Chapter 4

A COUNTERPOINT IN AFRICA

IMAGES OF ELEPHANTS PERMEATE GLOBAL POPULAR and consumer culture in the twenty-first century, turning up not just in nature documentaries but also in advertising, company logos, children's books, cartoons, and all manner of decorated consumer goods. Almost always this popular, globally commercialized image is of an African elephant, not an Asian one.

There are an array of aesthetic explanations for this tendency. The African elephant is taller—or at least the savanna subspecies is; the African forest elephant of the Congo is relatively small.[1] The concave slope of the African elephant's back and the slightly more upright angle at which it carries its head lend the species a kind of grandeur and stateliness that some may find lacking in the Asian species. The African elephant's ears are huge and splendid while the Asian elephant's are rather small. Many graphic designers surely appreciate how the African elephant's forehead rises seamlessly from the line of its trunk. The Asian elephant's forehead, by contrast, juts upward into a bumpy, domelike protrusion. Both species, of course, are beautiful and majestic in their own right, and certainly many artists have found ways of conveying the magnificence of the Asian elephant. But visually comparing the two animals side by side, it's not difficult to discern why many modern

illustrators, designers, and iconographers have been drawn to the African species.

African elephants exist almost entirely in the wild, whereas a quarter to a third of Asian elephants are working animals, most with mahouts. Thus while Polo Ralph Lauren's logo shows a horse with a rider, Banana Republic's shows an African elephant, who like virtually all African elephants is riderless. The mahout would be a better-known figure to the world if Asia's long-standing cultures of elephant domestication and mahoutship were mirrored in Africa. Why aren't they?

Understanding the divergence in the two species' experiences with humans requires a look at human attempts at domesticating both African and Asian elephants over the past several thousand years. This story takes us far beyond Southeast Asia and India, to the Mediterranean world in classical times, including much of North Africa, Southwest Asia, and southern Europe. In turn, by looking at how efforts at domesticating African elephants succeeded briefly in this Mediterranean and African zone but did not endure, we can throw into sharper relief the complex and unique dynamic that emerged between humans and elephants in South and Southeast Asia, and that continues to shape the Asian species to this day.

THERE ARE ROUGHLY ten times as many African elephants on the planet today as there are Asian elephants.[2] But unlike in Asia, elephant domestication in Africa has never been widespread. Furthermore, while the history of elephant domestication in Asia has been continuous over the past three millennia, in Africa the practice has occurred only in fits and starts. It is possible to misconstrue the contrast as evidence that Asia's long-standing tradition of capturing wild elephants has caused that continent's elephant population collapse. But comparing the histories of Asian versus

African elephants over the past several millennia reveals a more complicated picture.

The earliest evidence of elephant domestication appears in the archaeological record of the ancient Indus Valley, or Harappan, civilization, whose excavated legacy has left us several stone seals showing an elephant with a cloth, or pannier, draped across its back. The imagery strongly indicates that the Indus Valley civilization was familiar with taming elephants.[3] Scholars disagree about whether to date elephant domestication in the Indus Valley to the second millennium B.C. or even earlier, a debate that won't be settled here. A more pertinent question, perhaps—though the archaeological record gives us no means to answer it—is just who *invented* elephant domestication. Did the inhabitants of the Indus Valley civilization invent it themselves, or did they learn it from a nearby culture that was perhaps more adept at befriending forest animals than at stone-carving?

Whatever the case, by the first millennium B.C., elephant domestication was widespread throughout the Indian subcontinent. Powerful kings and princes demanded elephants as beasts of combat for their armies. Elephants were also employed for nonviolent tasks, like logging, transport, marching in parades, and so on. But the use of elephants for military combat appears to have been especially important during this epoch. A kind of war elephant "arms race" among ancient Indian kings motivated many to institute royal forest preserves, where agricultural development was banned, so that a steady supply of elephants could be caught for the military. Some have proposed that these royal preserves even helped to conserve the species' numbers.[4] The idea is intriguing but somewhat unlikely: even when ancient kings fastidiously protected elephant forests, their ultimate aim was to capture elephants at a massive scale and march them toward death: either immediate death in bloody battle, or genetic death in the military's elephant corrals,

where they were unlikely to mate. The forest-based economic activities in which the elephants were engaged—that is, in logging or in cross-forest transportation—would have placed domesticated elephants in a far better position to reproduce.

An African tradition of elephant domestication shows up in ancient records too. At Meroe, along the Nile River in present-day Sudan, a civilization that historians refer to as the Meroites (or sometimes the Kushites) appears to have had an elephant-domesticating culture as early as 400 B.C. A stone relief excavated from the Meroite temple site Musawwarat-es-Sofra shows a king riding an elephant, with an attendant kneeling for them and holding the elephant's trunk. The excavations here indicate that the complex had a large enclosure, possibly a corral for the domestic elephants.[5]

Little is known about the Meroites; and nothing about how their tradition of domesticating elephants came about. Meroe was a major metalworking center in the ancient North African world—one archaeologist has whimsically dubbed it the "Birmingham of Africa," after the metalworking city of the English Industrial Revolution.[6] As a center for metal crafts, Meroe had significant trade networks extending in all directions, including eastward to Yemen and the Arabian Sea. Since Indian trade also extended to Yemen, it's plausible that the Meroites learned of elephant domestication through contact with Indian merchants. Of course, Indians had been domesticating a different species—the *Elephas* genus, of which the Asian elephant is the only surviving member, split from the African elephant's *Loxodonta* genus millions of years ago—but there's no reason this modern, Linnaean sort of distinction would have prevented the Meroites from trying to do in their own backyard what their tradesmen informed them the Indians were doing in theirs.[7] That said, it's equally plausible that the Meroites innovated their own local domestication methods, independently of their trade contacts.

The Meroites' use of elephants seems to have been an isolated phenomenon in Africa for another century. Of course, we can't discount the possibility that a culture in southern Africa domesticated elephants during this period but never left a stone record of it. Training the sub-Saharan African elephant as a work animal would have been especially practical and useful. Other large herbivorous mammals in southern Africa (giraffes, zebras, gazelles, and so forth) are far more difficult to domesticate than African elephants. Nor could horses or cattle easily have been brought from northern to southern Africa. A biting insect called the tsetse fly is widespread in tropical southern Africa and carries a parasite called the nagana pest, which is especially toxic for most work animal species originating from Eurasia—but not to African elephants. In the historical record, though, it's only at Meroe in Sudan, and not in southern Africa, that we find hard evidence of elephant domestication in Africa during this time.

This isolation had changed dramatically by the third century B.C. What changed during the intervening years was the incredible influence, throughout the Mediterranean world (which included North Africa), of the Hellenic Macedonian king Alexander (popularly known as Alexander the Great), who conquered lands from the Balkan Peninsula to the Indus River Valley between 336 and 323 B.C. Alexander's experience at the easternmost reach of his empire proved decisive in launching Europe and North Africa's own brief but often spectacular "war elephant" era. In 326 B.C., on the upper reaches of the Indus, Alexander was impressed by the elephant cavalry of the enemy Indian king Porus (or Puru). Alexander had seen trained elephants before, in Persia, but they had been mostly transport elephants carrying supplies or hauling wagons along roads.[8] But Porus's terrifying elephant cavalry made an indelible impression on the Greek soldiers at the battle of the Hydaspes, in modern-day Punjab. This in turn shaped Alexander's subsequent

military thinking, as well as that of his generals, especially his lead general Seleucus, whose infantry had borne the main brunt of the Indian elephants' attack.[9]

The tactical strength of Porus's war elephants lay partly in their ability to carry several soldiers at once, who could fire arrows in multiple directions. More importantly, though, the elephants were incredibly effective as a first line of attack, sweeping aside the Hellenes' defenses with their great tusks and powerful trunks, then stomping and kicking stunned infantrymen, while even the best-trained horses scattered in fright. Alexander's forces ultimately prevailed in the battle, but his and Seleucus's immediate thought was to gain elephants of their own as tribute, along with these elephants' Indian mahouts, who could teach the Hellenic soldiers the art of mahoutship.[10] The Alexandrian forces would send the elephants and mahouts westward, as a new weapon of war to wreak havoc upon enemy armies around the Mediterranean.

Alexander died only a few years after this battle, but many of the post-Alexandrian Hellenic successor states, inspired by Alexander's experience, built up armies with large elephant cavalries. The general Seleucus gained control of the largest of these successor states, the Seleucid Empire, in which elephants played a crucial role as pack animals, both in military and civilian life.[11] The Seleucids, as the rulers of this empire came to be called, had an ecological advantage over the other post-Alexandrian successor states in acquiring elephants, because during this time the natural habitat of the Asian elephant still extended across Persia into Mesopotamia—both fully within the Seleucid domain.[12]

Nonetheless, the Hellenic states cut off from a natural supply of Asian elephants could still trade for them or seize them (and their attendants) as war booty. Thus the Greek king Pyrrhus, who ruled the small Hellenic kingdom of Epirus, was able to build up a significant cavalry of Asian combat elephants, even though Epirus

was located in northwestern Greece on the Ionian Sea, far from the Asian elephant's natural range. Vying for control of the central Mediterranean, Pyrrhus and his generals used their elephants to great effect, marching on southern Italy in 280 B.C. and wresting the island of Sicily from the Carthaginian Empire in 277 B.C.[13]

After their defeat, Carthaginian leaders built elephant cavalries of their own. They had some elephants shipped from the east, but the city also had its own local supply of elephants: African pachyderms in the foothills of the nearby Atlas Mountains, in modern-day Tunisia and Algeria, whose river valleys in classical times were wetter and greener than they are today. These elephants of North Africa looked somewhat different from the large savanna elephants to the south, though they were of the same species. The North African elephants were smaller—a bit smaller, even, than many Asian elephants. But they were still physically imposing and seemed promising as combat animals.

The Carthaginians hired the Numidians, a tribal group from the Atlases, to catch and tame the local elephants. Carthage's elephant cavalry became a mixture of Asian and African elephants.[14] The elephant tamers and mahouts were also a mixed lot, composed of both Indians and Numidians. Despite the tamers' mixed origins, though, Carthaginians referred to mahouts as "Indians"—a word that, in the context of elephant culture in the classical Mediterranean world, came to refer to a profession (mahoutship) rather than to a people from the landmass of India.[15]

Some Mediterranean geographers at this time conflated India and Africa, imagining them as connected at their extremities by a land bridge out beyond the Indian Ocean. The Indian Ocean was surely an inland sea, these geographers supposed—otherwise how could India and Africa both have elephants? Other classical geographers, who lent more credence to the tales of sailors, disputed the theory. But the proposed Indo-African "land bridge" would show

up on some European world maps as late as the medieval era, over a thousand years after Carthage first mixed Indian with African mahouts, which had contributed to the original misperception. Only in the fifteenth century, when Vasco da Gama reached India from the Atlantic, were Western geographers satisfied, once and for all, that the hypothetical land bridge did not exist.[16]

Carthage was not the only North African power to train African elephants for war during the third century B.C. Egypt, which had become another Hellenic successor state, ruled by a royal line called the Ptolemies, clashed with the Seleucids over control of the Levant, the far eastern Mediterranean coast. Wishing to build an elephant cavalry of their own to compete with the sophisticated elephant divisions of the Seleucids, the Greek-speaking kings of Egypt established elephant-hunting ports along the so-called Troglodyte (or "cave-dweller") coast, today's Sudanese and Eritrean shore of the Red Sea. The largest of these hunting ports was Ptolemais Theron (Ptolemy of the Hunts).[17]

This area was outside the Ptolemies' sphere of direct influence, and handsome sums had to be paid to local elephant hunting tribes (referred to in records as "Troglodytes" and "Blemmyes") to capture elephants alive rather than kill them for ivory and meat. The captured African elephants were taken by specially designed ships up the Red Sea coast and then by canal across the desert to Memphis on the Nile, the Ptolemies' major city. (Eventually the canal route was deemed impractical, and the elephants were marched overland instead.)[18] Here they were trained for warfare. The Ptolemies' elephant specialists seem to have been a mix of Indians and Meroites. Possibly some of the Troglodyte elephant catchers came into Egypt as well, to become war mahouts. The Ptolemaic elephants' most famous deployment was at the Battle of Raphia in 217 B.C., at the modern site of the Gaza Strip. The Egyptian Ptolemies had 73 African elephants; the Persian Seleucids had 102 Asian elephants. This

was, evidently, the only battle in history where African and Asian combat elephants were made to fight each other. Records of the battle assert that the Asian elephants, who were larger and better trained, thoroughly outperformed the African elephants. But much else was going on in the battle, and the Ptolemies won the day.[19]

By this point in the third century B.C., Mediterranean military strategists were beginning to realize that Alexander and his successors may have overestimated the effectiveness of elephants in combat, and that the subsequent arms race in elephants, which had mobilized thousands of elephants, both African and Asian, away from their natural habitats and toward the Mediterranean, had been irrational. Combat elephants were most effective against armies that had no prior experience with them. Porus had deployed his elephant cavalry against Alexander with notable success, just as Pyrrhus of Epirus and his elephants had taken the Romans and Carthaginians by surprise during his campaigns in southern Italy and Sicily.

But Roman generals adjusted their field tactics in anticipation of further elephant-based frontline attacks. They realized that war elephants, though very fast when charging, lacked a horse cavalry's ability to change direction quickly, to avoid oncoming spears and arrows. In the forests of India, this disadvantage might be offset by the paucity of large open spaces needed to fire a projectile at an elephant from a safe distance, but the Mediterranean was drier and more sparsely vegetated. The Roman generals divided their own defensive front lines into comblike formations so that charging elephants could be easily enveloped and speared from the side. The strategy proved effective.[20]

The ancient Mediterranean world's most famous episode involving war elephants was the ambitious campaign of the Carthaginian leader Hannibal Barca against Rome in 218 B.C. Hannibal's army marched with thirty-seven war elephants from Spain through

France, across the high, white-peaked European Alps (though it's unclear through exactly which pass they crossed), and into the Italian Peninsula. The elephants seem to have been a mix of Asian and African. Hannibal's personal elephant was named Surus, sometimes translated as "the Syrian," so was likely an Asian elephant.[21]

The march looms large in Western memory, the stuff of epic narrative and stirring paintings—and yet one senses in accounts of the failed campaign the limits of the Carthaginian military commanders' elephant knowledge. For instance, when passing through France (Gaul, as it was known then), Hannibal's elephants were unable to ford the Rhone River—a far gentler stream than the Sissiri during monsoon season. The soldiers had to build a small fleet of rafts to ferry them across. Why couldn't the elephants do it themselves? Likely because these elephants had spent most or all of their lives in arid parts of the Iberian Peninsula or North Africa and so had little experience swimming.[22]

Nor would the Carthaginian commanders have known that elephants, if raised and trained near a proper river, could develop incredible swimming and fording abilities—more useful, even, than their abilities during combat. The value of elephants for logistics, rather than for combat, does not appear to have dawned on any of the North African or European military strategists of this era—an oversight that surely stemmed from Alexander having ignored the transport elephants he encountered in Persia a century earlier.[23]

From the second century B.C. onward, the use of war elephants in the Mediterranean world declined, all but disappearing by the first century A.D. Part of the explanation for the decline appears to be geopolitical: the triumph of the Romans, ruling from their European seat of power, and the defeat of the other ambitious Mediterranean powers to the south and east, closer to the natural ranges of African and Asian elephants. The Romans did employ war elephants in a variety of military campaigns throughout the European

continent, from Greece and Macedonia to Iberia and Gaul. But they never invested as heavily in the development of large-scale elephant cavalries as had Carthage and most of the Greek-speaking powers—rivals whom the Romans ultimately vanquished.[24]

An even more important reason for the decline of the Mediterranean combat elephant was that the natural ranges of both Asian and African elephants rapidly contracted during this period. In the late classical era, Asian elephants retreated eastward, and the African ones moved south. The animals disappeared not just from Southwest Asia and the North African coast, but also from places as far south as Meroe. Wild elephants adjacent to the Mediterranean sphere may have been overcaptured and overhunted by humans, but the more decisive factor in this spatial retreat was that North Africa and the Middle East both became hotter and drier over the course of the late classical period, as the Saharan and Arabian deserts encroached upon what had formerly been verdant grassland.[25]

The domesticated African elephant fades from historical view until modern times—or nearly so. In the region along the Red Sea coast where the Ptolemies had established their elephant ports, a kingdom arose during the first millennium called Axum, located in modern-day Ethiopia and Eritrea. Numerous records attest to the Axumites' use of domesticated elephants hundreds of years after the last elephant cavalry had been vanquished in the Mediterranean region, and the last Ptolemy was deposed from power in Egypt. In A.D. 533 the Byzantine emperor Justinian sent an envoy to Axum; the Axumite king greeted him on a chariot drawn by four elephants. Later in the century, Islamic accounts (which may be apocryphal) say that an Axumite king sent an army with an elephant cavalry to sack Mecca, but the elephants refused to approach the city.[26]

During this period, an Ethiopian hill tribe on the margins of Axum, the Beja people, are reported to have used a large number of trained elephants in a battle against Arab invaders.[27] A British

colonial administrator in Sudan opined in the 1950s that these Bejas were the descendants of the Blemmyes, or Troglodytes, who had caught wild African elephants for the Ptolemies of Egypt eight centuries previously.[28] The Axum ruling class spoke and wrote Greek for many centuries, so it seems plausible that the Axumite elephant-domestication culture came directly from Ptolemaic Egypt. Alternatively, perhaps the Meroite elephant catchers and tamers migrated into the Axumite region, following the elephants in their retreat from an expanding Sahara. Or perhaps the Bejas and Axumites developed an elephant-domesticating tradition independently of Meroite Sudan and the Hellenic world. In any event, as late as the sixth century, a culture of elephant domestication appears to have persisted in the region of Axum.[29] It disappeared with subsequent Arab conquests. The Arabs, unlike the Axumites, were camel domesticators, which gave them an enormous advantage as the Sahara gradually expanded.[30]

Domesticated elephants retreated from the Western experience for over a millennium. As the centuries passed, dim Western memories of trained elephants manned by mahouts tended to be negative, a symbol or storytelling trope signaling outside military incursion against the sphere of the Abrahamic religions. This is likely why the story of Hannibal's elephant-mounted march against Rome, the eventual focal city of much of Christianity, looms large in Western memory; and why the biblical story of the Maccabee rebels' resistance against the Seleucids' war elephants looms large in the Jewish narrative tradition; and why Muslims refer to the failed Axumite campaign against Mecca as the Year of the Elephant. The trope shows up in modern storytelling too, in J.R.R. Tolkien's Battle of Pelennor Fields and in George Lucas's Battle of Hoth.

This negative narrative legacy contrasts with the impressions formed by British refugees fleeing Burma in 1942, for whom elephants meant salvation. In recent history, elephants have been used

in war not to scatter and intimidate the enemy's front line but to avoid confrontation with the enemy altogether: to hide, avoid, and escape. This is a pattern which we'll see extended to Vietnam during the 1960s (Chapter 5) and to the Kachin Hills of northern Burma up to the present day (Chapter 8). But elephants rarely if ever play this role in storytelling conventions shaped, in part, by the ancient Western world's dramatic and ultimately abortive experiment with the elephant as a weapon of violent combat.

WHAT ABOUT African elephant domestication in lands farther south, beyond Axum? European explorers' records from the nineteenth century give us a few indirect hints of indigenous elephant domestication in central and southern Africa. These hints are obscure and unreliable but also tantalizingly suggestive. During the 1810s, the British missionary and explorer John Campbell traveled among the Tswana peoples of southern Africa. His guides told him of a group to their northeast—near Maputo Bay, in modern-day Mozambique—who "rode on elephants" and "used elephants as beasts of burden." The Tswana called this group the Mahalaseela people, which may translate as "people of the road" or "people of the cloth." According to Campbell's informants, this northeastern neighbor also taught other tribes in the region how to inoculate against smallpox. Campbell opined that the Mahalaseela had coastal trading links with the Portuguese (whose maritime empire extended to India). Little else is known about the group.[31] Whoever they were, and whatever their true relationship with elephants, their way of life was likely radically disrupted by the Mfecane or forced migration wars among the region's polities, which took place soon after Campbell's information-gathering expeditions of the 1810s.

A comparable secondhand mention of indigenous elephant domestication in southern Africa comes from the records of the

Scottish explorer David Livingstone. In 1869 Livingstone reported in a letter to a friend that he had found an indigenous people in the Maniema region of central Africa, just west of the African Great Lakes, who said their ancestors "tamed and rode elephants." Livingstone added that there was "a total absence of the idea south of this"—so we can deduce that he was unaware of Campbell's report from a half-century earlier, about the supposed Mahalaseela elephant riders.[32]

One reason Livingstone pressed his Maniema hosts for information about local traditions of elephant riding was his desire to suggest a historical link between the peoples of the African Great Lakes and the peoples of the classical Mediterranean world. Livingstone, like numerous other European explorers of the African interior, hoped to demonstrate that after the classical era, "Hamitic" peoples from northeastern Africa, with strong genealogical and cultural links to Egypt and to Hellenic antiquity, penetrated into the interior of the African continent, following the Great Rift Valley, and settled near the source of the Nile. The theory was based mainly on the fact that the Ptolemaic Egyptians had possessed some partial understanding of the Nile up to its source. The ancient Greek-Egyptian geographer Claudius Ptolemy had recorded that the river began at two lakes that drained the "Mountains of the Moon."[33] These could very well be lakes Victoria and Albert, which drain into the Nile, and the Rwenzori Mountains, which have snowy peaks and partially drain into Lake Albert. Livingstone and his contemporaries supposed that if quasi-Hellenic, "Hamitic" peoples living in the Lower Nile during the classical period had good geographical knowledge of the upper Nile, then perhaps during the eventual Arab invasions of northeastern Africa, these groups retreated southward, passing through Meroe and Axum, and settled in the continental interior—bringing their knowledge of elephant domestication with them. Bolstered by nineteenth-century

Western racial attitudes, these searches for lost "Mediterranean" peoples stimulated popular interest in and support for expeditions at the outermost frontiers of European empire.[34]

Subsequent ethnographers in the Maniema region do not seem to have found anything echoing Livingstone's report. Maybe Livingstone, overeager to find some artifact or oral memory that could link the African interior with the ancient Mediterranean world, had asked the indigenous people in Maniema a set of leading questions in order to get a desired result. Or perhaps some Maniema tribes really did have such a tradition, and Livingstone talked with the last individuals who still spoke of it. If they did have such a tradition, it would not necessarily follow that their elephant-domesticating knowledge came from the Mediterranean sphere.

Livingstone likely had elephant domestication on his mind for additional reasons, besides this wish to associate Great Lakes peoples with the classical Mediterranean. In 1868, a year before Livingstone's letter, the British had invaded Ethiopia (then called Abyssinia) and brought with them forty-four Asian elephants, with Indian mahouts, to assist in transportation and logistics. The idea of instituting elephant-based transportation in sub-Saharan Africa gained momentum among European explorers and colonists between the 1860s and 1890s. European colonists were aware of the severe limitations that the tsetse fly placed on horses and mules in the African tropics. African elephants seemed impervious to the fly, but nobody knew if they could be tamed effectively. If Asian transport elephants could be brought into Ethiopia, which is at a transitional latitude between northern and equatorial Africa, perhaps they could be brought into the tropical tsetse zone as well. And if such an experiment failed, then Europeans could try to devise a way to train African elephants, or perhaps find some half-lost indigenous tradition of doing so, such as the Maniema tradition referred to by Livingstone.[35]

The Belgian Empire's King Leopold financed the one major experiment in introducing domesticated Asian elephants into tropical Africa as a means of transportation. It took place in 1879. Leopold was especially eager to establish an elephant-based transport service for his vast domain in the Congo, where human porters, nearly all of whom were enslaved laborers, tended to flee at the first available opportunity. Leopold hired an Englishman who, along with a group of Indian mahouts, brought four Asian elephants from India to Tanganyika.

The elephants were marched across the arid grasslands toward Lake Tanganyika, the huge, long body of water that marks the beginning of the westward-flowing Congo basin. Many of the Indian mahouts, seeing the conditions of the landscape and the available vegetation, had misgivings about the expedition and turned back. The elephants got sick, either because many of their skilled attendants had left, or because the ground vegetation was inappropriate for them. The problem was not, apparently, the tsetse fly. At any rate, Leopold's experiment had failed.[36]

In the early twentieth century, Belgian colonists in the Congo turned their attention to the domestication of the native elephant species. Hiring mahouts from Ceylon and eventually employing indigenous labor from the Congolese Azande people, the Belgians created training centers for African elephants at several locations in the northeastern Congo. By the 1930s, the mahouts at the domestication camps were all Congolese, and they'd developed methods quite unlike those in South Asia. The African elephants mainly pulled large wagons. One English visitor was impressed by the African pachyderms' acumen in performing the job. Should the wagon brakes fail going down a hill, noted the visitor, the elephants would "seize hold of the wagon-pole in their trunks and throw back their full weight on the loaded wagon. . . . I have seen them doing this on their own initiative."[37] Though the training centers showed the

promise of the domesticated African elephant, the need for elephants as a mode of transportation declined in sub-Saharan Africa as motor transport became more widespread.[38] Nonetheless, the precedent set by the Congolese camps eventually proved useful in the establishment of elephant safari parks elsewhere in southern Africa, such as in Botswana and South Africa.[39]

EVEN IF WE SUPPOSE that Campbell's and Livingstone's nineteenth-century informants provided them with good information, and that the Mahalaseela and Maniema peoples really were riders of African elephants—and even if we suppose that other sub-Saharan African peoples elsewhere domesticated elephants too but left even less trace of having done so—a question still lingers: why does Asia have a continuous history of elephant domestication, enduring for millennia, whereas in Africa it occurred so sporadically? The Luba kingdom in the eastern Congo, the powerful Songhai Empire in West Africa, the Great Zimbabwe kingdom in the south—they were all surrounded by large herds of elephants. Yet people in these areas either hunted them or simply left them alone. Being strong and intelligent and naturally resistant to the tsetse fly, the elephants were the best local candidate for animal domestication. So why weren't Africa's powerful kingdoms and empires domesticating elephants as the kingdoms of India and Southeast Asia were?

The likely explanation is perhaps counterintuitive and has to do with the intensity of historical processes of deforestation in Asia as opposed to Africa. In Asia, the growth of immense agricultural civilizations in the Indo-Gangetic Plain and the Great Plain of China erased vast forestlands. Over several thousand years, these societies built up dense human populations and expanded deep into the surrounding sylvan regions. Biological evidence shows that only

a few millennia ago, Asian elephants, today so closely associated with hills and forests, once dwelled on these open plains—that they used to be grazers feasting on grasses, rather than forest browsers munching on bamboo leaves, creepers, and vines.[40] The large, agriculturally intensive societies of India and China, which together over many millennia have contained a significant percentage of the world's human population, pushed the elephants out of these plains.

As these agricultural civilizations expanded into elephant habitat, an individual elephant faced four possible trajectories. One, if the elephant maintained its original habitat in the plains, it faced great peril from the farmers tending new paddies and fields. Two, the elephant could flee into the forest, having learned that all humans are the enemy. This elephant would have a better shot at survival than the first one, but in the forest, it could easily meet people who hunted elephants for ivory or meat. Furthermore, the elephant would likely have no real sense of where the farmers would next breach the forest margin. This elephant could easily find itself trapped in a small, isolated pocket of forest—still alive but unable to mate with a large herd.

In a third scenario, the elephant might be captured by humans associated with an expanding agricultural kingdom. This elephant would march in royal parades and religious festivals, or it would become a combat elephant and fight armies in some distant battlefield. This elephant would likely spend much of its life in a stable with very limited mating opportunities, or perish in battle, either fate being a genetic death.

Needless to say, none of these first three possible trajectories was particularly good for contributing to species survival. But there was a fourth possible path. As agricultural societies were expanding, they were displacing not only large animals like elephants but human populations too, usually smaller farming cultures. Faced with the prospect of absorption into a much larger and more

expansive agricultural empire, these groups chose, for one reason or another (fear of enslavement, determination to preserve language and spiritual practices, etc.), to migrate into the forested hills rather than stay put. Fleeing their old lands and arriving in new ones, these "fugitive" cultures would clear forestland and irrigate paddies to some extent; but mostly they had to adopt new crop-production techniques, especially swidden (shifting field) agriculture, more in keeping with the limits and possibilities of mountain ecology.[41] Some political geographers and anthropologists even use a special toponym for the uplands of South and Southeast Asia, "Zomia" (from *zomi*, which means "highlanders" in the patois of the Naga Hills). This region has been a kind of layered receptacle for different waves of people who fled powerful kingdoms in the adjacent lowlands and underwent self-reinvention up in the hills.[42]

Most of northeastern India and Southeast Asia's elephant-domesticating hill tribes underwent this experience of group exodus and self-reinvention. The Kachins were pushed out of Yunnan after a series of Mongol and Han invasions there.[43] Moving into the upper Irrawaddy Valley and the Hukawng Valley, they then displaced many of the Hkamti Shans of that region, many of whom in turn fled across the Patkai Mountains to the Lohit and Dihing valleys.[44] The Was, a swidden-practicing, elephant-domesticating people in the northern Shan Hills, were displaced into that region's mountain forests by expansions of Tai-speaking kingdoms in nearby valleys.[45] The Khas, who have had a mahoutship culture in the forests of Laos, fled from the Vietnamese coastal plain in 100 B.C., pushed out by Lao peoples who were fleeing an invasion from China.[46] The Karens, along the hilly border country between Burma and Thailand, appear to be an admixture of different groups that migrated from expanding agricultural kingdoms in different lowland areas: from the lower Irrawaddy (in Lower Burma), from the lower Chao-Praya (in central Thailand), and from the Zimme

Plain (in northern Thailand). Hence the various Karen languages mix elements of Tibeto-Burman, Austro-Asiatic, and Tai.[47]

Such groups all sought to keep at arm's length the large agricultural societies that had just displaced them.[48] This meant they had to adjust to forest life. But unlike the already established human inhabitants of the forest, they could not base their new lives entirely on hunting and gathering. If they infringed upon the preexisting groups' hunting grounds, they risked starting a war. So these forest newcomers turned to activities like logging, mining, and portering.

Now, imagine an elephant like Pagli—the "crazy" female elephant at the Mithong logging area that we learned about in Chapter 2. Imagine that a Pagli-like elephant met such a displaced band of humans in the forest and, rather than avoiding them, followed them, hoping for attention and food treats. Imagine she refused to follow a wild herd. After a period of puzzlement at the elephant's behavior, the group might choose to befriend her. They might attempt to train her for work—or better yet, they'd try to train one of her offspring, who'd be a better candidate for domestication, being familiar with the humans from birth.

The forest location of the work would give the Pagli-like elephant and her offspring free foraging time, which would also mean ample mating opportunities. What's more, if the displaced human group became sufficiently wealthy and powerful, based on its cultivation of forest resources, it might be able to pressure the hunter tribes deeper in the hills, and the farmers farther down the valley, to spare its elephants should they happen to wander into these other groups' areas. The displaced group might even have the ability to politically counteract further agricultural incursions into the forest.

In this scheme, then, such Pagli-like elephants, cooperating with displaced or "fugitive" human cultures, would have reasonably good odds of genetic survival—and of producing especially high-performing work elephants, like Air Singh, as progeny. The for-

est elephants who avoided humans would have decent but lower chances of genetic survival. And the elephants who refused to flee into the forest at all, or who wound up in royal stables or as combat elephants, would have very poor chances of genetic survival.

Thus, over time, the elephant species as a whole would gradually become more likely to possess traits conducive to the needs of the fugitive cultures. With each passing generation, the elephants would become more cooperative with these humans and more attuned to their practical needs. They would become more dexterous at handling logs, and more agile and ingenious at crossing seemingly uncrossable monsoon rivers with human passengers on their backs—more useful, then, in helping these communities keep the expanding agricultural kingdoms at arm's, or trunk's, length.

And unlike the domestication of cattle or other livestock, all this would take place without the humans ever implementing a plan for selective breeding. Humans would simply catch elephants in the forest, then train them for types of work that created wealth for the community and gave the elephants freedom to wander the forest at night. Other elephant lineages would peter out due to the activities of other human groups. Thus, even without human-imposed selective breeding, a process known to environmental historians as anthropogenic evolution—the evolutionary alteration of a nonhuman species through human activity—would occur.[49]

To follow the scheme further: eventually, a powerful agricultural kingdom might see in the nearby hills an abundance of highly trainable elephants and high-quality mahouts. The medieval Burmese kingdoms tended to bring Hkamti mahouts from the northern hills into the royal capital cities to train the valley Burmese in the art of mahoutship. The Burmese royal elephant minister's main assistants were traditionally Hkamti, and numerous words in the Burmese elephant command system are Hkamti.[50] Some kings, especially in India, came to value elephants to such an extent that they began to

set up forest preserves for the elephants—thus reinforcing the hill tribe mahouts' ability to discourage hunters and farmers from killing elephants. Such measures were also put into place, to a lesser degree, in many Southeast Asian kingdoms.[51] By contrast, such measures were never adopted in China, where the elephant has almost entirely disappeared over the past two millennia.[52]

Adding an extra layer to the dynamic, many kings in South and Southeast Asia likely found their elephants most useful not when these kings were actually in power and keeping their elephants in royal stables, as trophies of prestige or weapons of combat, but rather when the kings were overthrown and fleeing with their elephants into some forested refuge, to become bandit chiefs there—to become "Zomian." Medieval Asian chronicles and European sources often speak of such kingly escapes: leaders' absconding from lost battles or palace coups on elephant-back into the monsoon forest. Here too the elephants who bore the kings into the wilderness went from a poor situation for elephant reproduction to a good one.[53]

The African elephant faced an entirely different situation. By the first millennium, elephants had been pushed out of North Africa once and for all, primarily because the North African grasslands had turned to desert. Some North African elephants likely migrated south and interbred with the herds there.

In the sub-Saharan zone, humans were not destroying elephant habitat to anywhere near the same extent as in Asia. This meant that the non-Paglis of the African elephant species had at least as good a chance at survival as the Paglis. The complex dynamic in Asia—where dense agricultural kingdoms were rapidly erasing forestland, thus engendering a kind of unique socio-evolutionary "alliance" between elephants and human groups wishing to flee these expanding kingdoms—simply does not have an analog in Africa.

The African elephant thus didn't have to coevolve in tandem

with a set of human needs. This doesn't mean that African elephants wound up less intelligent than Asian elephants or less easy to train. The experiences of the combat elephant culture in North Africa in classical times suggest otherwise, as do the Belgian domestication experiments in the Congo during the colonial period (as do the experiences of modern elephant safari parks in Africa, and of circuses that became adept at training both elephant species for shows). It means, rather, that unlike the Asian elephant, the African elephant's physical and cognitive abilities never became organized around sustaining codependent work relationships with groups of human beings connected to the resources of the forest. And so rather than sustaining themselves over the millennia, cultures of elephant domestication in Africa occurred far more spasmodically than they did in Asia.

Chapter 5

BREAKABLE CHAINS

THE EPOCH OF THE "COMBAT ELEPHANT" ENDED TWO millennia ago around the Mediterranean and in Southwest Asia. In India and Southeast Asia, the use of combat elephants lasted much longer, up until just a few centuries ago. But the introduction of increasingly powerful guns and cannons to Indian and Southeast Asian warfare brought the era of the combat elephant to an end here as well.

Yet the story of domesticated elephants was not subsequently disentangled from stories of warfare among human beings. We've already seen how important elephants were to people fleeing Burma during World War II. And just as elephants can be instrumental in such escapes and rescues, or in furtive forest work, they also can be useful for rebel soldiers seeking to avoid stronger armies. This use of elephants—for the logistical needs of rebel armies—extends into surprisingly recent decades. Indeed, since World War II, such rebel forces as the Kachin Independence Army in northern Burma, the Karen National Liberation Army in eastern Burma, and the Vietcong in Vietnam have employed elephants for logistics—transporting supplies through the forest, hidden from the watchful eyes of aircraft flying overhead.[1]

As we saw in the case of Maggie—the elephant who ferried ref-

ugees across the Namyung River during World War II, then disappeared into the wild—"war elephants" who assist in emergency escapes or evasive maneuvering (as opposed to combat) can actually improve their ability to commingle and mate with wild forest herds. But this can bring about a conflict between the elephant's awakened desire to mate with a new herd and the urgency of the surrounding human situation. A complex negotiation between elephant and mahout can ensue. Several accounts—both historical and based on interviews I conducted with Trans-Patkai mahouts in 2015 and 2016—indicate that the fettering chain is a focus of this negotiation, in particular its capacity to be broken. The fettering chain, we'll remember, binds the elephant's two forelegs when he or she is roaming at night. The chain is slack enough that the elephant can walk through the forest at an unhurried pace, and tight enough to prevent the elephant from running.

Yet these chains often break. We saw this occur with Maggie in the forest country beyond the Namyung. Holt Hallett, a British civil engineer traveling with mahouts and their elephants through the Shan States in the nineteenth century, complained of the frequency with which the nighttime fetters failed. The travel party often became delayed as the mahouts wandered through the forest to locate their elephants.[2] Tenam, the long-haired Hkamti mahout at the Mithong logging area, told me that Air Singh sometimes breaks his chains. In the same region, an Adivasi mahout named Gudu reported the same thing with his elephant. And a former commander of an elephant brigade for the Kachin Independence Army remarked to me that his elephants would sometimes break their fettering chains, thus delaying the convoy.[3]

Why not use stronger chains? I asked.

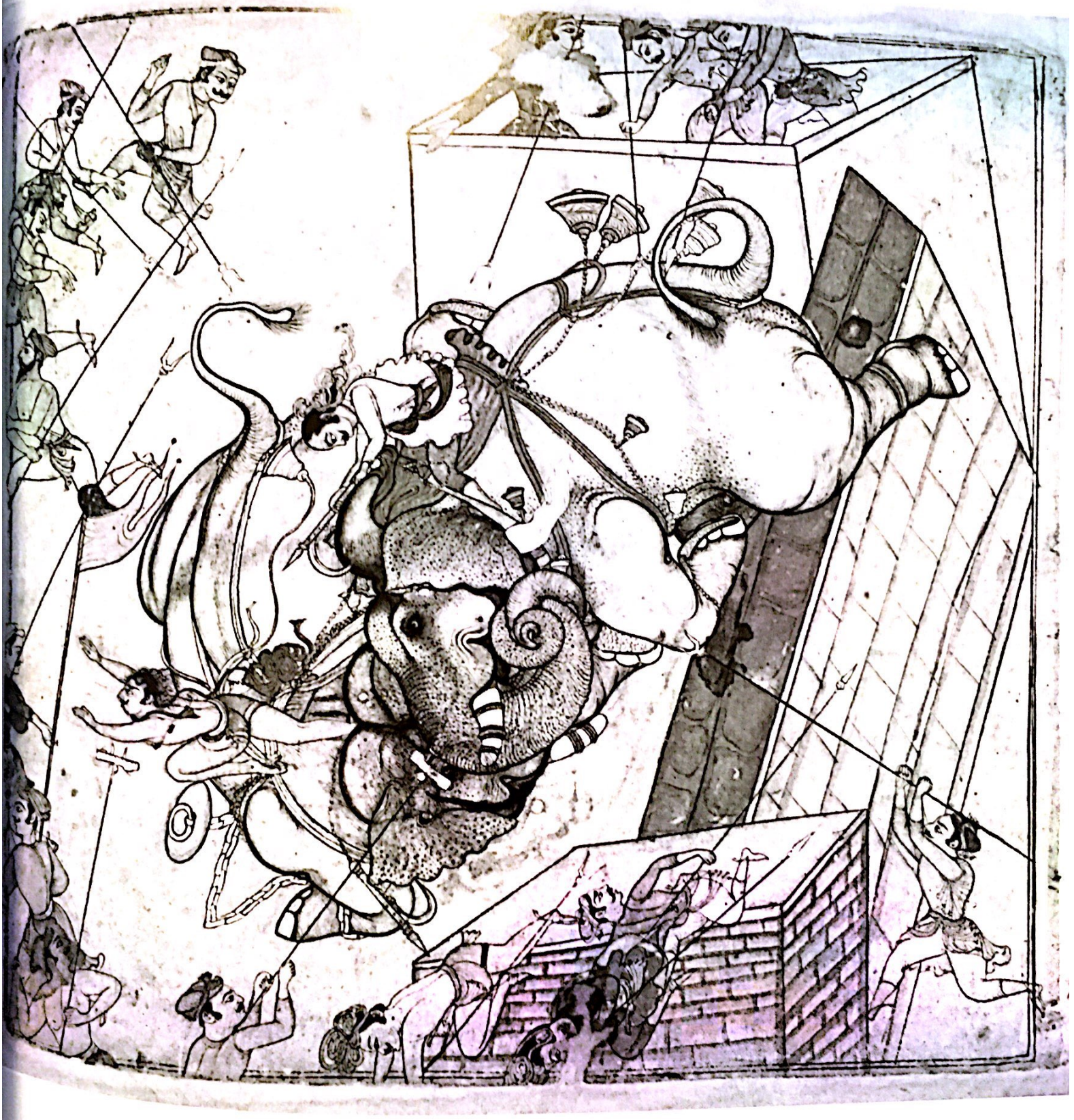
Nobody had a clear answer. I began to suspect that the breakability of the fettering chain acts as a kind of safety valve. At times, an elephant's urge to follow a wild herd becomes so great that the

giant might injure himself or herself itself while attempting to shuffle after them. Or due to pent-up spatial and psychological frustration, an elephant might pose a behavioral danger to the mahout the following morning. When the urge is very strong, the elephant exerts an extra amount of force against the fettering chain and—snap!—it breaks. This is inconvenient for the mahout the following morning, and it might be very inconvenient to the larger human operation the mahout is part of. But it helps to sustain the always-tricky balance between the humans' and the work elephants' needs.

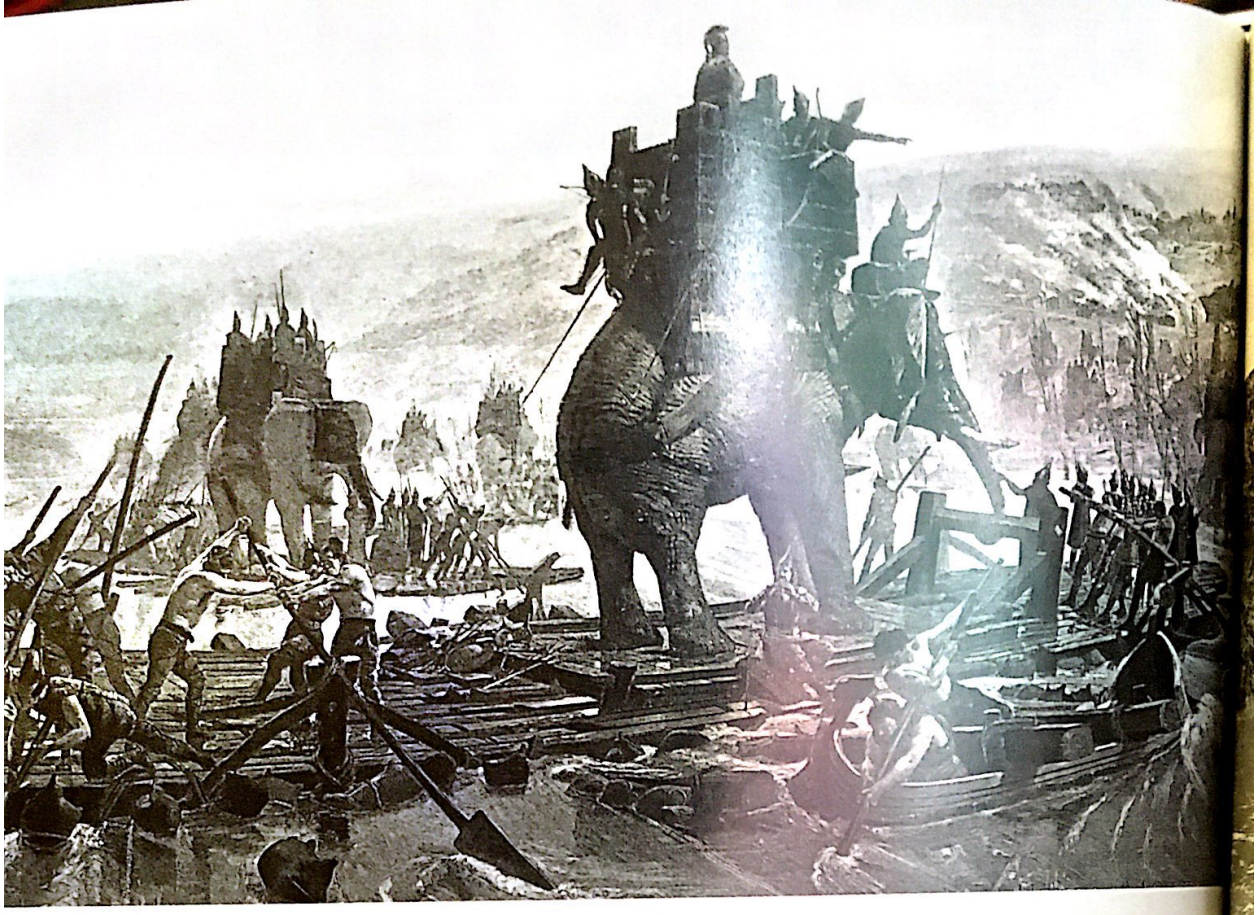
That said, in emergency situations, the stakes for the humans might be so great that this inconvenience becomes intolerable to the humans. In such moments, the give-and-take between elephant and mahout can become far more complex. A story from the Vietcong side of the Vietnam War provides a rare window into this sort of negotiation. The story is about a Vietnamese mahout, Xuan Thieu, and his elephant, Pak Chan (which seems to mean, simply, "Pack Elephant").[4]

Xuan was from a forested area of former French Indochina—his account does not say exactly where, but it seems to be someplace near the Truong Son Mountains. During the war, he was assigned to work on the Ho Chi Minh Trail, the Vietcong's long logistical lifeline. The path wound for hundreds of miles through the rainforest, hidden beneath the cover of leaves, from North to South Vietnam. When Xuan first reported to the trail, he was recruited by an elephant convoy commander, Kien. Xuan was to become a mahout.[5]

Xuan was not from a village with elephants or mahouts, and at first the assignment worried him. "I found all sorts of reasons not to accept the new job," Xuan would later write. "Recalling all this I am still now ashamed of my first reaction." He regarded the mahouts of the Truong Son as something of an alien group. Everyone bowed to them in respect, but nonetheless their life was

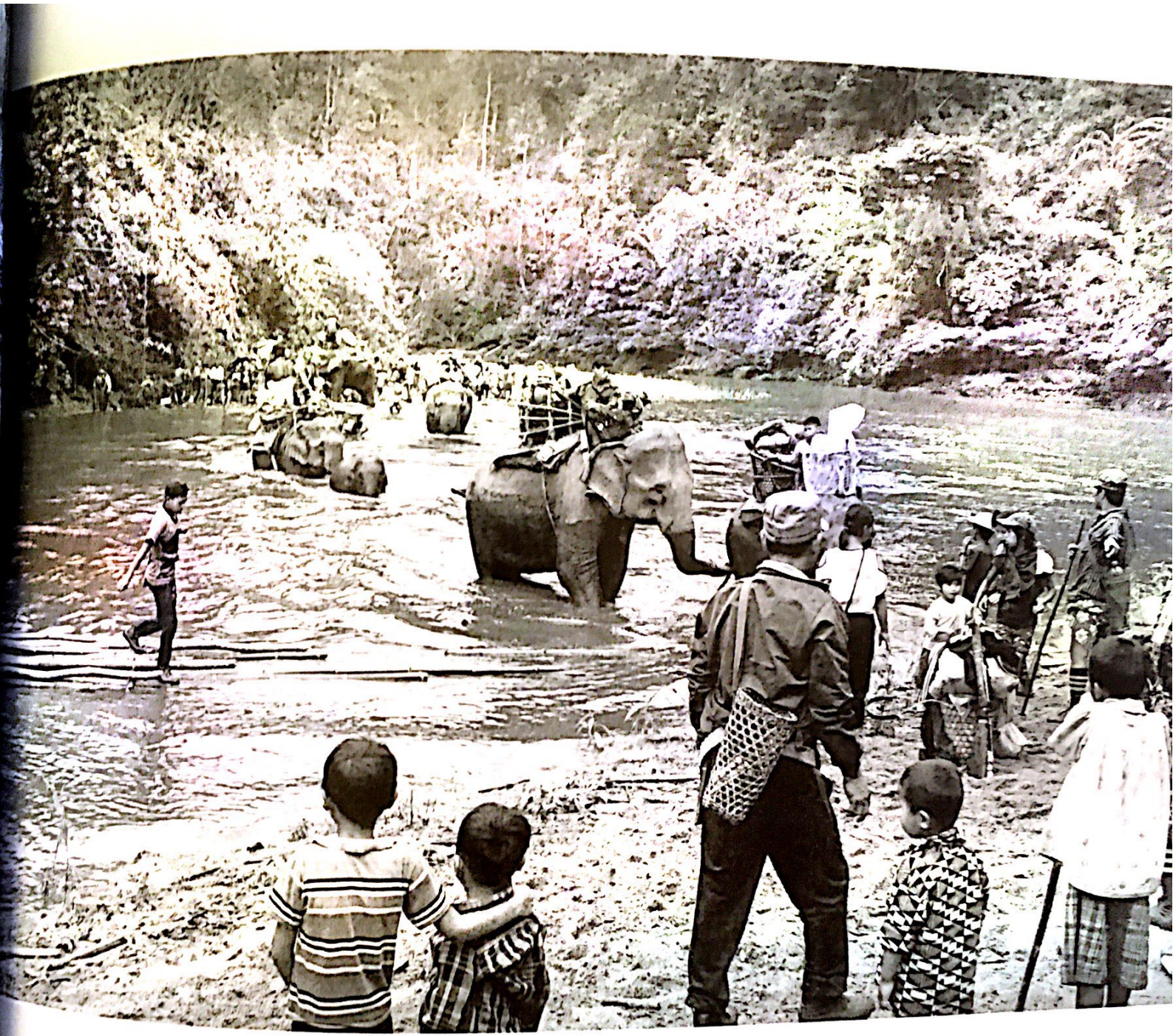


Elephant combat, drawing by unknown Indian artist, seventeenth century. *Philadelphia Museum of Art, 125th Anniversary Acquisition. Alvin O. Bellak Collection.*



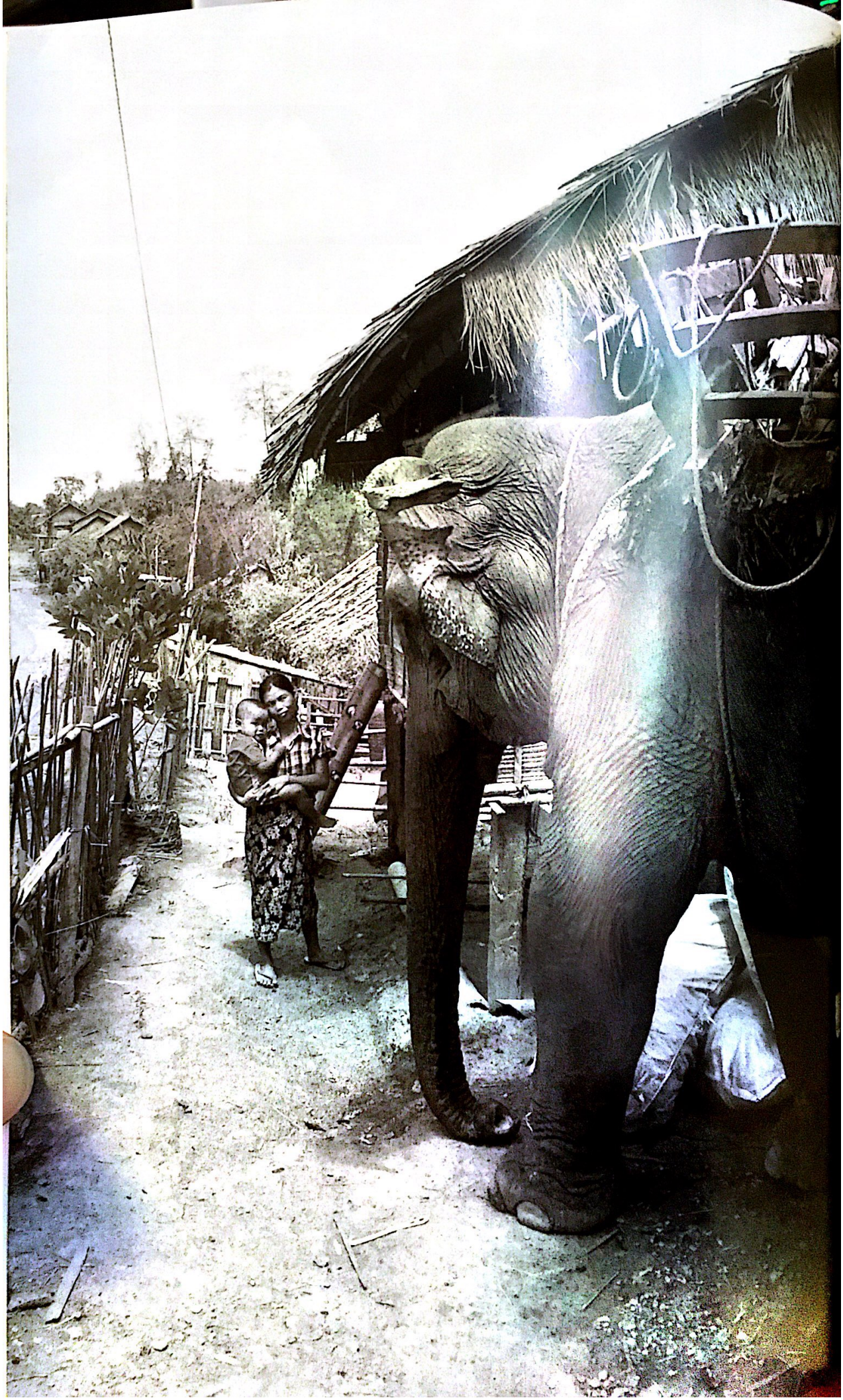
Hannibal Crossing the Rhone River by Henri-Paul Motte, 1878, British Museum. The war elephants went over on rafts (though likely they were not carrying soldiers during the crossing, as they are in Motte's dramatization).

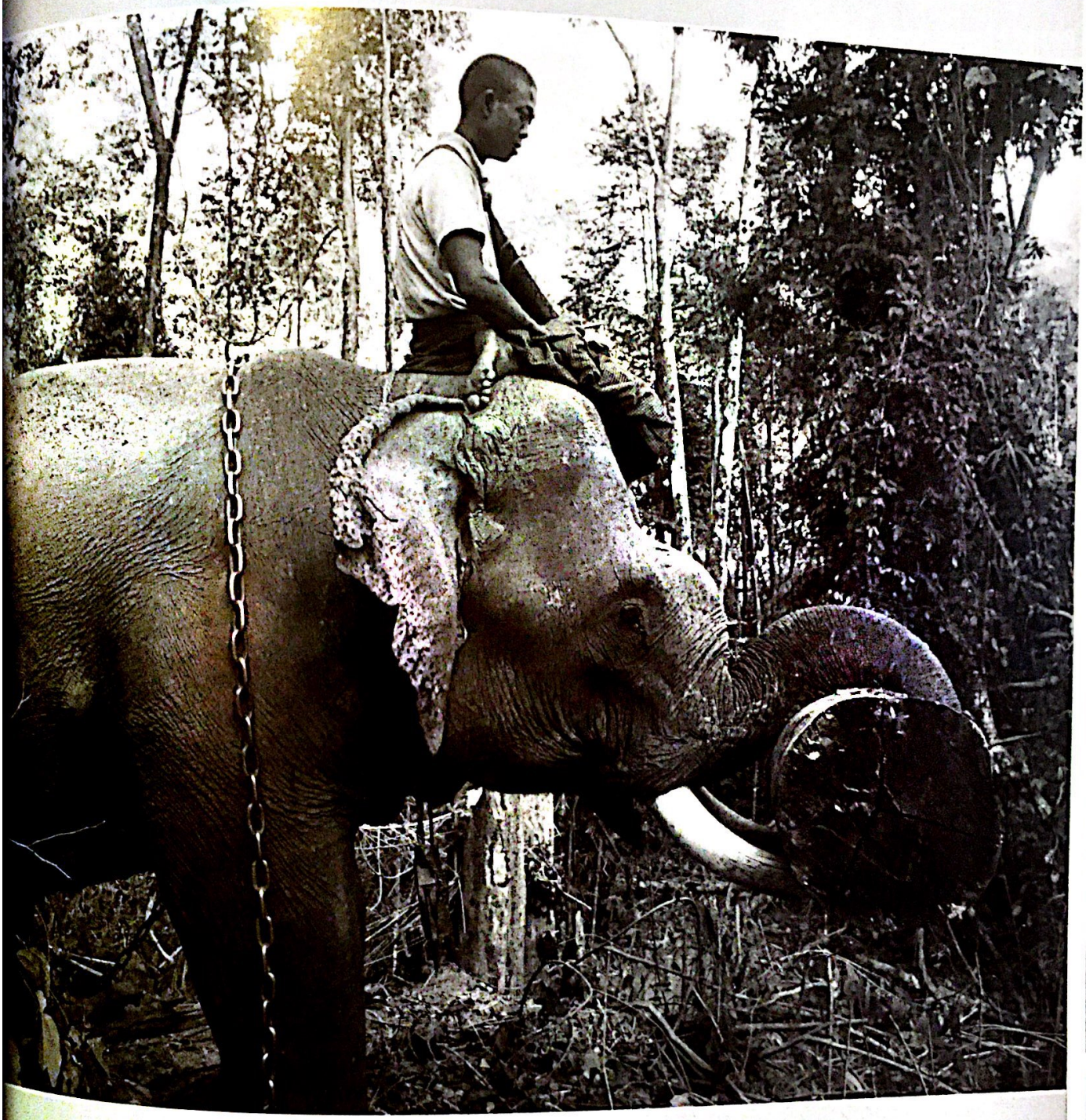
Transport elephant, North Vietnam, 1971. *Photo by Doan Cong Tinh.*



Elephants carry possessions of Kachin refugees fleeing violence in Kachin State's Hukawng Valley, May 2018. The group is crossing the Mau Hka (river) near the village of Awng Lawt.

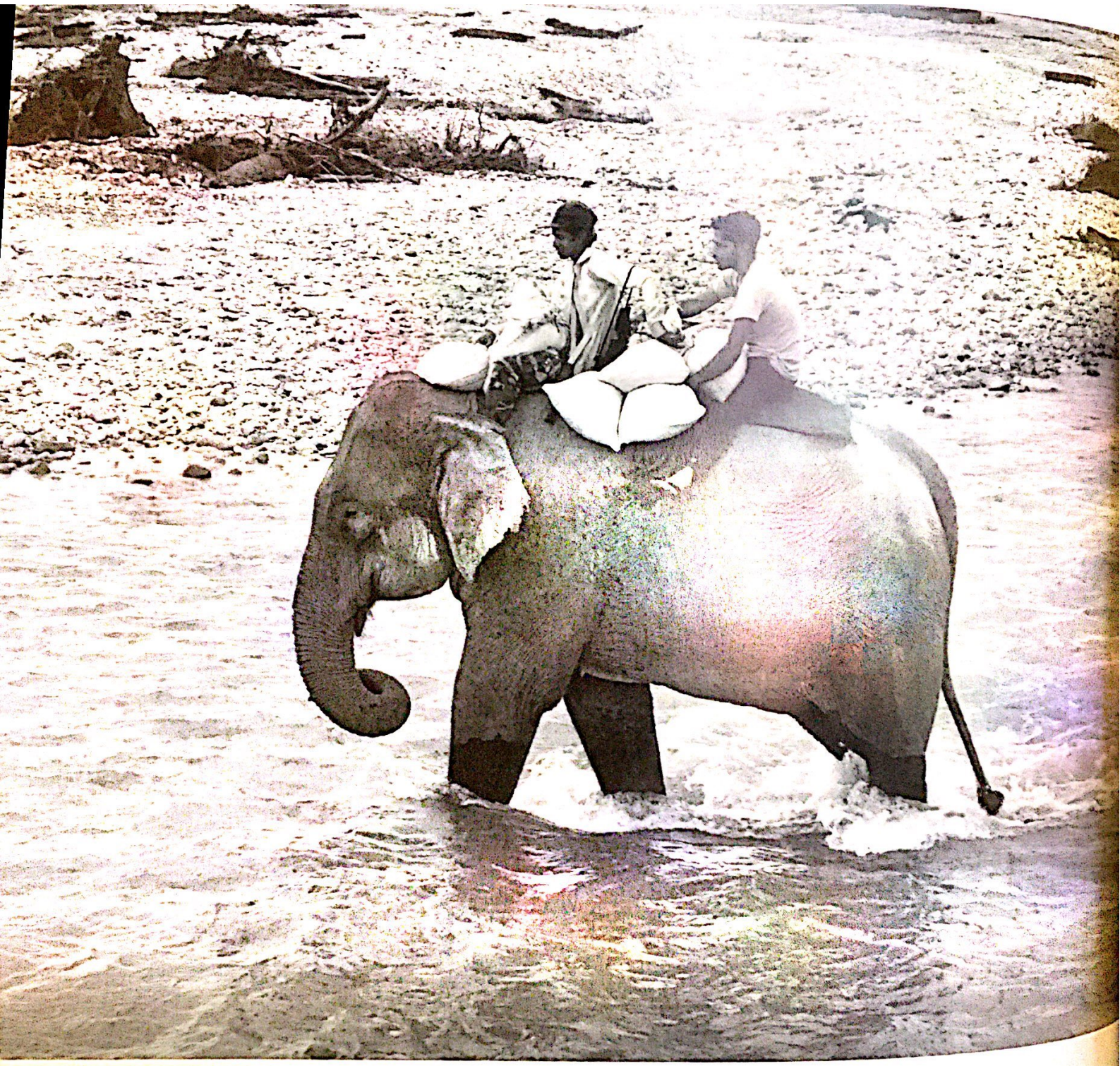
Photo by Jerome Palawng Awng Lat.



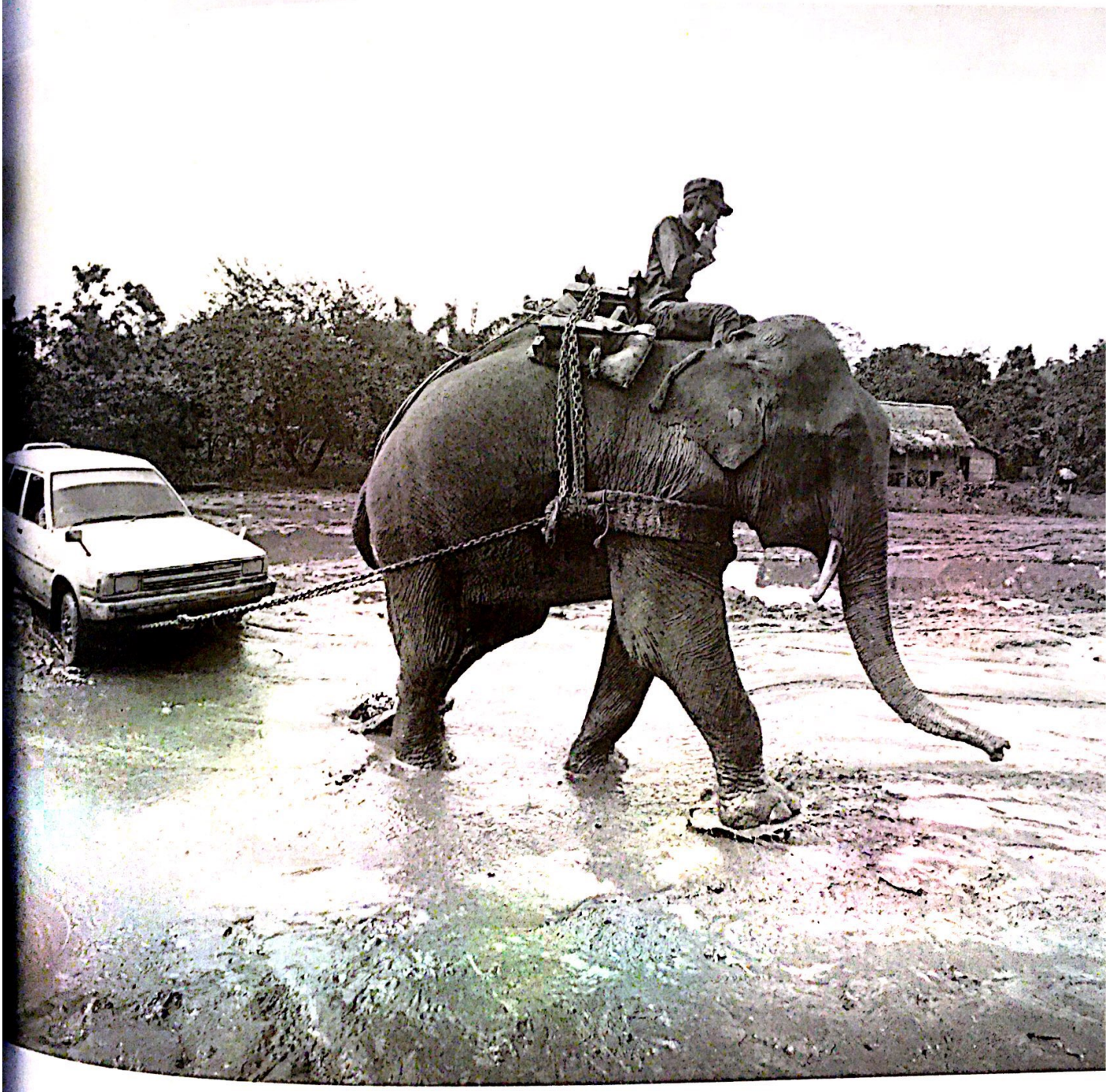


Elephant carrying a log with his tusks, central Burma, 2016.
Photo by Jacob Shell.

FACING PAGE An elephant at a mahout family's house, elephant logging village, central Burma, 2013.
Photo by Jacob Shell.

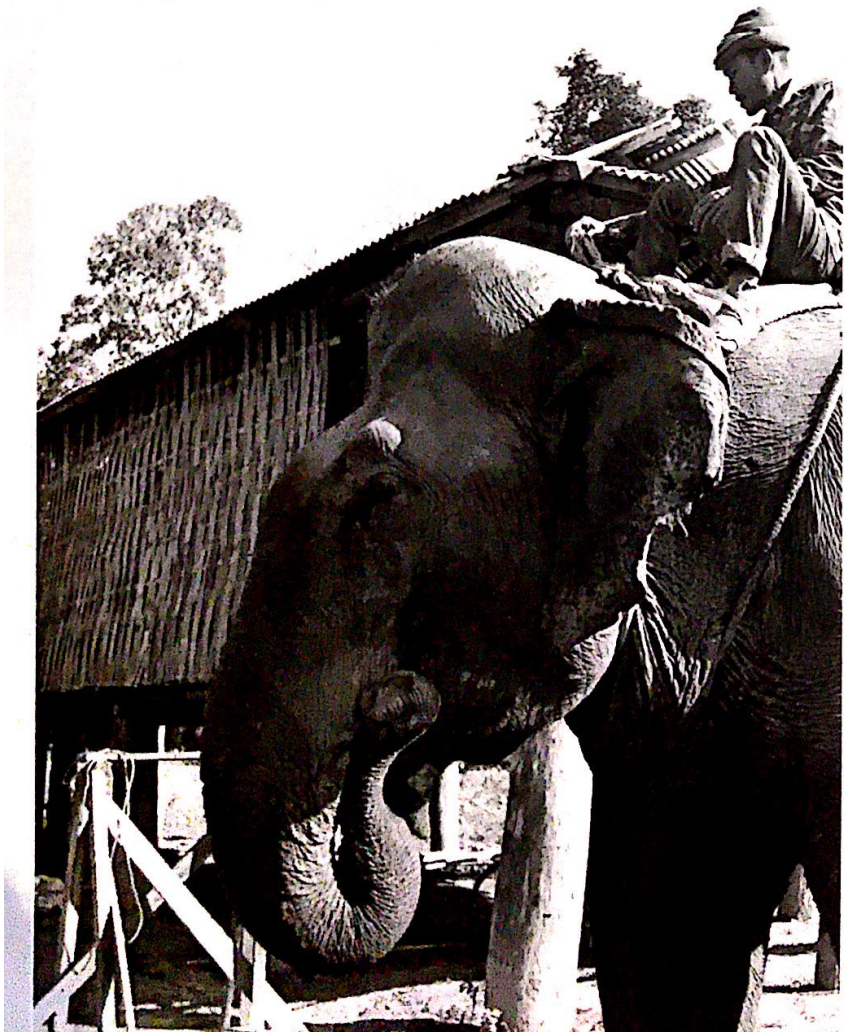


Burmay-Moti the elephant and Pradip the mahout, with passenger and bags of rice, Sissiri River, Arunachal Pradesh, India, 2017.
Photo by Jacob Shell.



An elephant pulls a car through the mud in the Hpakant region of Kachin State, northern Burma, c. 2010.
Photo by Hkun Lat.

An elephant drags a sled full of bamboo at an elephant logging village in central Burma, 2013.
Photo by Jacob Shell.



Elephant and mahout in the Trans-Patkai region, 2016.
Photo by Jacob Shell.

secretive. He was under the impression that mahouts were banned from marriage. When pressed to join the brigade, Xuan blushed and insisted he was already married, so he couldn't possibly take the assignment.

The superior officer of the elephant brigade, Kien, would have none of it. "I am married too," Kien replied. "Have you ever seen the sea? You haven't? I come from the sea. All year round I worked in the salt marshes. I was used to the sun, sea air and wind, not to the forest like you." Kien, a maritimer, wanted Xuan for his forest skills.

And with that, Kien presented Xuan with Pak Chan the elephant. He demonstrated the command terms, mostly Tai-derived, and Xuan was astonished to see that the elephant understood Kien's intentions—as if they were using a special language of their own. Pak Chan eyed the new recruit and waved his big ears.[6]

Despite his initial misgivings, Xuan became very close with Pak Chan. The elephant was mischievous but also strong and intelligent: a potential lead elephant of the convoy, if not for his streak of disobedience and troublemaking. Xuan recalled an episode on the southern front where Kien took his own elephant, Pak Ve, across the Mekong on a ferry.

> When my turn came Pak Chan seemed reluctant to get onto the ferry. I urged him on. He leisurely put his trunk on the plank to test his strength. I said to myself: "What strange behavior! Pak Ve has already crossed the ferry, you must follow suit." I let him carry on. *Crack!* Unfortunately, he broke the plank in two.

Pak Chan seemed to have done this intentionally, placing his weight right where the plank was weakest. Annoyed, the ferrymen went ashore to look for another plank. Pak Chan stood by, carelessly watching the boats go by along the river. The ferrymen fastened a

new plank in place. *Crack!* The elephant broke this one too. Pak Chan and Xuan wound up swimming across.[7]

Xuan recalls another story, one that illustrates the complex relationship between elephant and soldier-mahout along the trail. It was later in the war. Kien's elephant Pak Ve had died of pneumonia, and Pak Chan had replaced Pak Ve as the lead elephant of the convoy. Though he was the best elephant on the team, he still possessed a certain flair for mischief. One day he walked through the cassava fields of a tribal minority people in the village of Ta Noi. Xuan decided to punish Pak Chan by chaining him to a barkless ironwood tree. The villagers informed the brigade mahouts that a herd of wild elephants was nearby, so the mahouts decided to chain the other convoy elephants too for the night, to avoid trouble with the wild herd.

But Pak Chan broke loose! He found a weakness in one of those faulty fettering chains that so often figure in forest mahouts' tales. The next morning Xuan and several other mahouts looked for Pak Chan. They knew it would be easy to find him if he'd simply wandered off in search of food, and much harder if he'd joined a wild herd. Pak Chan was a male in his prime. But domestic males, unlike domestic females, tended not to join wild herds. More typically they mated with a female and then returned to their mahouts. So even in this scenario, there was hope of retrieving Pak Chan. Looking at their missing elephant's footprints, Xuan and the other mahouts knew that he was after a mate.

At last they came upon the elephant, deep in the forest—and sure enough, he was there with a wild female: "Playfully, he was twisting his trunk with that of his mate." The mahouts hid behind some trees. One of them made a birdcall to get the elephant pair's attention, and the sound echoed across the ravine. "Pak Chan let loose of his mate, raised his head to listen. He looked perplexed."

Xuan cupped his hands and yelled, "Pak . . . Chan! Pak . . . Chan!"

The gray giant looked "stunned, like a criminal caught red handed, his trunk and ears hanging down."

The female, alarmed, darted into the woods. Pak Chan hesitated, and then followed after her. The two animals crashed through the woods away from the humans. This initial attempt to retrieve the lead elephant seemed to have backfired.

The mahouts stopped to discuss what to do. One of them proposed killing the female, the obvious source of Pak Chan's recalcitrance. The rest of the circle rejected the idea: "He would probably go wild or grow listless from missing her." Pak Chan's feelings and desires had to be taken into consideration. Discussing the matter further, the mahouts determined that they needed to frighten the wild female into the forest without hurting her, but also somehow warn Pak Chan of their resolve not to let him follow her again.

The next day at around noon they caught up with the pair, who were romancing each other ("romping," Xuan writes) by a brook. The mahouts waited quietly. Pak Chan and the female finished the activity, and Pak Chan wandered off in search of leaves. This was Xuan's chance. He approached his elephant again and murmured, "Pak . . . Chan . . ."

Pak Chan stopped eating and peered at Xuan. At this moment the other mahouts fired their guns into the air, and the female raced off into the forest. Pak Chan stood still, once again uncertain what to do.

Xuan walked straight up to him. The elephant "looked straight at me," Xuan remembered. "His eyes were fierce and tense under the glittering sun." The other mahouts pointed their rifles, expecting the worst. But Xuan, trusting his elephant, waved them off and stepped closer. "Would Pak Chan be so reckless as to snatch me and throw me down? Frankly speaking, I had never imagined such

a situation. On seeing him, I had the feeling he was something of a prodigal son and my anger was overwhelmed by my affection for him. As for him, I was confident that he wouldn't forget so quickly our times together."

Pak Chan looked bashful and tried to avoid Xuan's eyes. "As I caressed his rough trunk I felt his skin twitch with emotion and heavy tears fall on my cheek and shoulder. He looked sad and depressed." The elephant let the group of mahouts climb onto his back, Xuan onto his neck.

"Pei!" said Xuan, meaning "Go." The mahouts began to relax and laugh together, and hearing this, Pak Chan's mood improved. The great animal "jerked up his trunk, looking far ahead, and took big strides forward."[8]

This affecting story exemplifies the complexities of the mahout-elephant bond in wartime. Xuan perhaps intuited that the chance to mate with this amorous wild female was one of the few benefits Pak Chan could expect out of his service in the terrible conditions of the war. To kill the female, who was possibly already carrying the kernel of Pak Chan's future offspring, was therefore out of the question. Nonetheless, from the human perspective, the two elephants' "honeymoon" period had to come to an end, for Pak Chan was needed to bring supplies through the forest to soldiers at the front.

And what of Pak Chan's side of the negotiation—why didn't he ultimately follow the female? Several deliberations were perhaps at play. One, he likely anticipated that the wild herd wouldn't easily accept him, since he was a male in his prime. Two, Xuan possibly managed to confront him at a brief moment of postcoital disinterest in the wild female. Three, perhaps at some level, Pak Chan grasped that though his odds of surviving this war were bleak, they were somewhat better with Xuan at his side—and that anyway, marching up and down the Ho Chi Minh Trail gave him oppor-

tunity to mate with females in different wild herds. If these mates then headed away from the fighting, toward the west, the odds of his offspring surviving would go up.

As the war progressed, Pak Chan became one of the most capable transport elephants along the Ho Chi Minh Trail. His skill wasn't just in moving the war matériel—the food, clothes, medicine, ammunition, fuel barrels, tires, and so on—but in helping the platoon detect danger ahead and stay clear of it. With his huge, sensitive ears, he could hear all kinds of noises from afar. He knew that the sound of propellers in the wind meant he should dash under the forest canopy, for this was the sound of a reconnaissance plane. The sound of a jet engine meant he had to get to a ravine for cover as quickly as possible, for a jet meant bombs or napalm. He also knew that the sound of a truck engine meant that no sudden evasive action was needed at all, for this was almost certainly the motor vehicle of a friendly battalion. The other elephants would imitate Pak Chan, and the elephant corps remained relatively safe.[9]

ANOTHER STORY comes to us from the Ho Chi Minh Trail. A Vietcong platoon was crossing through the rainforest along the base of the Truong Son Mountains. Like many platoons along this route, they had with them a few elephants to carry heavy baggage. But no sooner had they left the camp than one of their elephants became trapped in quicksand.

The soldiers tried for two hours to save the unhappy creature. It was suggested that the elephant should be shot, so the platoon could take its tusks and distribute the meat to the surrounding villages. "But," one soldier recalled later, "we felt we couldn't do that: these elephants had done a lot for the regiment."

Seeing the huge animal sink, sorrowfully, deeper and deeper into

the mire, the soldiers lost hope of saving it. But the commander of the unit, a man named Thuan, refused to leave the elephant to die. He ordered his men to cut trees down and drag them into the swamp. Watching them, "the elephant quickly understood: it grabbed hold of the logs with its forelegs and trunk and gradually pulled itself from the mud and out of danger." The soldiers were overjoyed and set off immediately. Later in their journey, the platoon crossed through an open area, and this same commander, attuned to the value of the elephants for making hidden movements across the dangerous landscape, told the soldiers to "hide behind the large ears of their elephants."[10]

Stories like this one, as well as the story of Pak Chan and Xuan, give us a sense of the strong culture of forest mahoutship that existed in the Vietnamese highlands up through the war—a culture that is, sadly, all but extinct in that region today. The elephant-domesticating hill peoples in the vicinity of the Truong Son are in some ways analogous to mahouts we've met in the Trans-Patkai region, or to the Karens along the Thai-Burmese border. The Truong Son mahouts mostly hailed from a diffuse group loosely referred to as the Kha people, a kind of ethnonymic blanket term. In effect a set of "fugitive" groups, the Khas of the Truong Son had been driven from the Annam and Mekong coastal plains by warfare around 100 B.C. Retreating into the mountains, they ultimately learned to practice swidden agriculture and to catch and ride elephants. Kha elephant skills persisted across the generations. Even today, a Kha group in Laos called the Khamus domesticates elephants.[11]

An unusual piece of writing from Vietnam during the 1970s, *The Story of a Mahout and His War Elephant*, describes Kha resistance on elephant-back during the First Indochinese War, against the French, following the conclusion of World War II. The book is peculiar in that it is semifictional, yet it was clearly written by

someone with extensive knowledge of Kha elephant domesticating cultures in the Truong Son Mountains. It's unclear how the book's author, Vu Hung, came by this knowledge. The level of detail is striking. Kha elephant command terms (most with Tai etymology) are quoted throughout the text. Hung also describes the Kha training and initiation rituals, for both elephants and mahouts. In an early scene in the book, the old mahouts of an elephant village test the boy Dik, a teenage mahout-in-training and the book's main protagonist, in his knowledge of elephants' diseases. Dik is brought a sickly elephant and asked to diagnose what's wrong. After studying the animal, Dik determines that the elephant has swallowed several jungle leeches. He mixes some medicinal wild herbs with fruit and pours a jar of the remedy down the elephant's throat. The elephant is cured![12] Elsewhere in the book, Dik must desensitize his elephant, Lumluong, to gunfire so that the tusker can tolerate passing by battlefields. This account too appears to be based on actual wartime elephant training.[13]

The book is also noteworthy for the Exodus-like narrative themes and imagery that appear throughout—curiously similar to S. Farrant Russell's *Muddy Exodus*, where Russell tells his own story of escaping from Burma during World War II, riding Maggie the elephant. When war with the French breaks out, the elders of Dik's village decide it will be best to flee into the hills. The villagers evacuate, their possessions carried by elephants ridden by "grim and silent" mahouts. Hung continues: "Neither did the elephants show any unwillingness to take the unusually heavy loads. They seemed to know something was amiss. . . . The exodus began."[14]

The fleeing villagers become lost, cut off and disoriented by new water channels opened up by monsoon storms. Their elephants crash a path through the unexpected barriers. In the animals' wake, "the refugees trudged on," a crossing recalling the ancient Hebrews' passage across the Red Sea. As a "promised land" takes

form in the Kha refugees' minds, they stumble through the territories of hostile hunter-gatherer tribes deep in the hills, a kind of Wilderness of Zin.[15]

Here the thematic parallels with the Book of Exodus break off. Dik decides to stop fleeing, and he and his elephant Lumluong return to the lowlands, to join a liberation army fighting the French. Lumluong becomes a transport elephant, much like Pak Chan. The rest of Dik's village proceeds with their elephants "for where the sun was setting"—likely to the westernmost forests of former French Indochina, in Sayaboury province of modern-day Laos. Today Sayaboury contains Laos's largest concentration of domesticated elephants. Though semifictional, Vu Hung's tale gives us a sense of two different migrations of Vietnamese domesticated elephants during the period of anticolonial struggle: either eastward to the coast, to supply the liberation soldiers, or westward to jungle refuges, in flight from the war.

Very recently, in 2018, an incident took place that echoes this narrative. The incident occurred not in Vietnam but in northern Burma. Here, fighting between the Kachin rebel army and the Burmese central military, or Tatmadaw, reached the small forest village of Awng Lawt, which is nestled deep in the Hukawng Valley. In May, hundreds of villagers fled the violence, seeking a displaced persons camp in Tanai. They took their elephants with them, about ten giants overall. The large refugee party marched through the jungle and came upon a river called the Mau Hka. Some had smartphones with them, and their astonishing photographs and video footage show the elephants carrying the elderly, the young, and many people's possessions across the river and through the surrounding forest.[16] Like Vu Hung's story, and like the stories of the elephant-mounted rescues during World War II, this episode conveys the significance elephants can hold for people in flight.

NEAR THE END of the conflict with America, Xuan Thieu the Vietcong mahout was still working along the Ho Chi Minh Trail. One day he thought of his old commander and mentor, Kien, the maritimer who had first recruited him to the elephant brigade. He remembered how Kien had brushed aside Xuan's initial fears of becoming a mahout. Over the ensuing years, Pak Chan the elephant had proven Kien right. Now, if Xuan were asked to be transferred to a mechanized transport unit or a boat transport unit, he knew he would refuse, so profound had his bond with the brigade elephants grown.

Xuan wrote a letter to his old commander, who had long since left for the coast. He wrote of his many adventures with Pak Chan along the Trail. "Each animal is special and has his own character," the mahout reflected.

"Dear Brother Kien," Xuan continued, "this is the sad news I had to tell you": Pak Chan was dead. Nobody knew the cause for sure—maybe an old battle wound, or maybe something else. "For me, nothing can replace my life as a mahout with our elephants, and I hope I shall never have to part with them," wrote Xuan. "We transport goods to the front by whatever means available, primitive or modern, but ours has a life and feeling of its own."[17]

The American war in Vietnam was calamitous for the elephant population there, doing vastly more damage than World War II had done to the elephants of Burma and northeastern India. During World War II, it had not occurred to either the Allied or the Japanese side to declare war on the forest itself, whereas the American strategy in Vietnam hinged upon the use of napalm and defoliating agents like Agent Orange to eradicate forest cover. The ecological damage was not a side effect but the very goal.

At least during certain stages of the war, the U.S. air command (like the British Royal Air Force during World War II) appears to have had a policy of specifically targeting elephants, with gunfire or rockets. Fred Locke, a former helicopter pilot, recalled being under order to fire on elephants, on the grounds that they might be with the Vietcong. But the South Vietnamese army had elephants of its own, and during one briefing a commanding officer "casually admonished the chopper pilots to be sure not to ask for air strikes against friendly elephants." Locke, a flight leader, inquired how they were supposed to tell the "friendly elephants from the enemy ones." The briefer explained: "the 'enemy' elephants would have their bellies tinged red from the clay mud of The Trail," that is, the Ho Chi Minh Trail. As Locke recalled, in subsequent flights, "I'll be doggone if we didn't see a whole bunch of elephants and, they did. . . . The 'pink elephants': there they were, right in front of me!"[18]

Robert Mason, another American helicopter pilot, recalled overhearing a radio conversation where a U.S. gunship ordered a vehicle code-named Raven Six (likely an armed helicopter) to shoot elephants. The bullets weren't effective, so the gunship ordered Raven Six to use rockets instead. Mason and his copilot listened to this radio exchange dumbfounded. "Elephants?" Mason wondered. "We're killing fucking elephants?" Then they heard Raven Six say someone should "go down and get the tusks." "I'm sick," Mason's copilot said, listening to this exchange. "Killing elephants is like blasting your grandmother."

Like the British Royal Air Force pilots who protested orders to target elephants in the Burma theater, many American soldiers considered such directives beyond the pale. Back at the company's camp, Mason recalled, there was "general outrage" that the ivory had indeed been recovered from the jungle and delivered to the division headquarters.[19]

The total number of elephants purposefully killed in air strikes is

not clear. The elephant conservationist Richard Lair has noted that in one town, Nhan Hoa of Gia Lai province, more than twenty-eight local work elephants were killed from the air. In another village, Dak Lak, many owners fled with their elephants to Cambodia to avoid being strafed and bombed.

The use of forest-destroying weaponry, the scattering of land mines, and the U.S. air command's policy of purposefully targeting elephants—all this combined to effectively eradicate Vietnam's elephant population. Elephants in the country before the war seem to have numbered in the thousands. Afterward, the number had plummeted to just a few hundred. Today the number seems to be lower still, due to deforestation caused by postwar economic development.[20]

And yet there might be another way to look at the loss of elephants in Vietnam. Just as the collapse in the number of registered logging elephants in Burma during World War II likely reflected a partial exodus of domestic elephants into the wild, it is also possible that a significant number of elephants escaped Vietnam and went into the highlands of Laos—following the path of those displaced Kha mahouts in Vu Hung's tale. Some aspects of the present-day geography of elephants in former French Indochina lend credibility to this theory. The elephant population of Laos is estimated at somewhere between 1,000 and 1,500, some two-thirds of which are domesticated. Much of the domesticated population is concentrated in the far west of the country, in Sayaboury, likely as the result of two distinct recent mass movements of wild and domestic elephants: out of northern Thailand, as agricultural development there has erased forestland, and from Vietnam, fleeing fighting and deforestation.[21] So perhaps somewhere in Sayaboury, Pak Chan's children roam the forest.

It is geographically unfortunate that no further forest corridor links Laos's Sayaboury Province, with its significant elephant pop-

ulation, with the Kachin Hills and the Trans-Patkai region, where there are even more elephants. Such a link would enable a much-needed genetic transfer and diversification within the species. Blocking the way is the Shan Plateau. In Sayaboury and the Trans-Patkai, the coalition of human groups dependent on the forest has thus far counteracted the deforestation pressures associated with agricultural development. But the forests in the Shan area aren't as abundant in valuable timbers, and there's less bamboo. The diminished severity of monsoon flooding here also tends to make it attractive for irrigation-based farming, which entails permanent clearance of forestland.[22] All this swings power away from forest-based economies and toward paddy farming and regularized agriculture. Though the geographic distinction between the regions is subtle, and the Shan Plateau still has plenty of remaining forest cover, during the past half-century the balance here has "tipped" in the direction of local farming interests, rather than local forest interests. By contrast, the Trans-Patkai and Sayaboury remain, for now, forest-centric economies with large numbers of elephants.