shows how the construction utilizes a number of parallel chain links secured in massive stone gatehouses at each end. At Nyangodruk (*snyan go drug ka*), once a main link between Lhasa and the Yarlung Valley, a now-destroyed bridge had a span of between 150 and 250 meters using five major stone supports of up to 15 meters in diameter.[45] We know that the saint used local blacksmiths to assist him in forging the chains required, as he did at Chusul (*chu shul*) ferry, his first bridge, in 1430.[46]

To gather the iron for one of his most famous bridges over the Tsangpo at Chuwori (*chu bo ri*), also the site of his main monastery in central Tibet, Tangtong Gyalpo traveled to western Bhutan in 1433–44. The iron he collected was forged into seven thousand links by a team of eighteen blacksmiths from five villages near Paro (*spa gro*), one of which, Woochu or Woo (*bye 'u chu* or *bye 'u*), is still the home of blacksmiths, including a sword smith.[47] These links, together with other gifts, were taken in fourteen hundred loads by the people of Paro across the Tibetan border to Phari (*phag ri*).[48] A nearly contemporary figure, the Seventh Karmapa Chödrak Gyatso (*chos grags rgya mtsho*, 1454–1506), perhaps inspired by Tangtong Gyatso himself, carried out his own program of iron bridge building in Tibet, and it is probable that the technology continued to be used sporadically until fairly recent times.[49]

Derge and Yongle Ironwork of the Early 15th Century

The ironworking skills centered in eastern Tibet, especially at Derge, are strikingly reflected in a group of iron ritual objects dating from the late fourteenth to the early fifteenth century and exquisitely damascened with gold and silver in a style that blends Chinese and Tibetan idioms. The earliest dated pieces are a ritual hammer and an ax, the latter in the Museum of Fine Arts, Boston (fig. 21, right). The ax is inscribed with the reign mark of the emperor Hongwu (r. 1368–98), while other related pieces may also be assigned a late fourteenth-century date (fig. 22).[50] A few pieces show much later, possibly sixteenth-century, features.[51] However, it is objects bearing the reign marks of the emperor Yongle (r. 1403–24), or those stylistically associated, that make up the majority of the dated group. These include a ritual fire spoon at the Museo di Arte Estremo Orientale in Milan (fig. 23);[52] a set of mace, ax, and chopper with an associated incense burner at the Cleveland Museum of Art;[53] and a mask, two ritual fire spoons, and a *khatvanga* (ritual staff, fig. 24) at the Metropolitan Museum.[54] The signature features of the style include sinicized versions of the lotus or peony seen in profile, geometric wire damascening of interlocking fret patterns, bands of *ruyi* heads,[55] and floating clouds. Both the style of motifs and the workmanship, with its fine and minute detailing, point to Chinese craft production. The fluidity of the cloud designs on the edge of the fire spoon in figure 23, for example, speaks of true Chinese draftsmanship. A defining stylistic feature common to the whole group is the precisely damascened design of extended wire spiral (figs. 23, 24). This Chinese motif was developed from the running-scroll form seen abundantly on Yuan dynasty porcelain.[56] Other elements, sometimes found in combination, are more characteristically eastern Tibetan, most notably the dense overlapping pierced scrollwork, as seen on the Metropolitan's two fifteenth-century saddles (cat. nos. 111, 112), combined with sinuous dragons with long bodies. Still others, such as the interlocking fret, are more widely found on other Tibetan metalwork and furniture.[57] We must further note that the wire spiral design is found both on sinicized iron objects and on ones that have no definite Chinese stylistic elements. Where then is the most likely place of manufacture for a stylistic blend featuring such high-quality objects?

Recent research has made it clear that during the fifteenth century there was a very large output of Sino-Tibetan ritual art in several

Fig. 21. *Left*: Ritual chopper (*kartrika*), late 14th century. Iron damascened with gold and silver, 9⅛ in. (23.2 cm). Museum of Fine Arts, Boston, Charles Bain Hoyt Fund (1987.256). *Right*: Ritual ax (*paraśu*), reign mark of the emperor Hongwu (1368–98). Iron damascened with gold and silver, 16⅞ in. (43 cm). Museum of Fine Arts, Boston, Charles Bain Hoyt Fund and Anonymous gift (1987.93) (photo: © 2006 Museum of Fine Arts, Boston)

Fig. 22. *Vajra* "water" knife, late 14th or early 15th century. Iron damascened with gold and silver, L. 9½ in. (24 cm). Private collection. The name derives from the wavy line of its blade along the top edge of which are depicted stylized waves. Flames shoot from the jaws of the makara, a mythological water monster

media. The ironwork being discussed shares many of the same stylistic features as woven and embroidered religious textiles and bronze images of the Yongle and Xuande (r. 1426–35) reigns and with Sino-Tibetan style *tangka* (scroll paintings) of the later fifteenth and early sixteenth century.[58] These features point to China and probably Beijing as the most likely place of manufacture. There is every likelihood that this varied production, including the iron ritual objects, was made to act as diplomatic gifts from the Chinese emperor to high-ranking Tibetan spiritual leaders or to mark visits by them to the court. The style both of the paintings and of the related bronzes is a skillful blend of Tibetan and Chinese features that is evidently the result of a long-established tradition, apparently begun in the later thirteenth century by the Nepalese master painter and sculptor Anige (1244–1306).[59] The Sino-Tibetan style established by Anige and his successors, which included his two sons, evidently survived in use into the early sixteenth century, though Chinese elements gradually came to predominate in both sculpture and painting.[60] There is in fact a direct link between the bronzes and the ritual ironwork in the form of the squared puffy Chinese faces that are found both on the Yongle images and on the *khatvangas*.

Could Chinese craftsmen also have produced the ritual iron objects with reign marks guided by Tiberan lamas resident in Beijing? Given a continuity of worship at Buddhist centers in China, such influence could have continued throughout the Ming. One well-known center of Tibetan Buddhist teaching in Beijing was the Temple of Great and Mighty Benevolence which Protects the Dynasty in the northwest corner of the old city. This temple, which housed a number of important Tibetan monks and is associated with the series of late fifteenth- and early sixteenth-century "Tibetan" paintings already mentioned, was under imperial patronage and remained a center of Tibetan Buddhist practice and teaching throughout the Ming dynasty (1368–1644).[61] Like the textiles, paintings, and bronzes, the iron pieces also speak of a well-established and mature craft tradition. Is it not possible that a production of iron objects, including weapons, was also begun in China under Anige in the late thirteenth century? We know that when he was made Head of the Imperial Manufactories in 1278, among the groups of ancillary workers he controlled were blacksmiths. It is quite possible and even likely that a production of ritual objects, including iron pieces, might have been begun at this time. That inlay on iron was produced in the late thirteenth century in China is shown by the existence of a Yuan dynasty iron passport (*paiza*) bearing an inscription in the script developed by Phagpa ('*phags pa*), hierarch of the Sakya (*sa skya*) order, who ruled Tibet for the Mongols as ally and vassal.[62] It is also possible that the shoulder or knee defense decorated with a gold and silver *qilin* (cat. no. 47) belongs to this century.[63] The late fourteenth-

and Turkic peoples who had their own sophisticated metallurgical industries.[14] The sphere of Tibetan control during some periods coincided with a wide arc of western and Central Asia known for its iron and steel production while even during times when this was not the case they received trade goods from the same places. The area just referred to encompassed much of present-day Iran, parts of Afghanistan, and the area between the Amu Dar'ya (Oxus) and the Syr Dar'ya (Jaxartes), also known as Transoxiana (the former Sogdia). Here, in present-day Uzbekistan, whole urban districts were occupied by armorers and jewelers in the tenth–twelfth centuries,[15] while Ustrūshana, a Sogdian state east of Samarqand, and the Fergana basin were both important ironwork production centers.[16] The Sogdian cities of Samarqand and Bukhara probably also manufactured iron and steel weapons that were exported to Tibet.[17] We know that by the early eighth century, the Sogdians, having probably borrowed the technology from the Sasanians, were manufacturing mail armor and offered suits of the material as gifts to the Tang court in 718.[18] These may also have formed part of the export arms production going from Sogdia to Tibet. The Sasanians may themselves have developed knowledge of steelmaking from contacts with northern India.[19] As no early Tibetan weapons survive that could be metallurgically tested, it is impossible to know whether Tibetans had the use of steel during their early centuries of greatness. But as steel swords were certainly available through trade with Sogdia and Fergana they almost certainly used them, and many steel blades are known from Central Asia from the late first millennium until the arrival of Genghis Khan in the early thirteenth century.[20]

After the sixth century the Sogdians and Sasanians became traders along the overland routes to China and would have encountered Tibetans who for long periods controlled both routes.[21] But there is an even more direct way in which the iron and steel weapon technologies of Sasania and Sogdia might have reached Tibet and enabled it to develop its own arms industry at an early date. The collapse of the Sasanian empire in the mid-seventh century and the more strictly Islamizing 'Abbasid takeover of Sogdia in the mid-eighth, together with Tang China's loss of Central Asia to the Tibetans, also in the mid-eighth century, are likely to have led to many skilled craftsmen seeking new patrons. The newly emergent Tibetan empire would have offered many opportunities and in the towns of Central Asia and of Tibet itself there may have been a multicultural mix of skilled Sasanian, Sogdian, Chinese, and Turkic iron and silversmiths who brought and established new technologies.[22]

The other peoples who were heavily involved with arms production and trade with the Tibetans were the Turkic peoples and especially the Karluks, allies of the Tibetans during the eighth and early ninth centuries, whose zone of settlement and control coincided to some extent with the area of Central Asian metalworking referred to above.[23] The Karluks (Tibetan *gar log*), originally a federation of three tribes, were noted by Islamic geographers as producers and exporters of iron artifacts and weapons to Tibet and China.[24] By the ninth century they were based in Central Asia to the north and east of the Tian Shan mountains though other groups had pushed farther west and established themselves in Fergana and Tukharistan in the Upper Oxus basin. And it was from centers of iron production nearest the northern edge of Tibet, across the Tarim basin on the northern Silk Route between Kuqa and Aksu, that weapons were exported to China and Tibet.[25] The centers, described in Arab geographies of the tenth and twelfth centuries, were Barman or Bakhwan, a town near Aksu, where excellent iron goods were made, and Farman, which had markets for arms traders.[26] There is evidence that iron was supplied to the Karluks by the Kirghiz, who were involved in iron mining in the Tian Shan mountains.[27] The arms traded here probably included the long thin swords similar to the Carolingian or Frankish swords in Europe.[28]

The routes by which arms entered Tibet during the eighth–ninth-century period may have been the traditional one along the Tarim River from Kuqa to Lop Nur then down to the Tibetan military base at Miran and skirting the Tsaidam basin over the Changthang (*byang thang*), or the northern plains of the Tibetan plateau, to Lhasa. It would also have been possible for the Tibetans, by following the Tarim River westward from Lop Nur, to have communicated directly with their Turkic allies even while the Chinese were occupying the four garrison cities of Central Asia from 692 to 792.[29]

There is almost no definite evidence of the possible origins of the fine ironworking techniques used in Tibet. It may, however, be worth considering the close association of the village of Horpo (*hor po*) in Derge (*sde dge*) with skills such as damascening and pierce-work. The name of the village itself may offer clues to the origins of such techniques in eastern Tibet or even in Tibet as a whole. Immediately to the northeast of Derge Horpo also lay the area of the five Hor tribes (*hor ser khag lnga*) in the area of Nyarong (*nyag rong*).[30] From as early as the seventh century, the word *hor* in Tibet has been used to describe Mongolia and its peoples, usually referring to the Uighur or occasionally the Oghuz, a Turkic people living on the Syr Dar'ya.[31] There were Uighurs in Gansu, an area adjacent to northeast Tibet,[32] and when the Uighur kingdom of Kocho finally collapsed in 1284, its king fled to Yongchang in neighboring Gansu.[33] One wonders if these facts could be related to a legend of Horpo that the village was founded in the thirteenth century by survivors of a defeat in battle. The link with Horpo might also have been through the Oghuz, who in the tenth–twelfth-century period controlled the area around Kuqa from which iron weapons were exported to Tibet. We also know from later, early eighteenth-

Tibet at least six times between 1408 and 1419.[68] We also know that in 1424 before his death Yongle sent a eunuch envoy to what could be seen as his tributaries in Nepal and Tibet carrying images of the Buddha, robes for monks, and ritual objects and utensils.[69] In the opposite direction, large numbers of Tibetan diplomatic missions were also visiting the Chinese capital during the 1430s; in 1430 itself there were two groups of 580 and 542 Tibetans, and in 1436, 691 Tibetan men were recorded as visitors.[70]

There are reasons, however, for singling out the Fifth Karmapa Deshin Shekpa as of particular significance in relation to the iron ritual objects. It is likely that in 1409 he returned from a visit to the Chinese court, made in 1407 to perform memorial services for the emperor's parents, bearing gifts from the emperor that may have included such ritual objects.[71] The present head of the Karmapa order confirms that by tradition the emperor Yongle gifted six *khatvangas* to Deshin Shekpa at the time of his visit.[72] The Karmapa believes that the *khatvanga* currently in the British Museum (1981.0207.1) is one of this group, while a number of other examples have passed through sale rooms.[73] For gifts to important Tibetan leaders such as the Karmapas and to mark such politically significant occasions, Yongle is known to have commissioned specifically appropriate ceramics, such as Monks Cap ewers and stem bowls, and probably also these wonderfully worked iron ritual objects.[74] The style of the Yongle reign mark on a hammer sold in 1997 is so close to that of one of the impressed marks on a porcelain piece made in the same reign that it may have been directly copied and certainly implies familiarity with the atelier producing the ceramics.[75]

There are, however, a number of objects, including the Metropolitan Museum's fifteenth-century saddle plates (cat. no. 111), that show fewer elements of Chinese style, and it may prove to be the case that this Sino-Tibetan material comprises both objects made in China and a separate group made in Tibet, which share some common stylistic features. In most cases the extended wire spiral scroll is a key linking feature, found on both potentially "Chinese" and "Tibetan" pieces. In the case of the saddle, the abundant use of inset stones also suggests a possible Tibetan production point. It may prove to be the case that such "Tibetan" pieces were made in eastern Tibet for monastery authorities or local rulers such as the king of Derge. Present-day informants from Derge Horpo maintained that former generations were required to fulfill part of their tax obligation to the Derge king by going to the capital, Derge Gonchen (*sde dge dgon chen*) and making metal objects there for his government.[76]

It is possible that just as the painting style developed by Anige was reexported to Tibet via craftsmen trained in the imperial atelier, as seen in the early fourteenth-century murals at Shalu (*zhva lu*) Monastery, a sinicized style of ironworking created in China could have influenced eastern Tibetan craftsmen and resulted in a new production there that mixed Chinese and Tibetan features.[77] Such a situation could have occurred through Derge craftsmen returning from a period working in the imperial atelier or through the copying of Chinese imperial pieces in Tibet at the behest of a figure such as the Karmapa hierarch, as that order retained monastic centers in Kham (*khams*), or even more likely through the Sakya abbot Kunga Tashi Gyaltsen, the recipient of gifts from Yongle. The closeness of links between the Derge court and the Sakya order would have made the commissioning of ritual objects from local Derge ironsmiths an easy matter. This type of scenario is suggested by the existence of an evidently misunderstood imperial inscription of the ritual ax held by the Cleveland Museum.[78]

Style in Ironwork, 13th–19th Centuries

The dating of fine-quality ironwork from Tibet is tentative at present. Among the factors that may be used for dating are comparisons of the evolution of key motifs, such as the dragon and lotus, in Chinese art and their allied reflections in the Tibetan arts. Substantial amounts of Chinese textiles in the form of out-of-fashion dragon robes, uncut woven-to-shape garments, and bolts of silk and silk brocade had reached Tibet since the eighth century both as diplomatic gifts to important religious and secular leaders and through trade.[79] The combinations of clouds, dragons, and scrolling foliage that become so popular in Tibet from the fifteenth century onward are in fact found together on the dragon robe cloth that was used in Tibet to make dance costumes, religious hangings, *tangka* mounts, and the clothes of noblemen. Types of metalwork, such as saddles, are also not infrequently decorated with the combination of stylized rocks and standing waves (*li shi*) design at the bottom edge of dragon robes. Dragons with long sinuous bodies and four claws, one of which is opposed to the others, are characteristic of the early fifteenth century and feature on door fittings from monasteries such as Sera (*se ra*) (fig. 25) and Drepung (*'bras spungs*), where they are combined with the delicate overlapping scrollwork of the period. Such dragons closely mirror in form those on contemporary Chinese textiles.[80] The same style of dragons and scrolling foliage is beautifully demonstrated by the teacup case (fig. 19 and cat. no. 113) and by two saddles (cat. nos. 111, 112) in this catalogue and exhibition. Pierced scrollwork entwined with lotuses and writhing dragons continued to be an immensely popular decoration down to the twentieth century and is found on saddle plates, pen cases, teacup cases, and door clasps. By the later sixteenth and early seventeenth century, dragons on Tibetan

Fig. 25. Gold-damascened iron doorplate at Sera Monastery, ca. 1419. Both the dragons and the scrollwork link stylistically with those on saddles at the Metropolitan Museum (cat. nos. 111, 112) and the teacup case at the Victoria and Albert Museum (fig. 19 and cat. no. 113) (photo: the author, 1993)

Fig. 26. Gold-damascened iron doorplate on the main assembly hall at Nechung Monastery near Lhasa, ca. mid- to late 17th century. Nechung was built by the Fifth Dalai Lama (1617–1682). The five clawed dragons and swirling clouds reflect Chinese brocades of the late 16th and early 17th centuries (photo: the author, 1993)

Fig. 27. Pierced iron grill damascened with gold, part of the door of the funerary chapel of the Eighth Dalai Lama (1758–1804), Potala Palace, Lhasa. Probably made by blacksmiths from the Dodzhol Palkyil, or government workshop, in Lhasa, ca. first decade of 19th century (photo: the author, 1993)

Fig. 28. Pierced and damascened iron doorplate on the main assembly hall of Mindroling Monastery. This door fitting dates either from the founding of the monastery in 1677 or from its rebuilding in 1736. It displays the rather stiff, symmetrical scrollwork found on ironwork from the 18th century onward (photo: the author, 1993)

metalwork appear to closely follow new Chinese models, probably inspired by newly imported brocades. A doorplate from the Nechung (*gnas chung*) complex within Drepung Monastery (fig. 26) shows many of the same features as are found in Chinese woven or embroidered textiles of the Wanli period (1573–1620).[51] By now dragons had lost some of their fierceness and have a playful quality. They display larger heads with bulging foreheads and small eyes and, most characteristically of all, five evenly spaced claws that are arranged like a Catherine wheel. In the case of the doorplate just described, dragons fly through Chinese-looking swirling clouds reinforcing the idea that they were a direct borrowing from Chinese art. Scrollwork of the sixteenth–seventeenth centuries (see cat. nos. 118–120) tends to show more elongated, snakelike tendrils that intertwine with other design elements. A later version of the typical fifteenth-century small,

bifurcating scroll form continues into the nineteenth century and is seen on a doorplate from the Mindroling (*smin grol gling*) Monastery (fig. 28). By this time the scroll had become more spaced out, formal, and symmetrical with reduced areas of overlapping. By the nineteenth century the dragon in Tibet was often depicted as a tame, pet-like creature, as shown on the screen to the funerary chorten of the Eighth Dalai Lama (fig. 27) in the Potala Palace.

Centers and Products in the 19th and 20th Centuries

The great ironworking centers of Kham lay on the traditional border with China, which has fluctuated during the last two centuries as a result of insurrection and warfare between local kingdoms, the central Tibetan government, and China. The foremost metalworking area, the principality of Derge, was able to remain virtually independent until 1909, when China intervened in a succession dispute, deposed the king, and installed a Chinese governor. Since 1955 Derge has been part of the province of Sichuan, lying just outside the border of the Tibetan Autonomous Region. Although Derge is also noted for its copper, silverwork, and casting industries, in the opinion of both Western travelers and local Tibetan metalworkers, the quality of its ironwork was probably supreme within Tibet.[83] As a principality Derge consisted of twenty-five districts (*rdzong khag*), with Horpo, whose origins have been discussed, the foremost metalworking area with a village of the same name at its center. It was here that the skills of damascening, or overlaying silver, gold, and copper (*'jam tshag*), onto the surface of iron was most fully developed. It was also famous for pierced iron decoration (*lcags dkrol*) and at that time Horpo was renowned for pierced saddles and pen cases. In the late nineteenth and early twentieth century Derge saddles, sword blades, scabbards, and knives were prized throughout Tibet, and at the end of the nineteenth century a Derge sword could fetch the equivalent of $150 to $200, a huge sum at that time.[84] Other products of Derge Horpo included knives, stirrups, bridles and bits, tinder pouches, and teacup cases. The round beer flasks damascened with auspicious emblems and dragons in gold, silver, and copper were made here and in Chamdo (*chab mdo*) to the southwest. Derge Gonchen, the capital of the principality, was also a center of production, and teapots, guns, swords, spears, inlaid saddles, and other ironwork poured from it.[85] To the south of Derge, along the Yangtze (*'bri chu*), lay the important ironworking village of Derge Poyul (*sde dge dpal yul*), its products being very similar to those of Horpo, and like Horpo it was particularly well known for its tinder pouches. Forty miles down the Yangtze lies Apishang,[86] known for its ritual objects and swords, where the skills of piercing and inlaying iron are still continued today (fig. 29). According to the opinions of both nineteenth-century scholar-explorers such as William Woodville Rockhill and twentieth-century informants from eastern Tibet, there was a definite hierarchy in the quality of products emanating from the towns of Kham. Derge stood at the top with Lithang (*li thang*) and Dayap (*brag g.yab*) under it and Chamdo at the bottom.[87] Farther to the southwest lay Dayap in Gonjo (*go 'jo*) state, noted for copper, silver, and ironworking. A small district within Dayap called Sholong (*zho long*) was known for its inlaid ironwork, and during the 1935–45 period there were about six people there making ornate saddles, gun barrels, locks, tinder pouches, and knife cases.[87] Other places known for their manufacture of swords and knives in Kham included Azho on the Le'chu, and Newa,[88] while in Somo state, one of the semi-independent tribes to the east of the Sino-Tibetan border, there were skilled sword smiths and gunsmiths who manufactured most of the guns in use throughout eastern Tibet.[89] Though the large-scale use of pierced and inlaid ironwork tailed off after the Chinese occupation of Tibet in 1950, the skills have not been lost entirely. At Horpo the main products today are large 12-inch-long steel daggers and shorter 6-inch versions for women. These have brass pommels and are cased in silver sheaths. At Apishang,

Fig. 29. Iron frame for the bottom half of a sword scabbard damascened with gold and silver, in production in Apishang, near Derge (photo: the author, 2003)

harness mounts enlivened with simple silver inlay, tinder pouches, decorated iron sword scabbards, and swords are still ordered (fig. 29), though ironwork is a small element of a larger production in copper, silver, and brass.

Production today, as in the last century, is carried out throughout the whole Kham region within villages and small towns and mostly in, or near, the houses of the craftsmen. Many metalworkers are part-time craftsmen and have a main job, most commonly farming. In the past demands for metalwork often competed with farming, and this led to the women and children in a family taking over farm duties at the busiest times while the men produced metalwork. But where there is a large family it has sometimes been possible for one or more brothers to be full-time craftsmen. The skill of Chinese metalworkers was also widely recognized throughout the borders of eastern Tibet, and in the late nineteenth century, itinerant Chinese blacksmiths made all the ironware for the nomads of the Kokonor area in northeast Tibet. This included saddles, knives, swords, matchlocks, kettles, and bowls.[90]

Raw Materials and Techniques

By the early twentieth century, most of the iron required in central Tibet was imported from India, but there were iron deposits in eastern Tibet at Chamdo, where smelting was also carried out, and in the Thangla (*thang lha*) mountain range on the Tibetan borders of Qinghai.[91] Wrought iron was also exported from Nepal to Tibet at the end of the eighteenth century and from Bhutan during the first half of the nineteenth century.[92] Tibetan former government officials also confirm that iron ore was one of the taxes in kind expected from iron-rich areas, and as there seems to have been no mining in western Tibet, we must assume this applied to eastern Tibet and specifically to the Chamdo area controlled by the Tibetan government.

The shaping of both wrought iron and steel requires a variety of differently sized and weighted hammers with variously shaped ends, depending on what type of surface is being worked. The largest hammers, *tho ba chen po*, are used at the start of the process when the most force is required. Hammers with rounded ends, *tho ba chung ba* or *tho ba ngo che*, allow rounded bowl shapes to be raised, while smaller, lighter hammers are used for more delicate work.[93] Most processes involving carving, stretching, flattening, rolling, and bending require iron to be heated to a red heat before it can be worked. When it is at this temperature the metal can be bent and rolled to create complex shapes. Decoration by piercing and incising or chasing the surface is carried out when the metal is cool by means of punches and chisels (*gzong*) in combination with hammers. There are three generic types of punches. For modeling, punches with square, oval, or round ends are used to raise shapes, and for overall decoration of the surface, dapping punches with patterned ends such as a circle or half moon are used. The effect of scales on the dragons' bodies on the iron teacup case (fig. 19 and cat. no. 113) is made by this type of punch, for example.

Fig. 30. Machete blade in production at Woochu in western Bhutan, 2000. The blacksmith is Phago, the last sword maker in Bhutan (photo: the author, 2000)

Lastly "tracer" punches are used to create a different overall background effect: a blunt roughened punch end will make a dull surface, while a flattened polished end will produce a shiny surface. For lines, a "running" punch (*kha gri gzong*) with a chisel-like end is used.

The blacksmiths of Kham were famous for pierced iron decoration (*leags dkrol* or *tshan phug*) usually in combination with overlapping, bifurcating scrollwork. The actual piercing was carried out after the scrolls were formed, using a chisel with a sharpened edge (*sho gzong*). There is also evidence that simple hand-operated mechanical devices were being used in eastern Tibet at the end of the nineteenth century to pierce iron.[94]

The other process for which the skilled ironworkers of Kham were particularly renowned was the overlaying of wrought iron with gold and silver, or damascening.[95] In this technique, said to be called *bcad sgrigs* (?), the surface of the iron is roughened by cross-hatching with a ridged punch and the softer metals are applied either as thinly beaten sheets or as wires. These are then beaten carefully down over the cross-hatching, ensuring that the top surface is flat and that the gold, silver, or occasionally copper is gripped by the cross-hatching beneath.[96] This technique is distinct from inlaying, in which a section of the host metal is removed and the inserted softer metal filling the space created is gripped by a cut that widens toward the bottom.[97] Wrought iron, which is almost free of carbon and manganese, has a remarkable resistance to corrosion, which is essential when it is to be overlaid with other metals.[98] An effect that is the same as mechanically overlaid gold may be simulated by fire or mercury gilding, which appears to be a late technique in relation to iron and is mostly seen on objects from the nineteenth century onward. On virtually all Tibetan flat inlaid ironwork, larger decorative emblems are outlined with a visible chased line that defines and emphasizes them against a surrounding plain surface. Some contemporary craftsmen effect this chasing after the inlaying has been carried out (fig. 29). Sometimes scrollwork and emblems have chased lines within them, running parallel to and echoing the outer boundaries. But intricate geometric wire patterning or other small designs are laid out on a rough surface without any defining lines. The early fifteenth-century Sino-Tibetan pieces are also distinguished by a skillful modeling of the iron, seen to advantage on the makara handles of ritual choppers (fig. 22) or the *tsi pa ṭa*, or Face of Glory, on sword hilts.

It is crucial for the blacksmith to be able to visually differentiate between the colors the iron progresses through as it is heated in order to know when to begin particular operations. The three key colors are, progressively, red hot, white hot, and welding hot, and these include a range of subtler shades ranging from red/dark gray to purple/red then white/yellow.[99] In order to be able to see the changes easily, workshops were situated belowground, something attested to during the nineteenth century in Lhasa, where they are described as lying beneath shops facing onto the street, and in eastern Tibet, where they might also be separate structures."[100]

The production of steel, an alloy of iron containing up to 1.7 percent carbon, required for swords, gun barrels, or toolmaking, similarly demands the ability to see color changes. In Tibet during the nineteenth century, swords were made by welding together two different types of steel in the form of rods lying side by side in a hairpin pattern. Later polishing of the finished blade revealed this "hairpin" design to form a decoration.[101] The shaping and working of a steel tool or weapon rendered it hard and brittle; it was therefore necessary to temper or heat it periodically, a process that reduced the hardness of the metal but made it tougher. It was finally heated to a red heat before a final cold tempering by quenching in cold water or oil, causing long crystals to grow in the structure, thus greatly toughening the steel. Nowhere is the gap between the old, long-held skills and the present-day ones more noticeable than in sword making. In eastern Tibet today members of the "younger" generation (under sixty) generally do not have the skills to properly temper swords and instead produce an iron sword blade intended only for show. But surviving members of the older generation, though retaining the skills, are not asked to practice them, as they are too costly or the craftsmen have themselves retired. Much cheaper steel daggers and swords are, however, still forged from steel automobile suspension springs. These are made both by Tibetans and by Chinese metalworkers from Yunnan who are settled in towns such as Kandze (*dkar mdzes*), Chamdo, and Derge. In Bhutan the knowledge of how to temper daggers, knives, and swords is retained in the village of Woochu near Paro (*spa gro*) (fig. 30).

1. Demiéville 1952, p. 180, n. 373.
2. Heller 1998, p. 103.
3. Demiéville 1952, p. 374. Mail armor is also depicted on the later reliefs at Taq-i Bustan, where it is worn by Khusraw II (590–628).
4. Dunlop 1973, pp. 303–4.
5. Ibid., p. 309.
6. Heller 1998, p. 100.
7. Needham 1971, pp. 197–98.
8. Ibid., p. 197.
9. Backus 1981, pp. 36, 78, 96; Needham 1971, pp. 198, 200.
10. From this time onward, small blast furnaces were being used to create wrought iron using the fining process by which brittle, unworkable cast iron was turned into workable wrought iron through the burning off of its carbon while in a molten state.
11. Zeki Validi 1936, p. 35.
12. Wagner 2001, pp. 111–12.
13. Ibid., pp. 7–8.
14. By A.D. 661 Tibetan armies had had penetrated to the junction of the Karakoram and Pamir mountains in the west, where they subdued Gilgit for the first time, and at periods in the 8th century Tibetan troops were found as far west as Fergana and Samarqand, afterward maintaining commercial exchanges with these areas.
15. Bosworth and Asimov 1998–2000, pt. 2, p. 36.
16. Le Strange 1930, p. 488; Craddock and Lang 2003, pp. 245–46; Wagner forthcoming, pp. 203–4. Sites of crucible steel blast furnaces from the 9th to the 13th century have been discovered at Eski Achsy and elsewhere in the Fergana Valley (Uzbekistan).
17. Beckwith 1977, p. 101.
18. Demiéville 1952, p. 373.
19. Lang, Craddock, and Simpson 1998, pp. 7–10; Craddock and Lang 2003, pp. 243–44. A Sasanian sword of the 6th century at the British Museum (WA 135747) was found to be of crucible steel. We also know that the Sasanians imported Indian steel from the 3rd to the 5th century A.D. and used it to make such famously high-quality swords.
20. Lang, Craddock, and Simpson 1998, p. 12.
21. Tibet controlled the northern Silk Route itself across Central Asia from 787 to 842.
22. Carter 1998, p. 37.
23. Sinor 1990, p. 296. The connection of the Turkic populations of Central Asia to ironworking was already established by the 6th century, and the historian Menander remarked that the Turks often offered iron to visitors to their lands to advertise their mining resources.
24. Zeki Validi 1936, pp. 33–36; *Encyclopedia of Islam IV*, pp. 658–59: Chinese *Ko lo hu*, Persian *Khallukh*, early Arabic *Kharlukh*.
25. The Kuqa area had passed from Tibetan control in 790–860 to Karluk control and was finally, by the 11th century, settled by the Tokuz Oghuz, or Nine Clans, one of the tribal groups of the Orkhon Turks.
26. Zeki Validi 1936, p. 35. Al-Idrisi has Djermac for Farman; Jaubert 1975, p. 490; also Minorsky 1937, p. 295. Barman may be another form of Bakhwan given in al-Idrisi (also called in Tibetan *par han*, in Chinese *Pa huan*); see Jaubert 1975, pp. 491–92.
27. Sinor 1990, p. 297.
28. Beckwith 1977, p. 101; Pyhrr, LaRocca, and Ogawa 2002, p. 44.
29. I wish to thank Philip Denwood for this idea and bringing to my attention the article Zeki Validi 1936.
30. Rockhill 1895, p. 277: Kangsar, Mazur, Beri, Chu wo, and Chango. Roerich 1931, p. 333: the 19th- and 20th-century collective usage of the term *hor* in Tibet also meant the nomadic tribes of mixed origin living to the north of central Tibet, where travelers such as Roerich discerned Mongolian, Turkish, and even Iranian elements. These were the Nub Hor, the western Hor, to distinguish them from the five eastern Hor tribes in Kham.
31. Sinor 1990, p. 271.
32. Yoshinobu 1983, p. 94.
33. Sinor, Shimin, and Kychanov 1998–2000, p. 203.
34. Uray-Kőhalmi 1989, pp. 187–89.
35. Alexander 1992, pp. 64–65, n. 24.
36. See Allan 1982, pp. 14–17, for discussion of inlay in the Islamic world.
37. Komaroff and Carboni 2002, p. 63.
38. Das 1904, p. 277. At this village in the 20th century there was a mixture of these monastery-paid workers, a central government guild, and private workers, and among them were many metalworkers. See Clarke 2002, pp. 116–17.
39. Moore 1995, p. 17.
40. For a full account, see Clarke 2002, pp. 122–25.
41. Waddell 1906, pp. 170, 427. They had locally made lathes for boring gun barrels and English saws, files, and other tools.
42. Aris 1979, p. 185; also Dudjom Rinpoche 1991, vol. 2, p. 76, for other versions of life dates.
43. Aris 1979, pp. 185–88. Tangtong Gyalpo was also a discoverer of hidden religious texts and a *gter ston* (treasure finder), and is linked to rituals carried out to prolong life (*tshe sgrub*), which are still performed today in Bhutan. In order to finance his program of bridge building, he is said to have raised a touring operatic troupe, also creating the dance dramas called *a ce lha mo* (Lady Goddess), which are still performed in Tibet today.
44. Chan 1994, pp. 453, 561, 863.
45. Ibid., p. 379.
46. Weldon and Singer 1999, p. 184.
47. Aris 1979, p. 188, has bye 'u.
48. Local tradition in Paro maintains that two local sources for the iron were mines at khes nyes and ge mi na above Woochu itself.
49. Thinley 1980, p. 83.
50. For the hammer, see sale cat., Christie's, Amsterdam, October 23, 1991, lot 165; and a chopper of the same date at the Museum of Fine Arts, Boston (fig. 21, left). Also see Thurman and Weldon 1999, nos. 59, 60, 65.
51. *Rituels tibétains* 2002, p. 149.
52. Zwalf 1985, pl. 307; Clarke 2004, p. 24, no. 13.
53. Huntington and Bangdel 2003, figs. 108, 156, for a related *phur pa*. The incense burner is Cleveland Museum 1983.154; see Watt and Leidy 2005, pp. 81–82, pl. 32.
54. The mask is Metropolitan Museum of Art L.1994.23; the ritual fire spoons, MMA L.1993.477.1.1a, b, and L.1993.477.1.2; and the *khatvanga*, MMA L.1993.69.5 (fig. 24). The fire spoon L.1993.477.1.1a, b is inscribed *da Ming Yongle nian zhi* (bestowed during the Yongle era of the great Ming), and the *khatvanga* is inscribed *Yongle nian zhi* (made in the Yongle era), supporting the idea of such objects as diplomatic gifts. See Watt and Leidy 2005, pp. 73–81, pls. 27, 29, 30.
55. The *ruyi* is an ancient Chinese symbol of authority based on the form of a sacred fungus.
56. Mikami 1981, pp. 65–67, 72, 76, 203, 205–6.
57. Gluckman 2004, p. 83.
58. A group of early 15th-century embroideries depicting Buddhist deities, including two with Yongle reign marks, held in the Jokhang Temple in the center of Lhasa, together with others of the Xuande period, may be regarded as another related group of objects made in China as gifts intended for Tibet. A number of slightly later paintings, which are dated from between 1474 and 1516, show a similar cross-cultural blend to the bronzes and textiles, though they represent a later stage of its stylistic evolution. These feature Sakya order tutelary and protective deities and are associated with centers of Tibetan Buddhism in Beijing. The Sakya subject matter and the dating of several paintings to the year, month, and day of the reign suggest that they were made for specific rituals or to mark the visits of high lamas of the same order. Although Tibeto-Nepalese stylistic traits may weaken over time, both paintings and bronzes faithfully adhere to Tibetan iconography, suggesting guidance from Tibetan lamas in residence at temples, though production itself may have been executed by Chinese craftsmen in associated workshops. For bronzes, see

Weldon 1996; for textiles, see Henss 1997, pp. 26–39; for paintings, see Lowry 1973; Kidd 1975; Kerr 1991, pp. 100–101; Tokya-Fuong 1997, p. 30; and sale cat., Christie's, Amsterdam, November 19, 1997, lot 9.

59. Jing 1994, pp. 66–70. This artistic prodigy who was invited to the Mongol court in 1263 rose rapidly to become head of the Supervisorate in Chief of All Classes of Artisans in 1275, a role in which he commanded more than three thousand artisan households producing mainly painting and bronze sculptures, though woven textiles and works in lacquer also formed part of the production.
60. Weldon 1996, pp. 67–68. By the reign of Yongle the bronze religious images still reveal a partial Tibeto-Nepalese physiognomy and the careful attention to jewelry and ornaments that are typical of Nepalese bronze casting, yet they show none of the love of ancillary detail such as the use of inset stones, lion throne supporters, or animals adorning the mandorlas at the back of images that are so typically Tibetan, and the flowing robes worn by the figures are Chinese in conception.
61. Kerr 1991, pp. 100–101.
62. Komaroff and Carboni 2002, p. 69.
63. Another possible 13th- or 14th-century piece is a damascened helmet at the Royal Armouries Museum, Leeds; see Peers 1992, p. 6. An armor said to have been given by Kublai Khan to Phagpa during the second half of the 13th century and preserved in Sakya Monastery appears stylistically to be later; see LaRocca 1999a, p. 124.
64. It must be noted that a small body of purely Chinese style damascened iron dating from the late Ming and Qing (17th–19th centuries) shows the Chinese adoption of the technique and its continuation into later periods. Objects in this group include a flute (1983.0128.1), a lock (1905.1115.61), and two boxes (1878.1230.955, OAr 6653) at the British Museum, and at the Victoria and Albert Museum, a brush pot (M302-1912).
65. Kolmas 1968, pp. 28–30.
66. Henss 1997, pp. 32–33.
67. Karmay 1975, p. 80.
68. Ibid., p. 79.
69. Tsai 2001, pp. 187–88.
70. See Karmay 1975, pp. 74–99; Henss 1997, pp. 32–35; Watt and Leidy 2005, p. 81. There were at least thirteen delegations between Tibet and China during the Yongle reign, including those to secular figures which have not been described in detail here. During this decade there were also Tibetan requests for permission to settle in Beijing, which were granted on several occasions
71. Richardson 1998, p. 344.
72. Communication from Nik Douglas in 2004, and with thanks to him and Amy Heller for this reference.
73. Sale cat., Christie's, Amsterdam, October 23, 1991, lot 165; sale cats., Christie's, New York, March 23, 1997, lot 108, and September 17, 1998, lot 98; Thurman and Weldon 1999, pp. 136–39.
74. Watt and Leidy 2005, pp. 34–35, pls. 5, 6. The stem cup in pl. 6 bears a Xuande reign mark (1426–35).
75. Sale cat., Sotheby's, London, April 24, 1997, lot 122.
76. Clarke 2002, pp. 119–20. This type of corvée labor, called *lag khral* (hand tax), was widespread in Tibet, and though the production of metal objects as tax items was highly unusual, it was not unknown and was followed in the Sakya principality in southern Tibet, one of whose sister monasteries was Derge Gonchen.
77. See Vitali 1990, pp. 105–12, for discussion of the Yuan murals at Shalu.
78. Watt and Leidy 2005, pp. 77–78.
79. Cammann 1952, pp. 172–73; Gluckman 2004, p. 73.
80. Hong Kong 1995, pp. 199, 209.
81. Ibid., pp. 203, 281.
82. Teichman 1922, p. 171; Ronge 1978, p. 145.
83. Rockhill 1895, p. 712.
84. Sandberg 1906, p. 157.
85. On older maps and according to some senior craftsmen, Apëshang is also called Apinang.
86. Rockhill 1891, p. 2; Rockhill 1894, p. 358, Clarke 1995, vol. 1, p. 163.
87. Clarke 1995, vol. 1, p. 165.
88. Rockhill 1894, p. 330.
89. Ainscough 1914, p. 11.
90. Rockhill 1891, p. 81.
91. Lo Bue 1981, p. 58; Clarke 1995, vol. 1, pp. 267–68.
92. Lo Bue 1981, p. 59.
93. Rauber-Schweizer 1976, pp. 144–45, has *sbub tho* for a hammer with two rounded ends, *lag tho che ba* for a hammer used for less delicate work, and *mthar tho* for a hammer used for fine work.
94. Bonvalot 1891, vol. 2, p. 15.
95. The term "damascening" is sometimes also used to refer to the pattern-welded steel blades of swords from the Middle East.
96. Rauber-Schweizer 1976, pp. 138–39.
97. Ibid.
98. Untracht 1975, p. 34.
99. Rauber-Schweizer 1976, pp. 115–16.
100. Bonvalot 1891, vol. 2, p. 150. A French explorer, Bonvalot described a forge he visited at Lagong in eastern Tibet in the last decade of the 19th century: "By a low door we descended to an underground forge, four posts supporting the sloping roof by which the light enters and the smoke escapes. Someone is kneeling between two goatskin bellows which he works alternately with either arm. The old man is bare to the waist and looks like a denizen of the lower regions."
101. Smith 1960, pp. 8–9.

ARMOR AND WEAPONS IN THE ICONOGRAPHY OF TIBETAN BUDDHIST DEITIES

AMY HELLER

Tibetan representations of male protector deities frequently present them dressed from head to foot in helmet and armor, brandishing a sword, and carrying several other different weapons, ready to defend the Buddhist doctrine and its proponents.[1] These guardian deities represent the epitome of vitality and strength and are depicted in armor to emphasize their invincible nature. Their portraits in sculpture and paintings are some of the most remarkable creations of Tibetan art owing to the extreme ardor and energy they manifest to defend Tibetan religious traditions. How and why did the Tibetans create these deities? To answer this question, we will examine here some examples of these deities and their unique weapons as well as the development of their cult in Tibet over the centuries.

The concept of Buddhist deities represented as warriors was inherited from Indian Buddhism as it was progressively introduced to Tibet during the seventh and eighth centuries. The guardians in Indian Buddhism were often depicted as highly muscular athletes wearing loincloths and wielding weapons or carrying shields. Armor was not frequently represented on guardian deities in India at this time. The Tibetans did not rely exclusively on the Indian models of representation of these deities but were also influenced by Buddhist iconography from Central Asia and Tang China, where the guardians of the four directions were already sometimes shown in armor. In fact, because the Tibetans' civilization prior to Buddhism was centered around warrior deities, they were very receptive to the concept of Buddhist guardian deities in armor.

Fig. 31. Begtse, 18th–19th century. *Tangka*, pigment on cotton, 30 x 20 in. (76.2 x 50.8 cm). Newark Museum, Dr. Albert L. Shelton Collection, purchase 1920 (20.268)

The Ancient Tibetan Warrior Deities

Even before Buddhist teachings were introduced into Tibet during the seventh–eighth century, Tibetan esteem for warriors was high—to such an extent that the sovereign, the Tsenpo (*btsan po*, literally, the mighty one), was regarded as a powerful divine warrior. We may interpret his title to mean that he was the supreme warrior, of divine origin, who made manifest his deified nature by his superior qualities as warrior and leader of men. Many ancient Tibetan documents of the eighth–ninth century describe the Tsenpo with his sacred helmet (*dbu rmog*) and his divine radiance (*byin*), the two principal outward signs of his valor and his invincibility. "The Tsenpo is a god who became the sovereign of men, due to his power derived from the great radiance of his sacred helmet. That is why all the kingdoms under the sun, south, north, west, and east, all obeyed his orders and all have been conquered."[2] This incandescence is the source of his military valor and prowess (*byin gyi dgra thabs*), "the radiance which is the means to vanquish the enemy."[3] The sacred radiance of his helmet is the emblem of his power, rendering him a "supernatural warrior" constantly assured of victory. In the Lhasa treaty inscription of A.D. 822, it is said of the Tsenpo, "Subduing external enemies through knowledge of the arts of war, they increased the extent of their dominion. Through the ever-increasing might of their helmet, their wise order was immutable. . . . Thus each and every inhabited region without exception did not fail to revere the mighty helmet and the excellent customs of the supernaturally wise divinity the Tsenpo."[4] At present, there is a reminder of this ancient sacred helmet in the helmet (*dbu rmog*, literally, venerable helmet) worn by the special protector deities such as the State Oracle of Tibet.[5]

The Tsenpo was believed to be a human manifestation of divine presence who first appeared on earth as he descended from a sacred mountain. His personal guardian deity was identified with a sacred mountain that it was his duty to defend as a "sacred precinct."[6] Territorial

defense and expansion was not merely political policy. It was the sacred duty of the Tsenpo to expand the Tibetan territory and create vassal states whose tribute would ensure prosperity:

> *The Tsenpo came from the land of the gods to be the ruler of men. His was a good religion which never varied; he had great power and his radiance (*byin*) was like the sky, that is why the kingdom has grown, and the sacred helmet has always been mighty. . . . Making the dominion firm for ever by the successsion of his sons; making the populace happy by his orders, conquering the external enemies by the sacred or glorious military strategy (*phyi'i dgra 'dul ba'i byin gyi dgra' thabs*).*[7]

Also, the Tsenpo was considered guarantor of social justice and the well-being of the Tibetan people. Thus the cult of the Tsenpo was practiced to ensure the stability of the empire and the royal government as well as to preserve the divine order. Belief in an afterlife led to elaborate funeral rituals for the Tsenpo and great ministers and generals, which included burial in tombs with food, utensils, jewelry, garments, armor.[8] These rituals were accompanied by the sacrificial burial of live horses in elaborate saddles and tack—sometimes as many as a hundred—for the horse was the symbol of the success of the warrior: his friend in this life and a guide in the afterlife.[9] The Tsenpo achieved their sacred goals, for from the mid-seventh to the mid-ninth century, the clout of Tibetan military power was feared throughout much of Asia. The Tibetans created a strong empire with garrisons stretching from Ladakh to Sichuan as well as throughout the Silk Route oases from Dunhuang to the Pamirs and the Karakoram Range. Their renowned metallurgical skills contributed to their success in war, both for the manufacture of weapons and armor and for strategic advantages such as the eighth-century construction of iron chain suspension bridges to transport troops and goods, a technology not found in the West for nearly another thousand years.[10]

The Tsenpo as warrior was the core of the religion and the Tibetan empire. The earliest representations of the Tibetan Tsenpo were painted during the mid-eighth–mid-ninth-century Tibetan occupation of Dunhuang, where there are many mural paintings of the Buddha with a cortege of royalty. Dunhuang ceremonial scenes show the Tsenpo represented as supreme sovereign among many kings, all dressed in long robes. The Tsenpo was often depicted with, suspended from his waist, his sword, regalia of five or six knives, and two crossed knives.[11] Leopard pelts and tiger-skin trim on garments were a sign of the Tsenpo's success in battle.[12]

Unfortunately, in the extant mural paintings, there are no representations of the Tsenpo in armor and helmet. Yet literary descriptions help us understand how they were dressed for their exploits. For example, in the *Tibetan Chronicle*, which was written in the mid-eighth century and preserves the genealogy and exploits of the Tibetan dynasty from earliest traditions until the reign of Trisong Detsen (*khri srong lde btsan*, r. 755–ca. 797), there is the following request by a vassal to his sovereign, extolling his exclusive possession of miraculous weapons:

> *Yes, I will dare [to battle], if you in turn give me the treasures of the gods: the magical lance which attacks alone (*mdung rang 'debs*), the sword which cuts on its own (*ral gyi rang gcod*), the armor which clothes [the body] on its own (*khrab rang gyod*), the shield which repulses [arrows] on its own (*phub rang bzur*). You will give me the power of these great magical possessions, then I accept to fight.*[13]

The significance of magical armor of this type is that the wearer would be instantly and effortlessly clothed in armor and therefore instantly protected and ready for action. The advantage of weapons that act independently is obvious, as is a shield offering effortless protection. This key passage helps us understand how the Tsenpo and his warriors were equipped.

The *Tibetan Chronicle* later (line 262) describes ten armors and two swords as sacred objects that a vassal gave to his king to show allegiance (*sku rten du khrab bse' sna bcu dang ldong prom gyi ral gri mdor cod gnyis gsol to*). The word describing the material of the armor is *bse*, which is variously translated as "leather" or "rhinoceros hide," and may refer specifically to decorated leather, which characterizes the leather from which most armor is made.[14] Although *bse* is a word whose signification has varied over time, it probably refers to leather lamellar armor, or armor of small leather plates laced together, which is the way Tibetan armor is described in the ninth-century Tang Annals.[15] At Samye (*bsam yas*) Monastery in central Tibet, in a late eighth-century stone sculpture of the Buddhist god Vaisravana, god of wealth and also the guardian of the North, the deity is depicted wearing a breastplate of rows of small plates (fig. 32). This may be the earliest extant example of a Tibetan sculpture of a deity wearing a breastplate. A mural painting of Vaisravana made during the occupation by Tibetan troops along the Silk Route near Dunhuang, dating from the early ninth century, shows a slightly later lamellar armor with a skirt made of sewn-together plaques covering the legs (fig. 33).

The French Sinologist Paul Demiéville studied the ancient Chinese armor terms in the Tang Annals and differentiated those for lamellar armor and for mail armor, both of which were described as worn by Tibetans; mail armor was also described as covering horses.[16] Moreover, Demiéville stated that Tibetan armor was worn over a silk or leather undershirt.[17] Recent research on Tibetan manuscripts written in Dunhuang during the Tibetan occupation has revealed the ancient Tibetan terminology for the silk undershirt, *dar gyi beg tse*.

Fig. 32. Vaisravana, late 8th century. Stone, H. approx. 11¾ in. (30 cm). Samye Monastery, Tibet (photo: the author, 1986)

Fig. 33. Vaisravana, late 8th–early 9th century. Wall painting, H. approx. 70⅞ in. (180 cm). Anxi Yulin cave 25, Dunhuang (photo: after Duan Wenjie, ed., *Dunhuang shi ku yi shu. Yulin ku di 25 ku, fu di 25 ku [zhong Tang]* [Nanjing, 1993], pl. 150)

The garment was so important a component of the complete armor that later the term became the name of one of the major Buddhist protective deities.[15]

In extant Tibetan manuscripts written during the eighth–ninth-century Tibetan occupation of Dunhuang, there is documented a new use of weapons: Buddhist protective charms that have prayers surrounded by drawings of daggers, the *vajra*, ritual scepters, swords, and hooks. In this context, these are all weapons of protective and ritual function. As Buddhism was altering Tibetan society, by the late tenth century the ideal of the Tsenpo as sacred warrior was changing into the ideal of a ruler in devout service to Buddhism and in close relation to the increasingly powerful Buddhist clergy. Rather than expanding the Tibetan empire, the kings sponsored the founding of monasteries and massive projects of translating Indian Buddhist texts into Tibetan. Thus the cult devoted to the Tsenpo as sovereign warrior deities gradually transformed into the veneration of the Buddha assisted by protective deities who ensured the survival of the Buddhist teachings.

Tibetan Development of Warrior Iconography

During the period of translating texts from Indian ritual anthologies, Tibetans followed the Indian Buddhist models of protective deities

Fig. 34. Helmet (ca. 14th century, iron with silver damascening), a set of four mirrors, fragments of a lamellar armor, and pieces of horse harness. Shalu Monastery, Tibet (photo: the author, 1999)

dressed in short dhotis made of animal hides. Innovative descriptions of wrathful defender deities were written by Tibetan lamas in the thirteenth century during antagonism between various monastic schools that led to armed combat in efforts to gain territory and economic and political prominence. These wrathful deities were regarded as family protectors and as emanations of the major deities of Buddhism; they might also be local mountain gods, who, as territorial defenders, were potentially represented as wrathful warriors, always armed and often wearing armor. As of 1247, the political relationship between Tibet and the Mongols was initiated, and it was the Mongols who would soon organize the administration of China under their reign as the Yuan dynasty (1279–1368). The Mongol armies were renowned fighters. Armor was sent to the Tibetan monasteries of Shalu and Sakya, which had political relations with the Yuan; some is conserved to this day. One example, the helmet in figure 34, has decoration damascened in silver that recalls Chinese *ju'i* motifs. The monks of Shalu regard it as a relic of the early fourteenth century, an item of tribute during a period of reconstruction at Shalu when there were Chinese and Mongol artists at the monastery.[19] According to local documents, the mural paintings in the entrance chapel of Shalu were painted in 1306, during this period of remodeling,[20] and in one representing Vaisravana and his eight attendant cavaliers, one of the attendants is dressed in full lamellar armor, including a Tibetan-style helmet (fig. 35).

The earlier models of armor worn by Vaisravana and the guardians of the directions probably fused with armor actually seen or used in Tibet during the Yuan dynasty, which led to the creation of Tibetan iconographical models for wrathful male protector deities in armor, although some holding swords or bows and arrows are depicted as hunters, wearing Tibetan robes instead of armor. The practice of the cult of the wrathful protective deities was restricted to those who had received special initiations, and in the monasteries access to the chapel for their worship was restricted. Visually, these warriors are some of the most impressive creations in Tibetan iconography. The chapel interiors are often painted black and the representations of warriors outlined in gold with little pigment infilling, which gives a very dramatic effect. In the Gongkar Monastery in central Tibet, the theme of Vaisravana and his attendants was again a subject, this time in the late fifteenth-century

Fig. 35. Detail of a wall painting depicting Vaisravana and his eight horsemen, ca. 1306–10. H. of detail approx. 9¾ in. (25 cm). Shalu Monastery, Tibet (photo: Lionel Fournier)

mural paintings by Kyentse (*mkhyen brtse*), one of the most famous painters in Tibetan history.[21] In one mural a cavalier wears a Tibetan helmet and an armor made of interlocking Y-shaped scales and carries a round shield dramatically decorated with the mask of a fierce guardian deity (fig. 36).[22]

The liturgies for the wrathful protective deities wearing armor became more developed during the thirteenth–fourteenth century. Let us examine, for example, the description for Begtse (*beg tse*) written by an early fourteenth-century teacher at Shalu: "You the youth of *bse*, whose body has the red color of rituals of power, your hair is always tied back, you wear copper armor (*zangs kyi beg tse*), you carry a copper knife in your right hand, you carry a heart and lungs in your left hand, your body gleams with shine and radiance (*byin pa*). . . ."[23] Later in the same ritual we read: "You the protector who wears the copper armor (*zangs kyi beg tse*), your red hair is always tied back, on your body you have the copper breastplate (*zangs kyi ral kha*). You have copper arrows and copper bow in [a quiver] of tiger skin (*zangs mda' zangs gzhu stag chad brgyan*). In your right hand you wield the sharp copper knife (*zangs gri rnon po*), in the left you hold the spear of red leather (*bse mdung dmar po*)." In comparison with the iconography of *beg tse* seen in an eighteenth-century Tibetan painting, there is close correspondence between the weapons and armor described and the artistic representation of the principal deity (fig. 31). The major distinction is the entourage of the deity, which grew over time to include not only eight young men wielding knives, but also twenty-one armored warriors.

Fig. 36. Kyentse, wall painting depicting one of Vaisravana's eight horsemen, late 15th century. H. of detail shown approx. 9⅞ in. (25 cm). Gongkar Monastery, Tibet (photo: the author, 2005)

Fig. 37. The oracle of the deity Balung Choje, photographed at Yongning by Joseph F. Rock in 1928 (photo: National Geographic Image Collection)

Fig. 38. Mahakala with Lhamo and attendants, dated by inscription 1292. Stone. Collection of Lionel Fournier (photo: Lionel Fournier). Lhamo with her scorpion-handle sword is depicted at the lower right

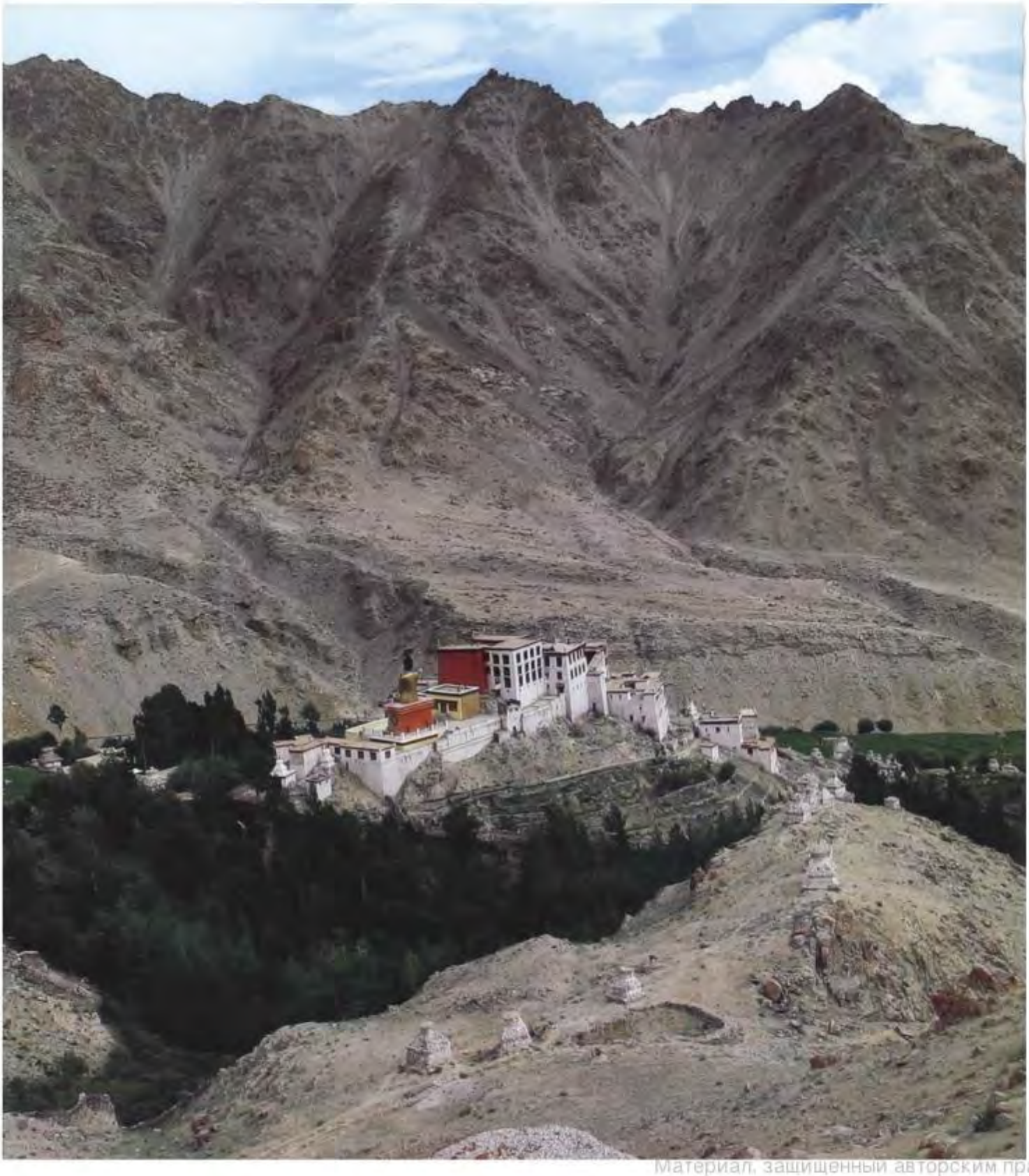
As of 1642, the Fifth Dalai Lama had reorganized the Tibetan government with Lhasa as capital and his role as the supreme secular and religious authority in Tibet. He codified rituals for deities as protectors of the government, as the institution of theocratic government was developing its protocol, which included a new emphasis on the cult of certain oracle deities who were dressed in elaborate helmets and armor as they gave pronouncements for the policies of the state for the coming year. As may be seen in a 1928 photograph of an oracle in Yongning, there is a strong resemblance between some oracle helmets and the helmets seen in depictions of the wrathful deities and also between the "breastplate" worn by the oracles and the similar pectoral disks worn by the deities (fig. 37). The large and heavy helmet worn by the oracle is a symbol of the supernatural powers manifest in the medium during a trance, when the medium is possessed by the protective oracular deity. The weight of such a helmet is so great that assistance is needed to put it on, but the oracle then wears it with great aplomb during his trance. The physical force of such trances is tremendous, for the oracles repeatedly perform feats such as twisting iron swords with their bare hands. Such exertion is inevitably followed by an extreme state of exhaustion and collapse. The power attributed to the oracle and the protective deity in armor and helmet manifested through the oracle gradually led to recognition of this deity as one of the two principal protective deities of the government.

The Glorious Goddess Lhamo is the other principal protective deity of the Tibetan government. Lhamo is a wrathful deity who is female. Her cult was introduced to Tibet from India, where she is associated with Mahakala, one of the major Indian Buddhist protective deities. The earliest extant representation of Lhamo is found on a stone statue inscribed with a dedication after it was carved in 1292 (fig. 38). At the center we see Mahakala, the epitome of an Indian protective deity, who is represented as a stout, robust creature. His grimace emphasizes his fangs and ferocious expression. He is crowned and adorned with much jewelry and is essentially dressed in bone ornaments and a short loincloth of tiger skin. He holds a club and a skull cup, and he crushes a Hindu deity underfoot. He is surrounded by several attendants, three fierce male protective deities and Lhamo. She is without armor, nude save for bone ornaments and a short skirt. A female wrathful deity whose weapons and powers have made her protector deity of the Dalai Lama and the Tibetan government, she is depicted carrying an Indian ritual scepter (*khatvanga*), a lance, a skull cup, and a very special sword that has a scorpion handle. In Tibetan medical and religious traditions, the scorpion is esteemed for both its curative and its coercive powers. The holder of a sword with a scorpion hilt is a wielder of power, immune to the venom of the scorpion and even capable of using the scorpion as a weapon in addition to the sword blade. The scorpion sword thus reminds us that in Tibetan Buddhism weapons are conceived not just for their potential for violence against enemies, but also for the intent of their aggressive characteristics in defense of Buddhism against enemies.[24] Yet, since the enemies of the Buddhist doctrine are any and all pernicious elements that prevent good concentration and ethical behavior, these weapons and the deities who wield them ultimately represent the Buddhist ideal of mental discipline, the taming and pacification of the mind for the benefit of humanity.

The arms and weapons of Tibetan warrior deities were subject to the same metamorphoses over time as Tibetan society itself. The military and expansionist ideals promoted by the Tsenpo to bring well-

being in a terrestrial paradise were replaced by the Buddhist ideals of compassion, serenity, and liberation from suffering. To achieve these goals, the individual must seek to conquer the obstacles of ignorance, passion, and delusion. The metaphor of the sword, for example, is to cut through the clouds of ignorance. This is how Tibetans conceive their warrior deities, who wear armor and wield their weapons to protect and preserve Buddhist teachings.

1. This essay concentrates on the iconography of protective deities as developed in Tibet principally by adherents of the Buddhist religion. Some Tibetans also practice the Bon religion, in which the role and iconography of protective deities are largely analogous with Buddhism. The cult devoted to mountain deities is common to both religions as practiced in Tibet.
2. This quotation is from a manuscript from Dunhuang, Bibliothèque Nationale de France, Paris, Fonds Pelliot tibétain, no. 216, as well as a Tibetan inscription carved in stone ca. A.D. 816 at the tomb of one of the Tibetan kings. It is cited in Ariane Macdonald, "Une lecture des Pelliot tibétain 1286, 1287, 1038, 1047 et 1290: Essai sur la formation et l'emploi des mythes politiques dans la religion royale de Srong btsan sgam po," in *Études tibétaines dédiées à la mémoire de Marcelle Lalou* (Paris, 1971), pp. 338–39.
3. Richardson 1985, p. 88.
4. Richardson (1985, pp. 109–11) discussed the terms of this treaty signed between Tibet and China in A.D. 822, of which the text was carved on a stone stele that still stands today in front of the Potala in Lhasa.
5. Nebesky-Wojkowitz 1975, p. 411.
6. These deities identified as protectors of mountains are represented as armed warriors, dressed either in armor or in Tibetan robes. Eventually their cult was integrated into Tibetan Buddhist practices.
7. This quotation is from the tomb inscription stele of Trisong Detsen (*khri srong lde btsan*), ca. A.D. 816, ll. 3–6, as translated in Richardson 1985, pp. 86–87, 88–89, with amendments by the author.
8. Armor segments were excavated from Tibetan tombs in northeast Tibet, in what is now Qinghai Province; they are illustrated as drawings in the research published by Xu Xinguo, chief archaeologist and deputy director of Qinghai Province Archaeological Institute, Xining, "A Conclusion [An Analysis] of Gold and Silver-Plating Vessels Found in Tubo Tombs in Dulan belong to Sogdi System," *Zhongguo Zang Xue / China Tibetology*, no. 4 (1994), pp. 31–45.
9. The sacrificial burial of one hundred horses at the tomb of the great general is discussed in the old Tibetan *Chronicle* (BNF Pelliot tibétain, no. 1287, ll. 264–74). In recent excavations, Chinese archaeologists studied an 8th-century Tibetan tomb with eighty-seven horse skeletons arranged in five trenches in front of the tomb in Dulan, now in Qinghai Province. See Xu Xinguo, "An Investigation of Tubo Sacrificial Burial Practices," edited and translated from Chinese by Susan Dewar and Bruce Doar, *China Archaeology and Art Digest*, no. 3 (December 1996), p. 15; Amy Heller, "Some Preliminary Remarks on the Excavations at Dulan," *Orientations* 29 (October 1998), pp. 84–92; and Amy Heller, "Archeology of Funeral Rituals as Revealed by Tibetan Tombs of the 8th to 9th Century," in Matteo Compareti et al., eds., *Webfestschrift Marshak: Ērān ud Anērān. Studies Presented to Boris Ilich Marshak on the Occasion of His 70th Birthday* (electronic version, Buenos Aires, 2004), http://www.transoxiana.com.ar/Eran/Articles/heller.html (print version, Venice: Cafoscarina, forthcoming).
10. For the history of Chinese bridge construction and the strategic advantage gained by the Tibetans due to their metallurgical skills, see Backus 1981, p. 28 and n. 79.
11. See Dunhuang cave 159 for paintings of the Tsenpo and his entourage with such garments, for example as illustrated in Duan Wenjie et al., eds., *Les fresques de Dunhuang*, vol. 15 of *5000 ans d'art chinois* (Brussels, 1989), pls. 110–12.
12. See Dunhuang cave 231 for mural paintings of the Tsenpo and entourage, a tiger-skin cloak and leopard pelt draped over the Tsenpo's garments, and a long sword suspended from the waist, reaching below the knee. In the same cave, another person of the royal entourage has a wide lapel of leopard pelt and crisscrossed short knives retained in the belt, with several pointed implements suspended from the waist. Cave 360 has a painting of the Tsenpo with a sword in scabbard draped from a leather strap with metal plaques over his shoulder; the sword hangs at knee level, and the pommel of the sword is clearly delineated. In cave 454, the Tsenpo again has tiger-skin trim on garments and five pointed implements suspended from the belt.
13. *Tibetan Chronicle*, BNF Pelliot tibétain, no. 1287, "'ung nas lo ngam gyis gsol pa / de ltar myi gnang na / lha'i dkor mdung rang 'debs dang / ral gyi rang gcod dang / khrab rang gyon dang / phub rang bzur la scogs pa / 'phrul gyi dkor ched po mnga' ba'i rnams bdag la scol na phod ces gsol to." See Bacot et al. 1946, pp. 97, 124, for Tibetan text and French translation; English translation by the author.
14. See, for instance, the definitions under *bse*, *bse ko*, *bse khrab*, and *ko bse* in the *bod rgya*. Rhinoceroses are not indigenous to Tibet; it is probable that this definition was given to refer to the hard and resistant quality of the leather rather than the actual animal, although the Chinese Annals of the Sung dynasty record that the Dali kingdom (modern Yunnan) sent rhinoceros-hide armor as tribute; citation in Schafer 1963, p. 230.
15. Ibid., p. 260.
16. Demiéville 1987, pp. 202–3; also cited in Schafer 1963, p. 260.
17. Demiéville 1987, p. 375.
18. Amy Heller, "Étude sur le développement de l'iconographie et du culte de Begce, divinité protectrice tibétaine" (diss., École Pratique des Hautes Études, IVe Section [Histoire et philologie tibétaines], Sorbonne, Paris, 1992), pp. 23–28.
19. Personal communication during visit by the author to Shalu in 1995, 1996, and 1999.
20. See Vitali 1990, p. 109.
21. See Jackson 1996, chap. 4.
22. Another rider in the same mural wears a lamellar armor with pendant lappets at the base of the skirt, just as actual armors have. I am grateful to Donald LaRocca for pointing out this last feature to me.
23. Written by dpal ldan seng ge, a teacher of Buston (*bu ston rin chen grub*, 1290–1364, abbot of Shalu), this description was included in a 16th-century ritual anthology compiled by tshar chen blo gsal rgya mtsho, *Beg tse he'u bum (Gnod sbyin Beg gdong lcam srings gi chos skor yongs su tshan ba) / A Collection of Highly Esoteric Teachings for the Propitiation of the Yaksa Begtse and His Retinue* (Losar, Himachal Pradesh, 1978), pp. 122–28.
24. Heller 1997.



THE GONKHANG, TEMPLE OF THE GUARDIAN DEITIES

LOZANG JAMSPAL

Most of the ancient swords and armor that once existed in Tibet no longer survive. The majority of what remains has been preserved in gonkhang (*mgon khang*), the temples or chapels specifically devoted to protector or guardian deities. These temples are still found throughout Tibet and in neighboring countries with culturally Tibetan regions, such as Ladakh, Sikkim, Nepal, and Bhutan. Armor and weapons are used in gonkhang to decorate the temple and to show the fearsome dignity of the wrathful deity to whom the gonkhang is dedicated.

In order to remove obstacles and to aid in the accomplishment of personal goals, ordinary people often go to a gonkhang to supplicate a protector deity. It is a popular practice for both Buddhists and Hindus to seek assistance in this way from a protector deity, who is often one of the lower-ranking deities in a greater temple complex. For instance, it is still common for many Hindu men and women to visit the gonkhang devoted to Yamantaka in Spituk (*dpe thub*) Monastery, which is located near the airport in Leh, the capital of Ladakh.

Almost every Tibetan monastery has a gonkhang for a protector deity, who is seen as the overall guardian of the monastery, capable of helping with the accomplishment of goals, and whose presence also protects property from being stolen. People commonly believe that if they act badly or steal from others, especially things belonging to the monastery, the protector deity will punish them. Therefore, in the monastery people often pay more attention to the protector deity in the gonkhang than to the Three Jewels. Buddhists traditionally take refuge in the Three Jewels—Buddha (the Enlightened One), Dharma (his teaching), and Samgha (the spiritual community). In principle, this precludes seeking refuge in any deity, though the Buddha did teach that the practitioner could take refuge in oneself, as described in the following verse:

Fig. 39. Likir Monastery seen from a hill behind the monastery, July 2003 (photo: Donald J. LaRocca)

One is the protector of oneself,
Who other would become the protector?
When oneself is well disciplined,
Then one can achieve a rare protectorship.[1]

Although some thoughtful Buddhists take refuge only in the Three Jewels, the needs of average people have dictated that protector spirits be accorded a place even in the great Buddhist monasteries, where they receive offerings from devoted monks and lay people alike. This reflects the Buddhist practice of integrating local customs and adopting local spirits or deities. Padmasambhava, who introduced Buddhism to Tibet in the eighth century A.D., transformed many aboriginal shamanistic spirits into Buddhist protector deities.

In Tibetan monasteries the gonkhang is considered the place where the protector spirits live. As an illustration of a gonkhang I would like to describe that of Likir Monastery in Ladakh, where I was a novice monk from 1944 to 1949, and where I witnessed many rituals regarding the protector deities during those years. Likir is located in a lovely valley two and half miles long and half a mile wide, surrounded by high rocky mountains topped by snow or glaciers. The monastery is situated on a rocky hill, looming up in the middle of the valley (fig. 39). It is a beautiful place, especially in July and August, but it is very cold in the winter.

The outside of the gonkhang of Likir Monastery is painted the traditional reddish brown with ocher, contrasting with the white paint used on the other buildings, as is typical of Tibetan construction. The inside of the Likir gonkhang is small, approximately 20 by 15 feet (fig. 40), and is arrayed with stucco images of several deities, such as Vajrabhairava, Six-Handed Mahakala together with his retinue, Yama Dharmaraja, Shrikalidevi, and Vaisravana. The main protector of the monastery is *chos skyong bse khrab pa* (literally, dharma protector with rhinoceros-hide armor), who is represented by a small image that was brought back from central Tibet long ago. This statue, made of sandalwood painted gold, is considered very powerful. During most of

Fig. 40. The interior of the gonkhang at Likir, July 2003 (photo: Donald J. LaRocca)

the year the statues of the protectors are concealed by colorful silk curtains, which are opened only during the monastery's annual festival. Many white silk scarves, or *khatas* (*kha btags*), hang from the pillars and railings of the gonkhang, offerings left by villagers and visitors to the monastery. Traditionally women are prohibited from entering a gonkhang, although nowadays this custom has been relaxed, especially in the case of foreign visitors.

The main pillar of the gonkhang is surrounded with ancient swords and guns, as is the custom in many gonkhang. I also recall swords and guns arranged like this in the gonkhang of the *dpe thub khang tshan* (Spituk monastic house) in Tashilhunpo (*bkra shis lhun po*) Monastery in Shigatse, Tibet, where I lived as a monk from 1950 to 1957. Among these were the sword and gun that belonged to Nono Bsodnams of Basgo village, who is regarded as a hero and a great patriot by the people of Ladakh.[3] The gonkhang and the images of protector deities in it are purposely made to have a fearsome appearance to scare wicked people. This way many crimes are prevented simply by a person's fear of the protectors in the gonkhang.

Every morning in the gonkhang the temple manager (*dkon gnyer*) arranges several bowls of freshwater offerings (*yon chab*) in addition to butter lamps (*mar me*), offering cakes (*gtor ma*), and incense (*spos*). Following this he consecrates the offerings with incense smoke while repeating the mantra OM AH HUNG three times. Next the temple manager chants for several hours, accompanied by the sounds of a ritual drum, bell, and cymbals. Also, for special purposes or on special days, offerings are made with food, drinks, lamps, flowers, burning incense, drums, cymbals, and trumpets, with chanting of ritual prayers by a group of monks or by a single monk.

Supplications: *bskang gso* and *'phrin bcol*

There are two types of supplication: *bskang gso* (amending and restoring) and *'phrin bcol* (supplication for help). *bskang gso* is a very colorful ceremonial ritual to propitiate the guardian deities, which involves elaborate offerings of *gtor ma*. The monks conduct the ritual chants and play musical instruments, including drums, cymbals, bells, trumpets, and *rgya gling* (a type of trumpet), almost like a concert. This *bskang gso* ritual is performed once a year in the gonkhang of Likir Monastery and involves many monks. Special *gtor ma*, which will last one year and are called *lo gtor*, are made during this time. Then the caretaker monk of

the gonkhang, using the *lo gtor* offerings, performs a reduced version of the *bskang gso* daily at three or four in the morning.

People will sometimes ask a monk to perform the *'phrin bcol* supplication to the deity in the gonkhang before they conduct important business or for similar situations. Shorter and with less elaborate offerings than *bskang gso*, this ritual is performed for the general achievement of success or removing of obstacles. People individually or as a group can request that this ritual be done by the caretaker of the gonkhang, who may either perform the ritual alone or invite other monks to participate.

The *gtor mar ma*

The *gtor mar ma* (offering cakes decorated with butter) have different shapes and colors for each deity. The butter ornaments can be very elaborate depending on the skill of the *gtor ma* makers and the time involved. In the *bskang gso* ritual Vajrabhairava's *gtor ma* is placed in the center of the altar; next to it on the right is the *gtor ma* of Mahakala, then those of other deities, and last that of *bse khrab pa*. To the left of Vajrabhairava's *gtor ma* is that of *dam can chos rgyal* (literally, pledge holder dharma king), followed by others, with the last being the *gtor ma* of Neser Jowo chenpo (*ne ser jo bo chen po*). The preparation and placement of the *gtor ma* for these rituals must be learned by observation, which is called *mthong ba brgyud pa'i nyams len* (traditional practice by watching). The substances used in the preparation of the *gtor ma* for the *bskang gso* ritual are *rtsam pa* (flour of parched barley), *chang* (fermented liquor usually made of barley), butter, *'bri mog* (a kind of herb root that grows in the mountains, which is boiled in ghee and used to dye the *gtor ma*), and *bdud rtsi ril bu* (ambrosia pills, which are made of substances that represent the "five types of flesh" [*sha lnga*] transformed into ambrosia by the meditation mantra).[3]

From this point on I would like to focus on two deities, *chos skyong bse khrab pa* and Mahakala (see figs. 41, 42). The first, *bse khrab pa*, is the principal protector of Likir Monastery. Although some traditions hold that he came from India, there is no evidence to support this belief. In addition he is always portrayed in the dress of an ancient Tibetan warlord rather than in Indian costume. Mahakala was popular in India and Nepal for as many as a thousand years before being introduced into Tibet. He is usually depicted in Indian dress. Generally people seem to consider a deity who originated in India as higher in rank than indigenous Tibetan deities. In Likir Monastery during the *bskang gso* ceremony, people commonly assume that they are mainly propitiating *bse khrab pa*, but since Mahakala is ranked as the highest protector deity, the part of the ritual devoted to him comes first, followed by that for the other deities, with the ritual for *bse khrab pa* almost last except for one local deity whose ritual the monks do at the end.

Fig. 41. Dorje Setrap (*rdo rje bse khrab*) *tangka*. Tibetan, 19th century. Ground mineral pigment on cotton, 26¾ x 16¾ in. (68 x 42.6 cm). Collection of Shelley and Donald Rubin (Pt999.13.4) (photo: Himalayan Art Resources [HAR 845], www.himalayanart.org).

Chos skyong bse khrab pa, the Dharma Protector with Armor of Rhinoceros Hide

The following passages give some glimpse of the meaning of the ritual chants used in propitiation of *chos skyong bse khrab pa*:

Everything turns into emptiness; from the state of emptiness in front of me there arises a red lucid ocean of blood. Upon this ocean, from the seed-syllable E in the center of a blazing blue-black dharmodaya *(source of all phenomena), arises a sun disk upon a lotus, and upon it the body of the obstacle enemy (*dgra bgegs*). Upon this there is the seed-syllable HRI, which transforms into a great club marked by letters HRI. From it rays of light spread, subjugating all harmful enemies; the rays of light then return. The rays of light transform into the great royal spirit* bse khrab pa. *The complexion of* bse khrab pa *is red; he has three round red eyes. He has fearsome wrinkles gathered between the eyebrows. His teeth and fangs are white like a snow mountain, pressing upon the lower lip. From the club in his right hand an emanation army spreads. His threatening left hand, upon the chest, holds a lasso (*zhags*) to tie obstacle enemies. Under his left arm he carries a blazing red spear (*mdung dmar*) with a billowing flag. Upon his head is a helmet made of hide (*bse rmog*), adorned with a victory banner and martial flags made of silk. He wears a red silk garment (*tsi ber*) and upon it armor made of hide (*bse khrab*). At the waist he wears a beautiful quiver of leopard skin (*stag gdong gzig shubs*) and sword (*ral gri*). He is mounted on an excellent bronze-colored horse with a saddle and bridle trimmed with silk chevron pendants; an excellent horse adorned with armor of hide (*bse khrab*) to its white fetlocks and jewels at the top. For amusement he is accompanied by a tame red rooster.*[4]

Then the propitiators chant with melody in meditation, saying:

Rays of light spread from the seed syllable at the front of my heart, [inviting] from the natural place the chos skyong *deity together with his retinue. [Say] VAJRASAMAJA; thus one should visualize the arrival.*

From the divine sublime palace, and
The red boulder resembling a wrathful monster,
The great wild king bse khrab pa,
Together with the retinue, please come here.[5]

Say JAH HUNG BAM HO and think of the visualized image deity and the wisdom deity as non-dual.

*In the state of emptiness, who is not different from the Lord Amitayus and unmoved, but manifested as furious body to tame the wicked ones; I bow down to this Red Spirit (*bse khrab pa*).*[6]

Making Offerings of Weapons to the Protector

During *lo gsar* (new year celebration) propitiators offer the deity *bse khrab pa* a horse, a yak, and a dog, which are named as *mgon rta, mgon g.yag, mgon khyi*, respectively. They also make offerings of weapons and various instruments. In this way some swords and guns were deposited in the temple of the protector deity.

HUNG
With this magnificent club made of sandalwood
Brought from the Malaya forest of India,
To tame the three doors[7] *of the demons*
That spread as an army of millions,
*I offer this to the hand of the great Dharma Protector (*chos skyong*).*

Please accept this, then
Please crush and destroy into dust
The obstacles and hating enemies
Of the jewel of teaching [of the Buddha], and
Of me, the propitiator, together with their army,
Please do this enlightened action.

This lasso, made of material mixed with human hair,
Praised for binding instantly the army of wicked enemies,
I offer this to the hand of the great Dharma Protector.
Please accept this, then
Tie and bind them,
Please act to destroy them.

This sword, made of iron, endowed with sharpness and well tempered,
With flapping streamers of glimmering red silk beautifully dangling,
Afflicting the heart of the evil allied ones,
I offer this to the hand of the great Dharma Protector.
Please accept this, then
Eliminate them [the evils] and destroy [those who do harm].

By merely touching, it can destroy even Mount Sumeru,
This bow and arrow, the integration of skillful means and wisdom,
The weapon piercing all who do harm
I offer this to the hands of the great Dharma Protector.
Please accept this, then
Grind them to dust, and destroy [the evildoers].

This blazing sword of wisdom, tearing the eggshell of ignorance,
Beheading the evil which hates the Buddha's teaching and living beings,
I offer this to the hands of the great Dharma Protector.
Please crush into dust and destroy
The obstacles and hating enemies
Of me, the propitiator, together with their armies.
Please do this action.[8]

Religious Dances (*'chams*) of *bse khrab pa*

Likir Monastery has a *mdos mo che* festival once a year in the wintertime on the twenty-seventh, twenty-eighth, and twenty-ninth days of the twelfth lunar month of the Tibetan calendar, during which various *'chams* (religious dances) are performed.[9] On the twenty-eighth day the *'chams* of *bse khrab pa* is performed. The dancer costumed as *bse khrab pa* is accompanied by his retinue of six emanations. Carrying a sword and a lasso in his hands and brandishing the sword, *bse khrab pa* dances. The audience pays respect and honor to him and asks him to bring favors through his spiritual dancing. Some parts of *bse khrab pa's* retinue are played by novice monks. In this way, during the 1940s, I participated in the *bse khrab pa 'chams* and was able to experience the dance as a member of the deity's retinue.

Divination by Means of *bse khrab pa*

Virtually all the monks and lay people of the Likir valley have sought the advice of *bse khrab pa*, the chief deity of the gonkhang. Especially when the monks cannot reach a decision on an important issue, they ask the advice of the protector *bse khrab pa*. I witnessed several cases of this. In one instance, in 1948 during the India-Pakistan War, the monks of Likir Monastery heard that Pakistani insurgents would attack Ladakh. Six months before the soldiers arrived at Likir, the monks had to decide where they should hide the monastery's valuable ritual objects in order to protect them from possible theft by the insurgents. They asked *bse khrab pa* whether they should hide them inside or outside the monastery. To do this the monks wrote the words "inside" and "outside" on strips of paper, folded them, and put them inside balls of dough of equal size, which were placed in a Chinese porcelain vessel with a long handle at the bottom. Holding this long handle, the abbot of the monastery made a circling motion until one of the balls flew out of the vessel. The monks would accept the word inside that ball as the deity's decision. On this occasion the *brtag ril* (rounding divination) gave the answer as "inside." The monks then hid the very precious religious objects inside the monastery in a chamber below the gonkhang. Although Pakistani insurgents remained at the monastery for about two months, they never found the chamber, and so the religious objects that had been hidden according to the rounding divination of the monastery's protector, *chos skyong bse khrab pa*, were preserved intact.

The Six-Armed Mahakala (*mgon po phyag drug pa*)

From the earliest period when protector deities were worshipped in the monasteries of Tibet, the deity Mahakala (also called *nag po chen po* or *mgon po* in Tibetan) was the principal protector deity. From his

Fig. 42. Mahakala *tangka*, Tibetan, early 18th century. Distemper on cloth, 83⅞ x 57¾ in. (221.8 x 146.7 cm). The Metropolitan Museum of Art, New York. Purchase, Florance Waterbury Bequest, 1969 (69.72)

Tibetan name *mgon po* (literally, guardian), the term gonkhang (*mgon khang*) was derived, literally meaning "house of Mahakala" or "house of the guardian." This became the term for all temples of protector deities. Mahakala is still respected as the oldest deity in Tibet and is considered an emanation of Avalokiteshara, the deity of compassion. The formula for the meditative evocation of Mahakala is as follows:

OM SVABHAVA SHUDDHA SARVADARMA SVABHA SHUDDHO' HAM

From the state of emptiness rises the syllable HUNG, and inside that a protecting mandala, and from inside this rises a dreadful and great cemetery, from which there rises the syllable PAM, and from that rises the

universal lotus. Upon it, from the syllable RAM arises a cushion blazing like the sun; upon it is the white syllable GAM, which melts into light, and from it rises the white elephant-headed, three-eyed Lord Ganesha. With his right hand he is eating a radish with its leaves, which symbolizes the essence of the earth; in his left hand is a mongoose vomiting jewels. Ganesha is lying down, adorned with silk and jewels; from his mouth, pores, ears, and other bodily openings jewels rain forth. Upon him, from the syllable HUNG, there rises the hooked knife with a vajra handle *(*rdo rje gri gug*) marked by a blue-black HUNG. Then rays of lights spread out from it eradicating all the wicked enemy obstacles. Worshipped by all the noble ones, it benefits sentient beings [Buddhas and Bodhisattvas]. Then the rays of light are absorbed within the* vajra-handled hooked *knife. Through the transmutation of this, the Six-Armed Lord of Intuition Mahakala is quick to respond and fulfill all the wishes of living beings. His complexion is very black, like the cloud at the end of the eon. With one face and six arms, gazing wrathfully with his three round red eyes, his mouth is open, showing fanglike teeth and his rolling tongue, inwardly agitated showing his furious power and his face with a severe smile. The hairs of his dark brown moustache and eyebrows, and the hair on his head are standing up. His forehead is anointed with a drop of* sindhura. *On his crown sits Akshobhya Buddha, holding a hooked knife with a* vajra *handle; his left hand holds a skull cup, which is full of the blood and the flesh of the obstacle enemy. Below the skull cup and sickle, his right hand rests upon the skull. The middle right hand holds a garland of dried skulls; the last right hand vigorously plays the* damaru *(drum). The second left hand holds a trident; the last left hand holds a black noose. With his two feet that are equal to the power of the three worlds he crushes and suppresses the King of the Demons. His lower garment is a tiger skin which is tied with a belt made of green silk. He is adorned with snakes and a blue snake is tied in his hair. He wears a red ring, an arm ornament of many colors, a white necklace on his breast, yellow bracelets, a green necklace on his throat, white anklets, and a white girdle. All his hands and feet have tinkling garlands. He is stocky with a full belly. His limbs are very strong. He has infinite radiance which is difficult to endure. His head ornament is five dried skulls. He is adorned with a necklace of fifty wet skulls dripping blood, six bone ornaments, and a jeweled crown. He makes dreadful sounds, like thundering HA HA and HUNG PHAT PHAT. Through these sounds he eradicates all the wicked obstacle-making enemies. He sits, leaning on the sandalwood tree, in the middle of the blazing fire of intuition, which is like the fire at the end of the eon.*[10]

This visualized image is called "pledged one" (*dam tshig pa*). When the propitiator invites the wisdom being of Mahakala, the ritual chanting is as follows:

Please get up, please get up from the sphere of reality. Although you [Mahakala] do not move from the state of the pure sphere of reality, you have shown your wrathful body in order to subdue the wicked ones. I [the practitioner] invite the great deity Mahakala. To the blessed Black One, please come, the god who conquers the enemies of yogis, please come, to the Vidyadhara guardians, please come, to the Black Field Protector (Sanskrit kshetrapala, *Tibetan* zhing skyong nag po*), please come.*[11]

The practitioner, saying VAJRASAMAJA, visualizes the wisdom spirit absorbed into the pledged image, drawing, or painting, and says:

HUNG
Having made pledges in the presence of Vajradhara, please sit in this blessed place in order to protect the Buddha's teachings. JA HUNG BAM HO dissolve without being two [as pledged and wisdom beings].[12]

A short sample of the supplication of Mahakala:

HUNG
I entertain Mahakala and your retinue,
The Quick Responder, and your retinue. I fulfill the lacking ones and I also renovate that which is broken. I purge all guilt and all mental enmity.

I entertain lord Mahakala and [your] retinue
With the yak and sheep that have horns of meteors, tongues of lightning, thick hairs bursting like black clouds.

I entertain lord Makahkala and [your] retinue with an arrow made of flexible bamboo, which is adorned with the feathers of vultures, a point made of meteoric iron, and which has a moving crown of black silk.

I entertain lord Mahakala and [your] retinue with the red heart of the enemy, pulled out by hand, who is very bad to the teachings of the Buddha, filled with the essence of precious medicinal grain offerings.

I entertain lord Mahakala and [your] retinue with the certain belief in the lama, the embodiment of the Three Jewels and the Lord Quick Responder are no different.

I entertain Mahakala together with your retinue with this infinite red offering cake built up like a mountain, drink and rakta *(red drink) filled up like an ocean, actually prepared and emanated by mind.*

I entertain you by fulfilling your wish. You should accomplish those tasks that I ask.

When I approach you, do not be distant; when I call you, do not turn a deaf ear; when I propitiate you, do not be indifferent; when I wave at you, do not close your eyes; when I send you somewhere, do not be slow; when I approach you as Lord, do not be overpowering; when I approach you as friend, do not be bad natured; when I approach you as acquaintance, do not be shameless; when I approach you like a mother, do not be hard-hearted; when I approach you like a sister, do not have bad feelings; when I approach you like a servant, do not be distant in your heart.

I give you a reward for your previous actions on my behalf. I give you food for your present actions; and for your future actions I offer you drink. May I fulfill a spiritual wish, please accomplish the activities that I ask.[13]

A popular story recounted by the Tibetan monk Dharmasvami (*chos rje chag lotsawa*, 1197–1264) tells of how he and his elderly teacher were protected by Mahakala from marauding Muslim troops who were pillaging the ruins of Nalanda Monastery in Bihar, northern India, about 1234.[14] Mahakala Natha was for many centuries the protector of the great Nalanda Monastery, where there was a stone statue of four-handed Mahakala larger than human size. During many years of devotion people had applied oils to it, turning it a blue-gray color. The stomach area was worn smooth because people touched their foreheads to this spot to get blessings. The stone image looked like dough made of green peas. Its legend tells that it was self-created, having manifested to Nagarjuna in the Shitavana forest, and was taken to Nalanda. This protector was very popular. When Nalanda was being sacked by Muslim forces, an officer of the invaders personally desecrated the temple altar and ordered his army to destroy the temple and to take all the stone to build a fort in Odantapuri, which was a day's journey on foot from Nalanda. That very evening the officer died of appendicitis, after which the frightened troops did not dare even to go near the temple. In the ruins of the great monastery a few monks remained, along with a very learned monk who was over ninety years old, the great Guru Rahula Shribhadra. Word reached the monks that troops were coming to kill whoever remained in the monastery. The Guru Rahula told the monks to run away, saying, "I am over ninety years old and cannot run." Chaglotsapa Dharmasvami alone remained. His guru scolded him saying, "You crazy Tibetan! All the people ran away; what are you doing here? The Muslims will kill you." To which he replied, "Even if they will kill me, I cannot run away leaving my guru behind." The guru was amazed at his devotion and asked him, "Can you lift me up on your back?" Chaglotsapa lifted the guru on his back and walked around a pillar. The guru told him, "Yes, you can carry me. We will not go far away. I have a plan." Chaglotsapa carried the guru on his back, along with some sugarcane, rice, and important books. They went to the Mahakala temple in accordance with the guru's instructions. While the guru and his disciple were hiding in the gonkhang, about three hundred armed soldiers came and searched Nalanda but found no one. Thus, because of their devotion to Mahakala Natha, the Guru Rahula Shribhadra and Chaglotsapa escaped violent deaths.

This is just one illustration of the belief, still strongly held by many, in the protective powers of the gonkhang and its guardian deities, which are perpetuated through rituals, offerings, and other devotional activities such as those described above.

1. See chapter 12, gatha 4, of the Tibetan text, *chos kyi tshigs su bcad pa* (translated by Gedun Chomphel [*dge 'dun chos 'phel*] [Gantok, 1946]), which corresponds to verse (gatha) 160 of Dhammapada (*Dhammapada*, edited by Bhiksu Dharmaraksita [Delhi, 1977]). The English translations of the Tibetan quoted here are my own.
2. Nono Bsodnams was forced to join the army of General Zorawar Singh to invade Tibet in 1841. The general was killed and most of his army of ten thousand died owing to the severe cold. In the course of the war Nono Bsodnams aided the Tibetans against Zorawar Singh, for which his sword and gun were not confiscated afterward by the Tibetan government. Alexander Cunningham, who visited Ladakh in 1847 and wrote of its history (*Ladak: Physical, Statistical, and Historical, with Notices of Surrounding Countries* [London, 1854]), was apparently unaware of this story. It is also said that Nono Bsodnams became a confidant of the Seventh Panchen Lama, bstan pa'i nyi ma (1781–1853), because of his service to the Tibetan army in the war.
3. The five types of flesh (*sha lnga*) are human flesh (*mi sha*), cow flesh (*ba glang sha*), dog flesh (*khyi sha*), elephant flesh (*glang sha*), and horse flesh (*rta sha*).
4. *chos skyong chen po bse khrab can sgrub thabs rgyas par bshad pa 'phrin las dngos grub kyi bang mdzod*, by brag g.yab blo bzang bstan pa (1683–1739), lithographed edition, India, 1965, fol. 7.
5. Ibid., fol. 9b.
6. Ibid., fol. 12a.
7. The body, speech, and the mind.
8. *chos skyong chen po bse khrab can sgrub thabs rgyas par bshad pa 'phrin las dngos grub kyi bang mdzod*, fols. 21b, 22b.
9. The *mdos mo che* is a ceremony wherein an effigy of demons is burned together with thread cross decorations in order to remove obstacles.
10. *dpal ye shes kyi mgon po phyag drug pa'i sgrub thabs gtor ma'i chog ga dang bcas pa 'phrin las gter mdzod*, by Jo nang Taranatha (1575–1635), photo offset of the manuscript, India, late 20th century, fols. 3b–5b.
11. Ibid., fols. 10a–10b.
12. Ibid., fol. 13a.
13. Ibid., fols. 24b, 25b.
14. The Tibetan text *chag lo tsa ba'i rnam thar*, written by ju ba chos dar, was edited and translated into English in Roerich 1959, pp. 90ff.

ཐུང་གུའི་ཁྲབ་དང་རྒྱོག

Lamellar Armor and Helmets

The term "lamellar armor" refers to a type of armor made up of horizontal rows of small overlapping plates joined by leather lacing. The individual plates are referred to as lamella (singular) and lamellae (plural), literally meaning thin plates or layers, from which the adjectival form lamellar is derived. In Tibetan the lamellae are referred to as *byang bu*, a general term for a small label, card, or flat object of rectangular shape. It is used to modify the Tibetan word for armor, *khrab*, giving the term *byang bu'i khrab*, for which the best English equivalent is lamellar armor. The basic features that distinguish lamellar armor from other forms also made up of small plates, such as scale armor or brigandines, are that the lamellae are supported by being laced only to one another rather than to a lining or support material of any kind, and that the rows of lamellae overlap upward. Lamellae were made of rawhide, bronze, and iron. Lamellar armor, in various forms, had an extremely long history over a widespread area, from East Asia to Europe, perhaps originating in the ancient Near East as early as the eighth century B.C. Most of the evidence about its development is provided by archaeological finds, which show that iron lamellae were known in China as early as the third century B.C., in Central Asia probably around the same time, and in western Europe by the fifth or sixth century A.D.[1] Lamellar armor continued to be worn, particularly in parts of Central Asia, through the Middle Ages. The lamellar armor of the Mongols, for instance, was commented on by Western travelers, such as the Franciscan friar Giovanni di Plano Carpini (ca. 1180–1252), who recorded a detailed description in 1247 of the armor he had seen on his travels among the Mongols the previous year.[2]

Given this long period of use over such a widespread geographical area, it is remarkable to note that, other than the late variants used sparingly in Siberia, the armors found in Tibet constitute the only examples of lamellar armor made of iron that do not come from an archaeological context. Equally remarkable is the fact that, having survived above ground virtually nowhere else, lamellar armor from Tibet exists, or existed, in such large numbers, dozens if not hundreds of examples still being extant at the beginning of the twentieth century.

Most Tibetan lamellar armors share several distinct features, which can be outlined here. The body of the armor has the form of a sleeveless robe and is often made from twelve to fourteen rows of lamellae, although the number varies. At present it is not known if there was a standard number of rows, what the true average might be, or if the number is indicative of a certain period, place, or style.[3] The coat has a distinct waist, usually five or six rows down from the top, the lamellae of that row being bent inward to form a gentle curve. There is sometimes a collar consisting of a single row of shorter lamellae, and this can be lined with leather. Most armors are sleeveless, but some have shoulder defenses formed of several rows of lamellae (described in detail in the entries for cat. nos. 1–3), and one extremely rare example has full sleeves (cat. no. 1). The coat opens down the length of its front; it is closed by braided leather straps and small iron buckles, and a waist belt of the same materials, which seem to have survived on very few examples (see cat. no. 6). The back of the skirt of the armor is split vertically from the bottom row up to the waist by two seams, one at either side.

The individual lamellae are made of iron, which on some armors retain a natural silvery luster while on others they are a russet brown. The lamellae are usually rounded at the top like a fingertip and have slightly rounded corners at the base. Their sizes can vary considerably according to their placement on the armor. As with the number of rows, the size and finish of the lamellae may eventually prove to be indicative of a particular period or place. The larger lamellae are usually located on the torso area of the armor or the lower skirts and can be approximately 7–8 centimeters long by 1.5–2 centimeters wide. Smaller lamellae, near the shoulder openings and on helmets, can be approximately 3–5 centimeters long by 1.5–2.5 centimeters wide. Each lamella is pierced by a series of lacing holes, varying between six and thirteen (the average appearing to be nine), depending on the size of the lamella, its type, and sometimes on its placement. The precise and very effective lacing pattern by which the lamellae are joined together was aptly described and diagrammed by Bengt Thordeman and can be seen well in the interior and exterior details of the armor in catalogue number 6 (see endpapers):

> *The holes at one edge of a lamella cover those on the adjacent edge of the next lamella, and so on. Through adjacent pairs of holes thongs are drawn in a zigzag line in such a way that they appear vertical on the outside of the armour, but diagonal on the inside. Occasionally, even on the same armour, the lacing of the thongs is doubled so that the thongs cross each other on the inside, whereas on the outside they coincide so that their appearance remains unchanged. . . . Thongs are also drawn through the holes at the bottom, which hold the lamellae fast to each other. The thongs are pulled tight so as to form firm but flexible units. The rows, again, are loosely joined to each other, the lower one to the one immediately above; this accomplished by means of a thong which, from a single hole below the*

centre on the lamellae of the upper row, is pulled through the two holes placed in pairs in the upper end of the lamellae of the lower row, which overlaps the lower edge of the row above. The rows thus always overlap from below upwards.[4]

Some armors are trimmed with borders made of a stiff band of silk brocade or other fabric, which is attached around the bottom edge of the coat at the base of the skirts and, if they are present, at the bottom of the shoulder defenses (cat. nos. 2, 3). These borders may indicate armors of higher quality, or that the armors were refitted at some point for a particular occasion. Rather than textile borders, however, the majority of extant armors have a border at the base of the skirts consisting of two layers of leather. The inner layer is made of solid panels of leather, while the outer layer is split in a series of rectangular tabs or lappets (cat. nos. 1, 4–6). Many of these have Tibetan inscriptions in ink or black pigment, usually on the inner layer hidden beneath the lappets, written in a form of *dbu med* (a Tibetan cursive script) and including sequences of numbers (cat. nos. 4–6). These may be arsenal or regimental inventory numbers, a suggestion made by H. G. Beasley in 1938, but as of yet the precise meaning of these inscriptions remains unclear.[5] In a few other instances Tibetan characters or numbers are found on other parts of the armors (cat. nos. 3, 4). Some also have as yet unidentified wax seals stamped on their interiors, which may indicate ownership by a particular monastery, fortress, or noble household. These seals have been found not only on armor for man (cat. nos. 1, 3, 9, 44–46), but also on horse armor (cat. no. 32) and archery equipment (cat. no. 96).

Virtually all Tibetan lamellar armors have what would be called "stop ribs" in European armor terminology, the function of which is to stop the point of a weapon from sliding up the lamellae and into an exposed area. These consist of short rolls of leather, about the thickness of a pencil, which are bound with a narrow leather lace in a crisscross pattern. They are attached horizontally at the edge of the top rows of lamellae at either side of the chest, just below the throat, and at the underside of the arms.

Equally distinctive helmets were made to match the lamellar armors and, like the armors, are associated only with Tibet or the Tibetan cultural region. Also like the armors, this type of helmet is constructed of iron plates joined by leather laces. The bowl of the helmet is usually made up of eight arched plates (cat. nos. 1, 2, 4, 5), but there are also examples with sixteen plates (cat. no. 3). The plates are wedge shaped and overlap in an over-under sequence, with four narrow outer plates that have cusped edges, and four wider inner plates that have smooth edges. The side edges of the outer plates usually have two shallow cusps with rounded points, although on some examples the points are much more attenuated. The outer plates also usually have a low medial ridge, while the inner plates are smooth. On some examples, however, the medial ridge of the outer plate is high and pronounced, and the inner plates also have a medial ridge (cat. no. 3). The outer plates typically have ten lacing holes and the inner plates fourteen, but this can vary. At the bottom edge of most plates there are usually a series of small notches, which probably served as assembly marks. The tops of the inner and outer plates meet beneath the base of a plume finial, which forms the apex of the helmet, and resembles the stem and base of a footed chalice. The plume tube generally has a central lozenge-shaped knop and a flaring funnel-like top. The base is pierced with eight lacing holes arranged in four pairs of two, which are laced to corresponding holes at the tops of the four inner plates. The tops of the outer plates do not have lacing holes, but are slightly stepped to fit snugly under the base of the finial. On complete examples there is a single row of lamellae encircling the base of the helmet bowl, a pair of cheek defenses made of five to seven rows of lamellae, and a flaring nape defense of three rows (cat. nos. 1, 2, 4).

According to the Tibetan author Tashi Namgyal (*bkra shis rnam rgyal*), writing in 1524, the history of lamellar armor in Tibet was divided into three distinct periods (see the appendix "Excerpts from *A Treatise on Worldly Traditions*"). The oldest armor dated from the time of the "Righteous Kings, Uncle and Nephew," which would place it sometime during the Yarlung dynasty, early seventh to mid-ninth century.[6] Armor from the middle period began with the reign of O-sung (*'od srungs*, ca. 842–870), at the end of the dynasty, and continued until the beginning of the reign of the first Phagmodru king, Taisitu Chenpo (*ta'i si tu chen po*), or 1358. The period of new-style armor went from that point up to the time the text was written. The first period, and perhaps the starting point of the second as well, may be seen as conventional divisions in Tibetan historical writing, in which principal epochs served as convenient benchmarks for the introduction of various customs, materials, and technologies. However, the third period, which includes the writer's own lifetime, implies that lamellar armor specifically identified as Tibetan was actively in use at that point and was seen as part of a tradition with a long history in Tibet, even while its past may have been conventionalized to follow the norms of Tibetan historical writing. In a similar fashion, the Fifth Dalai Lama, writing in 1643, said that armor was first brought to Tibet from a district in Kham (*smar khams*) during the reign of the semilegendary ancient king Trigum Tsenpo (*gri gum btsan po*).[7]

Tashi Namgyal also listed a series of characteristics by which he said an expert (*mkhas pa*) should be able to differentiate between the armors of each period, which can be summarized as follows.[8] The lamellae of the armors of the old period are said to be as smooth as polished ice on the outside and like a mirror of white silver on the inside and the iron is said to be mixed with silver. The heads of the lamellae line up like rows of crystal garlands and are smooth and even to the touch. They have a fingernail shape (*sen rgyab*) that is made with a small hammer. The edges of the lamel-

lae are smooth and even and the bottoms are evenly arranged. The lacing holes (*mig*) have smooth inner edges. The color of the iron is glossy, and because the material is equally supple and hard it is proof against cut and thrust weapons. The lamellae of the armor of the middle period are said to be evenly arranged along the top, but the sides and corners are a little sharp. They have a fingernail shape that is made by a chisel, which is a little coarse. The lacing holes are a little narrow. The file finishing is not very well done, but nevertheless the lamellae look pleasing to the eye. The lamellae of the armors of the new period are said to have heads that are rough and not attractive. The fingernail shape is weakly drawn with a chisel. The lacing holes are narrow and rough. The corners or edges are extremely sharp. The color of the iron is blue-black like lead. The finishing is not well done, so that although the lamellae are thin they are nevertheless heavy.

These characteristics appear to be a mix of poetic metaphor and actual observation and should not necessarily be taken literally or as representing a strict chronology of features. They do, however, indicate what their author perceived as a progressive deterioration in both the materials and quality of craftsmanship over time. In applying these standards to extant Tibetan lamellar armor the tendency would be to attribute examples with smoother, more silvery, and finer lamellae to an earlier period and those with darker, simpler, and larger lamellae to a later period. However, the finer armors may be earlier, or they may also represent higher-quality armor of a later period. The cruder armors may be later, or could also be less expensive armors for the rank and file, which tended to be more cheaply made than the armors of high-ranking individuals in many cultures and time periods. This uncertainty is reflected in the results of carbon-14 tests on two Tibetan lamellar armors, one with small, smooth, and finely made lamellae (private collection) and another with larger lamellae that are relatively simple and rough by comparison (cat. no. 6).[9] The tests put the two armors in largely overlapping date ranges: 1416–1649 for the armor with the small lamellae, and 1480–1660 for the armor with the larger, simpler lamellae. Therefore, while this could mean that the finer armor dates to the early fifteenth century and the simpler one to the mid-seventeenth century, it could also mean that the two may simply represent different levels of quality, which could have been made at any point within their respective time frames.

When assessing a lamellar armor, Tashi Namgyal's criteria, judgments based on assessments of quality and style, and any available scientific evidence should all be taken into consideration. Assessments involving quality and style include several features that can be taken into account, some of which follow the general lines laid out by Tashi Namgyal. First, the overall quality of the individual lamellae depends on several characteristics, such as whether their edges are smooth or rough, their contours even and in proportion, whether the plates are completely flat or slightly convex, and what the color and surface finish of the metal itself is like. The lamellae should be looked at for variation in size and whether the variation appears to follow a logical order from row to row, based on the position of the lamellae in the armor, or seems to be random. Also, the lamellae should be checked to see if their quality varies distinctly within the same armor or matches fairly well. Another feature is the pattern of the direction in which lamellae overlap from one row to the next, and whether there is a logic to the overlap pattern, which may seem simple, complex, or haphazard. For instance, the lamellae of all the rows may overlap from the center outward and meet in the center of the back, or overlap left to right, or right to left, all the way around, or have a combination of these patterns. A lamellar armor is also very much dependent on the condition of its leather lacing for its appearance. An armor of modest quality with its lacing intact will present a much better appearance than one of higher quality but with broken, worn, or improperly restored lacing.

One further issue that should be addressed is the tendency in recent years to attribute all lamellar armor from Tibet to the Mongols rather than the Tibetans. The reasons for doing so seem to be based on a premise that can be summarized as follows: Since it is known the Mongols wore lamellar armor of this general type and they were very active in Tibet, all lamellar armor from Tibet must be Mongolian. The acceptance of this assertion is perhaps largely due to the general aura surrounding the military prowess of the Mongols and the desire among collectors, dealers, curators, and historians to connect extant objects with them. When looked at from the Tibetan perspective, however, the evidence for the lamellar armor from Tibet actually being Tibetan, and not Mongolian, seems convincing. First is the fact that these armors survive only in Tibet. If they were Mongolian, one could reasonably expect that at least some examples would be found in other regions in which the Mongols were active, but this appears not to be the case. Second, the armors bear only Tibetan markings on them, such as the written inscriptions on the leather skirts and elsewhere, the incised markings on the iron elements, and the wax seals on their interiors. Third, and perhaps most important, is the fact that in Tashi Namgyal and other similar connoisseurship texts, lamellar armor is not referred to as Mongolian, whereas related material such as swords, saddles, and stirrups, as well as other types of objects such as sculpture and textiles, are routinely separated into classifications according whether they are from Tibet (*bod*), China (*rgya nag*), India (*rgya gar*), or Mongolia (*sog* or *hor*).[10] The lack of this distinction in the Tibetan texts clearly indicates the armor was considered Tibetan and that there were no reservations about describing other things as Mongolian when appropriate. Therefore, there seems no compelling reason to conclude that the iron lamellar armor described in this section is anything other than Tibetan. Several helmets of various types in the next catalogue section, however, do appear to be Mongolian.

1. For detailed discussions of lamellar armor, see Dien 2000; Kubarev 1997; Laufer 1914; Lebedynsky 2001, esp. pp. 187–94; Robinson 1967; Thordeman 1939, esp. vol. 1, pp. 245–84; Yang Hong 1992; Yang Hong 2002. It should be noted that Laufer used the term "plate armor," not lamellar (1914, pp. 258ff.). Lamellar armor, made of bone and of iron, was also used in Siberia, for which see Thordeman 1939 and also Wilson 2000.
2. His description of lamellar armor for man and horse is given in Beazley 1903, in Latin (pp. 89–90) and in English (pp. 124–25); quoted in part in Robinson 1967 (pp. 138–39), and Świętosławski 1999 (pp. 21–22). For many examples of excavated lamellar and depictions of it from this period see Nicolle 1995 and Nicolle 1999.
3. For instance, note the variance in the number of rows of lamellae among the armors included in this catalogue: cat. no. 1, 31 rows; cat. no. 3, 14 rows; cat. no. 4, 11 rows; cat. no. 5, 13 rows; cat. no. 6, 12 rows. This is counting down the front, and not including the collar. Counting down the back there may be one additional row at the top.
4. Thordeman 1939, vol. 1, pp. 245, 248.
5. Beasley (1938, pp. 20–21) commented: "It would seem that these suits, as well as the necessary weapons, were kept in proper armouries connected with the larger monasteries, for on the leather skirts pendant below the actual mail [*sic*] are found Tibetan characters indicating the troops of men to whom they belonged." Beasley's article also includes useful information about the provenance of several pieces now in national collections in Great Britain.
6. The Tibetan is "chos rgyal khu dbon dus" (Burmiok Athing, fol. 27b; British Library Or 11,374, fol. 85a). I am grateful to Gene Smith for clarifying the meaning of this.
7. "bod du khrab kyi thog ma 'di'i dus smar khams nas blangs." Quoted from *Early History of Tibet, gong sa rgyal dbang lngas pa chen po mchog gis mdzad pa'i bod kyi rgyal rabs rdzogs ldan gzhon nu'i dga' ston* (Delhi, 1967), p. 8.
8. See the appendix "Excerpts from *A Treatise on Worldly Traditions*," Burmiok Athing, fol. 27a–b; British Library Or 11,374, fols. 83a–85a.
9. The armor in a private collection is illustrated in *Rituels tibétains* 2002, no. 150, p. 173. The results cited are at 2 sigma, 95% confidence rating. Samples were taken from the leather lacings, which appear to be completely integral and original to the armors.
10. For an example of *sog* and *sog po* and *hor* or *hor pa* to refer to different Mongol groups in relation to types of swords, see the appendix "Excerpts from *A Treatise on Worldly Traditions*," Burmiok Athing, fol. 24b; British Library Or 11,374, fol. 74a–b. Genghis Khan is identified as the king of *hor* in both texts.

1. LAMELLAR ARMOR AND HELMET

Tibetan, 17th century or earlier
Iron, leather, and textile
H. as mounted approx. 65 in. (165.1 cm)
On loan courtesy of the National Museums of Scotland
Royal Museum, Edinburgh (A.1909.406.7A)

This armor is distinguished by being made up of twice as many rows as most other lamellar armors, and by being the only example in a Western collection, and probably one of the few in the world, to retain full sleeves. Its helmet is also the most complete and best preserved of the eight-plate lamellar type observed during this study.

The helmet bowl follows the usual design, consisting of eight plates overlapping in an over-under pattern. The four outer plates have two shallow cusps with rounded points on either side and a low medial ridge. The inner plates are smooth. The plume finial has a pronounced lozenge-shaped central knop and a flared funnel-like top. The base of the bowl is encircled by a single row of lamellae, each measuring about 5.5 by 2.5 centimeters. The careful construction of the helmet and its undisturbed condition are demonstrated by the fact that the seven lamellae at the brow are pierced by only ten lacing holes, whereas the rest of the lamellae around the rim have eleven. The eleventh hole, located in the center of each lamella, is necessary for the suspension of the cheek and neck defenses below and, therefore, would be superfluous on the lamellae over the brow.

The cheek defenses consist of five rows of diminishing width and are made up of lamellae measuring 4.5 by 2 centimeters, pierced by eleven lacing holes. There are two horizontally placed leather loops on the fourth and fifth rows of the proper left cheek, and on the fourth row of the proper right cheek. These presumably would have been used in conjunction with a strap or lace to tie the cheek defenses beneath the chin. There is a wax seal on the interior of the bottom row of the proper left cheek (see detail). The same wax seal is also found on the fine Tibetan horse armor (cat. no. 32) that came to the Royal Museum, Edinburgh, from the same source (see Provenance).

The nape defense consists of three rows, which flare out and increase in width from top to bottom. The lamellae overlap outward from the front on either side toward the center in the back of each row. The lamellae of the bottom row measure 4.5 by 1.5 centimeters and have ten lacing holes, while those in the two rows above have eleven. As with the lamellae at the brow, the absence of the central eleventh hole indicates that they were designed to be placed in a terminal row.

A braided leather strap is attached to a loop in the lacing on the interior of the helmet bowl just above the rim at the center of the back. This may be the remainder of the straps by which the helmet was secured to the head. Alternatively, it may be intended for carrying the helmet when it was not being worn, by suspending it from the belt or elsewhere. All of the laces of the helmet are made of a strong, supple, buff-colored leather.

The armor has complete shoulders with full sleeves that extend to cover the backs of the hands to the fingertips. It opens lengthwise down the front and

1, helmet

1

has thirty-one rows (thirty in the back, having one fewer at the neck) consisting of fifteen rows above the waist in the front, the curved lamellae of the waist row itself, and then fifteen rows below. There is no distinct collar and no stop ribs. Most of the lamellae have nine holes and measure 4 by 2 centimeters, but the number of holes and the size of the lamellae vary slightly depending on placement in the garment. The lamellae of each row overlap away from the front opening and meet at the center of the back. The skirt is split in the back from the hem to the waist by two vertical seams, forming a central panel that widens progressively from top to bottom. The border attached around the base of the skirts is made of two layers of leather. The lower layer is made of solid panels, and the upper layer is split into rectangular lappets. Like the helmet, the laces of the armor are made of a strong, supple buff-colored leather.

The shoulder defenses are made up of eleven rows and reach to the elbow. The top row of each

1, detail of seal inside left cheek of helmet

shoulder is perpendicular to the adjacent rows on the chest and back and is laced directly to the holes in the edges of the lamellae at the ends of the first five or six uppermost rows on the chest and back. The lamellae of the shoulders diminish slightly in size, from 3.7 by 2 centimeters in the top row to 3.3 by 1.8 centimeters in the bottom row. The sleeves are laced directly to the bottom row of the shoulder defenses. They have a mitten-shaped extension to cover the backs of the hands and are made of soft leather, which is seamed lengthwise up the center of the inner arm. The outer face of each sleeve is covered with small, closely set iron disks, which resemble buttons and are stitched with leather laces to the sleeve. The edges of the disks are raised, with a sunken hollow in the center pierced by two lacing holes. Many of the disks are now missing. The exterior of the proper left sleeve has the remains of a textile covering between the iron disks and the leather sleeve. There are also the remains of finger loops on the interior of the proper left mitten, showing how it would have been attached to the hand. Very similar sleeves of this rare type, along with other armor parts, were found in the ruins of Tsaparang, the capital of the ancient kingdom of Guge, in Ngari (western Tibet).[1]

Several features seem to suggest that this armor is relatively early in date, perhaps as early as the fourteenth to early fifteenth century. These include the number of rows in the body, nearly double that usually encountered; the lack of a collar and stop ribs, which seem to be standard features on other armors; and the form of the shoulder defenses, which reach to the elbow, coupled with the full sleeves, which are not found on other armors. Despite the presumed early nature of these features, however, a recent carbon-14 test on a sample from the leather lacing of the body armor yielded a date range of 1630–90.[2] If these results are valid, then, rather than indicators of an early date, the features enumerated may be regional characteristics of armor from western Tibet in the seventeenth century. This would be in keeping with the only other pair of armored sleeves of this type having been found at a site in Guge, which was conquered and apparently abandoned by the mid-seventeenth century. Alternatively, the carbon-14 date may indicate that this is an earlier armor that was re-leathered in the seventeenth century. The helmet, although distinctive, is similar to others attributed to the fifteenth to seventeenth century (compare with cat. nos. 2, 4).

This armor was lent and then sold to the Royal Museum of Scotland in 1908 by F. M. Bailey (1882–1967), an officer during the Younghusband Expedition of 1903–4, who had a long and adventure-filled career in the British Army and the Indian Political Department of the British government.[3] Shortly after the expedition, Bailey became the British Trade Agent in Gyantse, where he was based from 1905 to 1909. During the Younghusband Expedition Bailey maintained a very detailed correspondence with his parents in Edinburgh.[4] The lack of any specific mention of this armor or the horse armor which also comes from Bailey (cat. no. 32) suggests that they may have been acquired by him later, while he was the Trade Agent in Gyantse, rather than during the expedition. Identification of the wax seal, which is found on both the helmet of this armor and on the horse armor, may ultimately reveal their original source.

PROVENANCE: F. M. Bailey, Edinburgh.

PUBLICATIONS: Beasley 1938, pl. IX; Robinson 1967, p. 162 (not illus.).

1. The sleeves are illustrated as part of a complete lamellar armor in Jugoslovenska Revija, *Tibet* (London, 1981), p. 257; *Guge* 1991, vol 1, pp. 188–89, vol. 2, pl. CXX.
2. The C-14 test was conducted by the Research Laboratory for Archaeology and the History of Art, Oxford, July 20, 2005. I am very grateful to Jane Wilkinson for arranging this test.
3. See Allen 2004 and, for his later career, Bailey 2002. I am also grateful to Stephen Wood for providing useful details about Bailey's career.
4. British Library, London, Mss Eur/F157/163/164.

2. MINIATURE LAMELLAR ARMOR AND HELMET

Tibetan, possibly 15th–16th century
Iron, leather, and textile
H. approx. 30 in. (76.2 cm)
Royal Armouries Museum, Leeds (XXVIA.18)

This is a finely made lamellar armor with matching helmet, which is remarkable for its high quality, completeness, and for the fact that it the only miniature version of such an armor known to exist. Since the proportions of the armor are not correct for a child, it seems likely that it was made either as a votive object or as a costume for a sculpture in a shrine or temple context. The miniature spearhead and matchlock gun in this catalogue (cat. nos. 79, 103) were probably made for similar purposes.

The construction of the helmet is similar to that of catalogue number 1, the bowl being made of eight plates overlapping in an over-under pattern. The cusps of the outer plates, however, are slightly more pointed. The lamellae encircling the base of the helmet measure approximately 3.5 by 1.5 centimeters and have nine holes each. The cheek defenses consist of three rows each. The nape defense is also made up of three rows, which widen by increasing the number of lamellae in a sequence of fifteen, seventeen, and nineteen from top to bottom.

The armor opens lengthwise down the front and consists of seven rows in front and eight in back, including a short collar row at the top of the back. The waist row is the third row down in the front. The lamellae of the body are relatively long and slender, have thirteen lacing holes and, at 7 by 1.2 centimeters, are comparable to those on some full-size armors.

2

2, back view

The lamellae of the bottom row have twelve lacing holes, the central hole not being necessary, indicating that they were designed to be in a terminal row. The lamellae of each row overlap outward from the center front and meet in the center of the back. On the lower half of the rear of the armor the four rows below the waist are split by the usual two vertical seams, one on either side. There are four stop ribs, one attached across the tops of the lamellae at either side of the top row of the chest and under each arm opening on the sides of the armor. The stop ribs consist of a twinelike cord wrapped in a tubular casing of leather. The core material of the stop rib under the proper right arm extends out of its leather casing toward the rear as an unattached cord approximately 43 centimeters long, the function of which is unknown. There are leather laces at either side of the front seam of the coat at the edges of rows two and three, which may have originally served to tie the coat closed. The shoulders consist of four rows of lamellae, which diminish in their number from top to bottom in a sequence of nineteen, eighteen, fifteen, and thirteen on both sides. To attach the shoulder defenses, the uppermost holes of the central lamellae in the top row of the shoulders are laced to the center holes in the lamellae of the collar row, where they pass over the armhole.

A border of silk, brocaded with metallic thread, is attached at the base of each shoulder defense and along the hem of the armor. It is decorated with a pattern of dragons and flaming pearls among clouds. The silk is edged with green leather piping and backed with buff leather.

PROVENANCE: Gift of Colonel A. M. McCleverty, May 28, 1954. According to family tradition, the donor's father, Colonel James McCleverty, acquired the armor during the Younghusband Expedition.

PUBLICATIONS: Robinson 1967, p. 162, pls. XXVIa, b; Haider 1991, pls. 11a, b.

3. LAMELLAR ARMOR AND HELMET

Tibetan, possibly 15th–16th century
Iron, leather, and textile
H. as mounted approx. 56 in. (142.2 cm)
The British Museum, London (1880-725)
Helmet only in exhibition

This is an armor of very good quality, with a matching sixteen-plate helmet, full shoulder defenses, combined textile and leather borders, very interesting markings, and several unusual and noteworthy features.

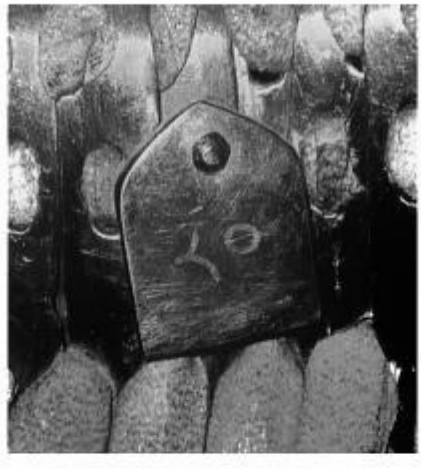
The bowl of the helmet is made up of sixteen plates, rather than the usual eight, with eight outer plates overlapping eight inner plates in an over-under pattern. The outer plates have two cusps with distinct points on either side, which almost touch the points of the adjacent outer plates. Both the inner and outer plates have pronounced medial ridges, a feature seldom seen on inner plates. The tips of the ridges at the tops of the outer plates are undercut to make a notch, into which the edge of the base of the plume tube finial is fitted, also an unusual, if not unique, feature. The tops of the inner plates fit under the base. The plume tube finial is itself atypical in form, having two knops shaped like umbrellas and a stepped base. The central knop of the plume tube bears a very small and crude inscription in *dbu can* script with the word *spus* followed by the number 80, the same number that is found on the back of this armor. The term *spus* usually refers to an assessment of quality, but in this case the inscription may simply mean "item number 80."

The rim of the helmet bowl is encircled by a row of lamellae, which overlap in one direction all the way around. This is a different construction, and seemingly less refined, than on the helmets in catalogue numbers 1 and 2, where the lamellae overlap outward in opposite directions from a single lamella at the center of the brow. There are no cheek defenses. The nape defense consists of three rows of lamellae, which overlap from the front to the rear and meet at a central lamella in the back. The lamellae of the helmet measure 5.5 by 1.5 centimeters and are pierced by eight holes in the row around the rim and by twelve holes in the nape defense. A wax seal is found on the interior of the twelfth lamella from the proper right edge on the bottom row of the nape defense.[1] Like the seals found on the helmet in catalogue number 1 and the horse armor in catalogue number 32, this example also has a design of stylized Tibetan letters within a double border. The border on this seal is quatrefoil, however, while borders of the other two are round. Otherwise all three seals are generally very similar.

The armor opens down the center of the front and is made up of fourteen rows in the front and fifteen rows in the back, counting the collar row. The collar is lined with leather. The waist is at the sixth row, counting down the front. There is a buckle attached to the edge of the top row on the proper left side of the chest. The lamellae at the top of the chest measure 7 by 1.5 centimeters, while those from the waist down are slightly smaller at 6.5 by 1.5 centimeters. Most are pierced with twelve lacing holes. At the rear, the eight rows below the waist are split by two vertical seams, one at either side. In the center of the back, three rows down from the collar, there is an iron tag inlaid in brass with the Tibetan number 80 (see detail), matching the number engraved on the helmet. The tag is square with an arched top, made of thick polished iron the same color as the lamellae, and held by a single rivet to a lamella

3

3, helmet



3, detail of inlaid iron tag on back of armor

beneath it. Exactly the same type of numbered tag is found on the lamellar armor in the Royal Armouries Museum (cat. no. 26).

The shoulder defenses consist of fourteen rows, and they also have an underarm guard made of two rows, a very unusual feature. Laces extend from the ends of several rows, by which the shoulder defense could be tied to the arm, and there is a leather loop at the end of each underarm guard through which the arm would pass. The lamellae of the shoulder defenses are smaller in size, those in the bottom row measuring 3 by 2.5 centimeters, and have nine lacing holes. There is a rectangular panel of woven silk, brocaded with metallic thread, attached to the bottom row of each shoulder defense. The panels are edged with green leather piping and are backed with buff leather or linen. Narrower panels of the same material are attached to the hem of the armor on top of two layers of leather, the uppermost being split into rectangular lappets, and the bottom layer being solid panels of leather. This triple border is also an unusual feature.

The presence of the matching Tibetan inventory number 80 on both helmet and body armor indicates that they were considered a pair in their original Tibetan setting, a fact that has been established conclusively for very few other examples. Other unusual features of this ensemble mentioned above include the sixteen-plate helmet, the presence of medial ridges on the inner plates of the bowl, the form of the plume tube finial, the underarm guards, and the triple hem.

PUBLICATION: Zwalf 1981, p. 124 (illus.).

1. I am grateful to Barbara Willis and Richard Blurton for pointing out the seal, which I overlooked during my brief physical examination of the armor in March 2005.

4. LAMELLAR ARMOR AND HELMET

Tibetan, possibly 16th–17th century
Iron, leather, and textile
H. as mounted approx. 60 in. (152.4 cm)
Pitt Rivers Museum, Oxford (1941.2.126.1, .2)

This is an armor and helmet of good quality, but slightly less so than the preceding examples. The chief differences are that the lamellae are slightly flatter and not as finely finished, they are larger, and they overlap in a different pattern than on the previous examples. Also, the surface is russet brown, rather than silvery iron. The helmet has noteworthy markings on it.

The helmet is very similar in size, form, and construction to the Edinburgh helmet (cat. no. 1), being of the same eight-plate type and having full cheek and nape defenses. The lamellae around the rim of the helmet bowl measure 5.5 by 2 centimeters, have eleven lacing holes each, and, like those on the British Museum helmet (cat. no. 3), overlap in one direction all the way around. The cheek defenses consist of seven rows, the lamellae measuring 3 by 2 centimeters and having eight holes. The nape defense is of three progressively wider rows, the lamellae measuring 4 by 2 centimeters and having eleven holes each. The words *mgon khang shar* are inscribed in large *dbu can* characters on the front of the helmet on the first inner plate to the proper left of center. The inscription indicates that the armor was kept in the shrine (*mgon khang*) of a guardian deity on the east (*shar*), either the eastern shrine or the east side of a particular shrine. Inscribed in very small *dbu can* characters on the base of the plume tube finial is *shong ba* or *shod ba* (?) followed by the Tibetan number 58 (see detail), which compares with the inscription in the same place on the British Museum helmet (cat. no. 3). The meaning is not clear, but it seems to refer to inventory numbering or storage in an arsenal or fortress before its use in a *mgon khang*.

The armor opens lengthwise down the front and has no shoulder defenses. It consists of eleven rows in the front and twelve rows in the back, including the collar row, which is lined with leather. The waist is the fifth row, counting down in the front. The lamellae are larger than those of the previous armors, measuring 8 by 2 centimeters at the top of the chest, 9.4 by 2 centimeters in the fourth row, and 9 by 2 centimeters in the bottom row. They have nine lacing holes. Unlike the previous armors, the lamellae of this armor do not overlap outward from the front and meet at the center of the back. Instead, the lamellae of the top two rows of the chest (which stop at the arm openings) overlap right over left, and the lamellae of all the other rows overlap left over right from the front all the way around the back. The difference in the overlap pattern between this and the previous armors may be an indicator of a later date or a regional style, or reflect a trend toward simplification in armor-making techniques.

4, detail of inscription on base of helmet plume finial

4, back view

4, helmet

There are two rows of lamellae over the top of the arm opening, set perpendicular to those on the chest, and attached in the same way as the first two rows of a complete shoulder defense. This feature is also found on other armors without shoulder defenses (see cat. nos. 5, 6). These lamellae measure 3 by 1.5 centimeters and have eight holes each. There are remains of stop ribs at the top of the chest and under each arm. The armor has a detached belt made of a strip of leather with an iron buckle. A rectangular strip of textile with faint traces of Tibetan characters is attached to the proper right side of the chest at the inside of the end of the second row. Two knotted ends of fabric in the center of the second row of the back are probably also the remains of similar textile labels. The back of the armor is split on either side by two vertical seams for the six rows below the waist. A border consisting of two layers of leather is attached to the bottom row of lamellae around the base of the armor. The upper layer is split into rectangular lappets, and the lower layer is made of solid rectangular panels. There are inscriptions written on the lower layer, including