OLAUS MAGNUS

A Description of the Northern Peoples 1555

VOLUME II

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OLAUS MAGNUS

Historia de Gentibus Septentrionalibus

Romæ 1555

Description of the Northern Peoples

Rome 1555

VOLUME II

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CONTENTS

BOOK SIX OF OLAUS MAGNUS THE GOTH, ARCHBISHOP OF UPPSALA, ON MINES AND METALS

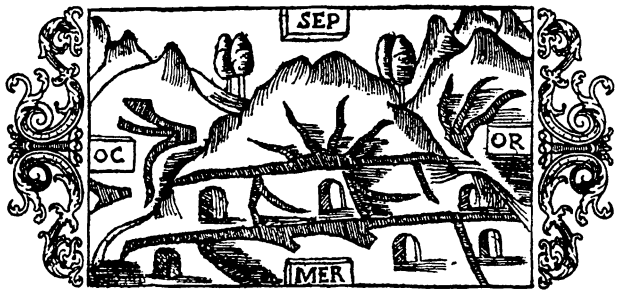
PREFACE

THE hardy, indomitable race of northern warriors who live in the ore-bearing mountains of Svealand and Götaland may justifiably be compared to the giants and champions because of their remarkable fierceness of mind and body, their boldness, and also the extremely harsh occupations in which they engage. In a survey of northern matters they deserve to have their place immediately after those giants and champions, but to precede the group who are to be treated next, because of the different kinds of weapons used by these two classes of men. For this reason I shall not keep to the arrangement and plan of other writers, and must introduce something here on the subject of minerals; hence a basis may be obtained which will enable me to set out with greater clarity the conflicts that will follow.[1]

The mountains, then, are high, but for the most part barren and bare; almost nothing is produced in them for the benefit and preservation of those who dwell there except a limitless supply of valuable metals.[2] So these folk are rich enough, well-stocked in all the necessaries of life, and perhaps, if they so wish, even able to obtain from elsewhere commodities over and above their needs, certainly to such an extent that they may offer a united and vigorous defence against any violent attack on these gifts of Nature.[3] For they are a fierce race of men who will yield to none of the severities of war, whether these be from any harshness of the elements or from the threats of the foe, as must be described later when I write of wars on land. A foreign witness, Albert Krantz, relates in full how gallantly and spiritedly those men called Dalecarlians, marching in line, are accustomed to menace their enemy, when he tells of the great and marvellous feats accomplished in wars waged against the kings of Denmark, especially Christian I and King Hans.[4] Indeed, even King Christian II himself admits with what force and fury he

Christian II, a very cruel Danish king

was thrust out of the kingdoms of Sweden and Götaland when King Gustav led that people in 1521,[5] and acknowledges that he had been the victim of the worst possible advice in his ill-fated attempt. The dreadful, monstrous cruelty which was committed during his reign in the lands of the North will be set out with complete accuracy in its proper place below according to my own eye-witness report; for I seem to have been preserved to see such fearful sights among my own people.[6]



CHAPTER ONE

On mines and how they are discovered

Mines

THE mines in northern lands are very numerous, big, varied, and rich. Because huge numbers of them are sited in valleys and mountains, many of the tunnels often follow closely adjacent courses. They are large, too, being inexhaustible and spacious, and are found both in Upper Sweden and in Götaland, and in the parts of Värmland near the Norwegian borders. Again they are varied because they yield silver, copper, steel, and the choicest iron,[1] and they are also rich, as I shall describe later, since a good part of the king's revenue or tribute will be drawn from mines of this kind.[2]

Revenue of the treasury

Signs by which mines are to be found

Although there is a vast number of such mountains and mines in the realms I have mentioned, Nature gives indicative signs whereby fresh mines are always presenting themselves to the prospectors, especially where the mountains are rounded at the summit and in this navel or rounded part are not split or broken up, and where the snow in winter melts because of the sulphurous reek. But if the mountains are struck by lightning at the peak or side or foot, they display veins of silver glittering in the clefts,[3] enticing avaricious folk and firing them more and more with an insatiable fever of greed. Regardless of danger, they hollow out the rocks and penetrate into the bowels of the mountain, where the internal veins appear similar to the separate organs in a man's body, some running upwards, some downwards, some to the left, others to the right. The minerals associated with them are the more brilliant, the purer the stone or marble with which they have come into

Avaricious

Similarity

being. The lines of ore which by nature point towards the west and project farther out towards the south and north are very rich and valuable,[4] for the appearance of these veins is exactly like that of men in glittering armour properly drawn up in their ranks. The pleasure this gives, added to its usefulness, affords no little comfort to those who toil at them and to their owners.

Signs of the best minerals

CHAPTER TWO

Where veins of minerals lie

FURTHERMORE, lodes which run together from the east and south towards the north-west are said to be more excellent, but this is not so with those that lead towards other points of the compass. For in the lands beneath the North Pole there is a quicker composition of metals under the influence of the rising and the noonday sun. There are also some veins which are called 'hanging', others 'lying'. The hanging veins form a covering as they run from above. The lying ones are embedded in flat places and gain enlargement and goodness from the way they issue from the earth.[1] There are also veins that slant upwards and downwards, deriving from all the others I have mentioned, as Seneca tells us in Bk III of his *Investigations of Nature*. He says that just as there exist in us not only blood but many kinds of fluids, some indeed that are essential, but others tainted and thick, such as the marrow in bones, the brains in the head, and tears in the eyes, so in the earth there are many liquids which quickly harden. Hence comes all metal-producing earth, from which the greed of men seeks gold and silver. But, just as in our bodies, so also in the earth the fluids often conceive imperfections, when either a blow or some tremor of the ground, old age, cold, or heat has blighted Nature.[2]

Lodes running from the east

Veins

Hanging

Lying

Slanting veins

Seneca

Similarity of fluids to minerals

Greed

Meanwhile, however, with countless perils and deaths an entrance is provided to the very entrails of the mountains (where Pluto dwells), work, that is, for giants and mighty men, as Pliny reckons in Bk XXXIII. For after driving galleries for long distances they busy themselves by lamplight with their benighted vigils and exertions, all for the sake of riches, and are overcome by a wretched mishap, some by rocks, some by gas and smoke in the middle of their toil, or the cables break and they are smothered amid the caverns. Thus they give proof to others that it would have been less rash for divers to seek pearls among sea-monsters in the depths of the ocean than for these labourers to extract minerals.[3] Some miners, too, when the vaulted ceilings or pit props collapse and the rock masses cave in, either perish there and

Supposed dwelling of Pluto

They are smothered

They die of hunger

then or, if no help is forthcoming, waste away and die, as I shall make clear in a following chapter.[4]

CHAPTER THREE

On the excavation of minerals

Undaunted

HOWEVER, adapting themselves to these perilous conditions, the miners who search for metals, fearful of such dangers but not routed by them, leave frequent arches to hold up the rock and set up wooden props from the sides of the mountains inwards, to ensure their own safety. They rely on the doubtful stability of these, but they have contrived yet another method: those who intend to hack out metals or select lodes of silver let themselves down on ropes among rocks where they cannot walk; afterwards they apply their skill to these minerals and clear them out with fire and water.[1] When they see that this is a barren quest and wasted labour – since it appears that rarely or never is a profitable search for the richest ore made in the crust or surface layer – they resort to a more substantial device and set up pillars within the mountain sides, with vaulting far stronger than the supports they used earlier.[2] They do this in the firm belief that nowhere but inside the deeper hollows of the mountain and at the very lowest depth should one look for wealth, guided by certain clever signs. There, smelted by Nature, the metals, silver especially and copper, are more frequently dug out and in greater plenty.

Riches deep down

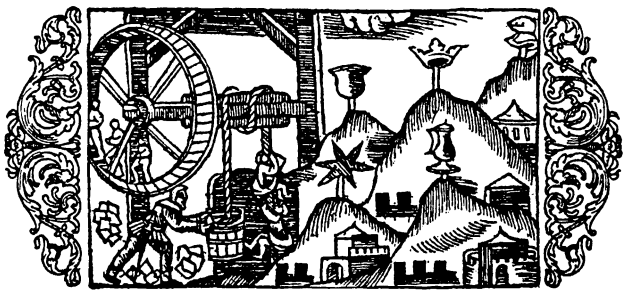
However, according to Strabo, there is a saying, 'Many more people snatch at gold, or silver, or both, if they have been refined, than dig them out in their raw state, even if these metals are caged inside a thousand bars and guarded by griffins or Scythian ants.'[3] Again, in another proverb we have: 'Gold that is seized must be guarded with steel.'[4] Consequently, according to Pliny, the life of man would be harmless and blessed, not to say luxurious, even if he gained from it only what he desired above ground, and possessed only what is to hand,[5] as is seen related above in the passage about the bartering of necessities.[6] But so many strange and wonderful inventions were formerly devised by avarice, that the wastage of gold and silver, which were everywhere abundant, was clearly far deeper, higher, and broader than the feeble inclination of the present age could search out or, so far as it wished, imitate in the vanity of individual men. [7]Is it not to be condemned as empty folly to invite Nature to the incitement of vices, to engrave lustful pictures on goblets, and drink from obscene shapes? Then, when gold and silver induce disgust, to buy at an even higher price vessels of crystal that will, because they are so brittle, at once be destroyed if they are dropped, and

Gold is guarded with steel

Wonderful inventions of avarice

Crystal vessels

therefore cost more? Finally to fashion drinking vessels of emerald, in order to become intoxicated and at length to strip men of reason and render them senseless and womanish?[7]



CHAPTER FOUR

On the differences among veins of metal

Divisions of mountains and the reasons for them

VEINS, or shafts, or any ownership of metals is specifically distinguished and apportioned by certain marks put up on the mountains by their finders, either referring to the circumstances, or to their natural situation and character; for they have been found with a wonderful regularity and (whether through the wrath or favour of the Deity is unknown) are still found every day.[1] First by the violence of thunderbolts and of the whirlwinds that consume trees, glittering lumps of silver are revealed; next the summits of mountains, when scraped with spades, expose shining veins of silver below the ground. These the prudent peasant covers there and then with dung, being content with his untroubled farm rather than wanting a silver mine that presents itself to him of its own accord; though he realizes that with this he could improve his own living and that of his offspring. For the peasant is uneasy and fears that the nobleman or the treasury, whoever owns the farm, will, once the silver mine has been detected, wish to remove him from the land for the sake of greater profit, so that there may be no more farming where there is an abundant mine of silver. This is why he prefers the productiveness of his fields, as I have said. Time was when for this reason both the fields and the silver mines which came to light there were abandoned, and today, too, they are concealed as carefully as can be. So much harm has been done by the insatiable greed of our rulers that, where there were once six hundred shafts or mines of iron, copper, or silver, at the present day one sees hardly three hundred left for the benefit of the public. It is superfluous to list here the names of these mines, when the people who live there are notably saddened by the recollection that their fate has come to such a pass that they dare attempt nothing against the force of the powers that be.[2] Strabo records as much in Bk IV, about the Salassi, who bordered

Finding of materials

Life of peasants safer

Silver mines are concealed

Salassian people

Unity

Dissension

Liberty more precious than gold

Lingones

on the Helvetii. They had gold diggings more productive than they are now, and, when they were sufficiently powerful and united, held these in safety, having the right to control access to them. At length they were weakened by internal dissension and handed over their gold and, what is even more precious, their liberty to the management of greedy Roman officials, whereupon they were plunged into contemptible poverty and slavery.[3] Strabo testifies at the end of the same book that the very same thing happened among the Lingones, that is the people of Lorraine, saying that at that time all the gold mines were in the power of the Romans:[4] or rather the gold and riches of the whole world fell at a simple word of command into their hands, because of their unfathomable genius and intelligence.[5]

CHAPTER FIVE

On wheels, tools, and dangers of the workmen

IN this last picture can be seen a very high wheel, or hauling machine, being rotated or revolved by men or draught-animals walking round in it. Apart from that, men are seen firmly seated upon ropes and descending into the depths, and in return vessels, or buckets, full of ore or water are being lifted up.[1] All this indicates, as everyone knows, the method of procedure which miners of metal adhere to and which is applied to their work through necessity: these draught-animals, horses, that is to say, and huge bears,[2] are allotted by turns or side by side to rotate the wheels when greater weights are to be raised or let down, and when the minerals that must be lifted could not be brought out more easily from the cavities at the bottom by means of galleries or ladders.

Way to lift ore

Miners

Outlaws

The miners continually undergo such hard, heavy labours, above and below ground, for they are a very tough breed of men and are for the most part fetched together there for certain crimes under a bill of outlawry. They live in that place only through the protection of the sovereign; otherwise, once they had exchanged homeland for exile, they would never regain the right to return to their own possessions.[3] However, these workers observe the laws and obligations that obtain in the mountains and through these they are kept in check by very strict regulations from inflicting harm on anyone, even though they are prone to take sudden part in riots, insurrections, manslaughter, and a thousand other outrages. Otherwise there is no peril or catastrophe which they fear to undergo. These may beset them among tumbling fragments of rock, amid the beams set within the sides of the mountains to shore them up, in the deadly vapour and stench of the minerals, or from the oppressiveness of the confined air. As a result they are very

Laws of the mountains contain many different clauses

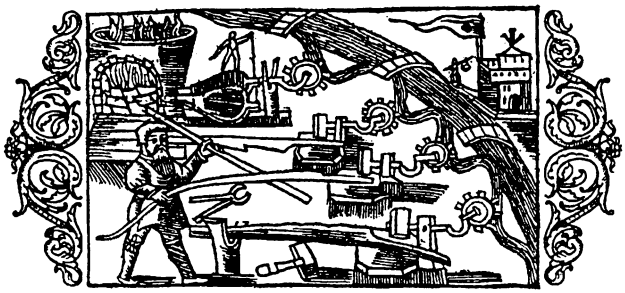
Workers unfrightened

frequently overcome by horrible deaths. For when they work impulsively, with more speed than caution, if the props break and the rocks fall, they are either battered to pieces at once or, as I said before, in a few days they are suffocated, emitting frightful cries because of the torments of hunger.[4] When no aid is forthcoming to drag them out alive, a single burial inscription indicates the cause of the disaster and the number of casualties, whether it be thirty, sixty, a hundred, or more. Nevertheless the other miners retain their unquelled vitality, being hardly daunted at all by these or similar terrifying sights. For, even if they are lightly tapped with hammers, colossal rock-faces of incalculable weight will collapse in ruins.

They are suffocated

Memorial to those overwhelmed

Vitality unquelled



CHAPTER SIX

On the skill and ingenuity of smiths

IN many kingdoms and provinces of the North, men generally hold smiths in extraordinary esteem, whether blacksmiths, founders, or metal-turners, particularly among the mountain-dwellers of Dalecarlia, an unconquerable race of fighters; though in the northern part of Hälsingland, which was once honoured with the title of kingdom because of its splendid feats, can be found craftsmen so skilled and industrious in the functions of a smith that they hardly have their equals in that entire zone. For by the skilful disposition of waterwheels they know how to draw out raw, shapeless materials to a considerable length owing to the rich substance of these metals. So, by means of the mobility and driving force of such gear, some enormous piece of work is brought to a finish in a short space of time, not to mention ordinary vessels of expanded copper and iron tools. These people frequently gain no small profit from this kind of manufacture, as also from iron doors, window shutters, and trelliswork, which are joined[1] together so strongly that they cannot come apart, so that one hardly sees their like in the whole of Europe. The chapel of St Andrew, placed by order of Pope Julius III in the Via Flaminia, has iron gratings, and the splendid building of the Lords Mattei at Rome, over near the public square, contains reticulated ironwork which is beautiful and strong.[2] But were the work done according to the fashion of the master-

Skilful Hälsinglanders

Usefulness of wheels

Trelliswork

smiths of the North, it would be even more amazing and, if it were to be seen, would bring a great many people to marvel at it.

Detestable merchandise

Iron instruments such as handcuffs, spiked fetters, etc. for torturing culprits or suspects are never, or very seldom, made here, but together with other rather disagreeable goods are brought into the kingdom for profit's sake by German traders. One specimen among these is given the ancient name of 'the Virgin'. This is attached to the fingers and crushes them so hard that at the first application unbearable anguish results. The name is pretty enough but the instrument, put to the proof, causes severer agony than anything a person must suffer in any kind of disaster. Let magistrates and interpreters of the various laws consider and pronounce the names and nature of offences or suspicions for which this 'Virgin' should be employed, if there is any need, since it is no concern of mine to report the reason for torturing or its methods, when so many distresses and causes of lamentation have arisen among all conditions of men within the kingdoms of the North that it is hardly fitting to set foreign tortures beside them. It is right, however, for me to introduce one instance that deserves compassion: there are some leaders of the Lutheran faction on the shore of the Baltic Sea[3] who so love and countenance men who are skilled in torturing with iron instruments never seen before, that they deplore the fact that they were so long ignorant of the use of such frightful and monstrous torment inflicted on other creatures. When the mind shrinks from picturing what these instruments are like, how much more does the hand shrink from describing such revolting tortures, when more atrocious torments cannot be invented or displayed in hell itself.

Virgin, bringer of pain

Interpreters of the laws

Lutherans the cruellest inventors of tortures

Horror bids the author be silent

CHAPTER SEVEN

On the different processes in casting metals

Silver

IN the mountains that are very rich in ore the same metalworkers of the North have another method of smelting and working silver, copper[1] and iron, which is notable for the useful and convenient process whereby each metal may be reduced with ease to a mass all of its own kind. When silver is smelted, it needs hollow kilns and clear fires, as being one of the

more precious metals; then, once it has melted into a soft fluid and rectangular or round ducts are inserted underneath it, it may be drawn out into the various shapes designated by the workmen. Now the silver which flows out in this way is mostly made into shapes like ordinary tables or square seats, or else like soldiers' shields, and this is done chiefly with the idea that the king's magnificent wealth and that of his realm should be proved both to the natives and to the spokesmen of great princes, to whom such massive pieces of silver are presented.[2]

Shapes of silver castings

But copper is smelted in longish kilns built up of clay and slag, and bound together with iron wire and ropes. These have a great number of bellows suspended on various sides to kindle a hotter fire, and the molten metal is poured out into different shapes, very massy, without the use of ducts but by means of a trench dug in the earth. Yet there is a far easier and quicker way, when the winds blow violently in under the fire; by this means an exceedingly great heat is kept up and the metal strewn in the midst of the flames is melted down into various forms, weighing one or two hundred, six hundred, or a thousand pounds and more, and even ship-pounds or weights of a greater measure.[3]

Copper

Force of winds more effective

CHAPTER EIGHT

More about the same metals

IRON ores can only be worked with the aid of waterwheels, which activate the bellows to transform them into a mass that may be split up; they are then hacked with shovels into chunks or flakes. Keeping always to the same size, they make these rusks of iron either as big as a clenched fist, or up to four times as large, to the number of several hundred thousand every year. These rusks, to a weight of five hundred pounds or more, are put into longish casks, like Roman 'barrels', and sent out, at a very high profit, to foreign nations or to provinces at home.[1] Here, too, there is such an abundance of quality-tested steel that it meets the perpetual needs of natives and foreigners for every kind of building tool and any sort of arms: cuirasses, helmets, swords, and spears. Now the steel becomes of finer texture, stronger in action, and more easily wrought with a mixture of iron, the more gradually the steel is withdrawn from the blazing furnace, when it is not suddenly quenched in water; for, if it is all plunged in, it is rendered so brittle and fragile that it can stand no forcible bending.[2] Among the mountain dwellers of the North iron chips the size of two fingers are manufactured and very easily sold like marketwares in various quantities, that is, by the hundred, by the thousand, etc.[3]

Waterwheels

Iron

Vessel holds 500 pounds of iron

Steel

Usefulness of steel

Means of tempering steel

Steel is sold by quantities

CHAPTER NINE

On the work done by the ancients with regard to metals

THE profit made in olden times is known well enough, and this insatiable curse has lasted through one age after another in the search for metals and in their use and abuse. We are aware of how it has made its way into these unslakable times of ours, so that none or very few, even if they are lucky and happy, are satisfied with their lot. [1]One must ponder, then, on the very large group of men who were dispatched to an old mine, long abandoned, to ascertain whether the greed of the ancients had left anything for succeeding generations. We know that these men went down with a large supply of torches and then, tired after their long journey, saw great rivers and enormous confluences of swirling waters, not checked by the earth that had fallen into them, but flowing freely. This was taken as proof that our age laboured under defects that were not new but had already been passed on from early civilizations. Those ancestors of ours, on whom we lavish praises and whose difference from us we lament, were led by their expectations to hew down vast mountains and stood there over a profit but under an impending fall of rock, so that one had to wonder what need bowed down a man normally raised erect towards the stars and plunged him into the very bowels of the earth to dig out gold, which is of no less danger to its seeker than to its owner. For this reason the searcher chose out galleries for his abode and crawled round his lifeless, mud-covered booty, forgetful of the better aspects of Nature, from which he had turned aside. To no dead man, then, is the earth as heavy as it is to those upon whom the itch of avarice has cast the weight of the earth; for it has taken the heavens away from them, while it is burying them in the depths where that mischief lurks.[1]

Not satisfied with their lot

They descend with torches

Waters

Ancient defects

Gold a danger to mine and more dangerous to the possessor

Danger of avarice

Yet however this may be, relief is provided for men when metals come into circulation. For a vein of rich gold is like other land if left to the idle; only when it is in use does it grow to have value, for when riches are shut fast in the hands of grasping men they have been buried with the living. Cassiodorus, the wise chancellor of Theodoric and of other Gothic kings, among various other matters says in the letter from Bk IV which he sent to his official, Duda, that in searching for gold he should keep entirely away from the actual ashes of the dead, 'because', he writes, 'we do not wish to seek for profit which can only be found by means of dismal crimes. Let such ashes be covered by buildings, and let tombs be adorned with pillars and marble carvings; but those who have now left behind them the commerce of their lives must not keep their wealth with them. For gold may rightfully be abstracted from graves when the owner is not remembered. Indeed, it is a kind of sin to

When gold is profitless

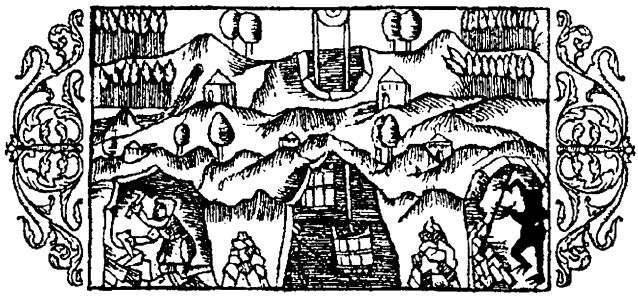
Cassiodorus

Ashes of the dead not to be touched

When gold is to be abstracted

leave in useless fashion to the buried remains of the dead what is capable of supporting the life of those still living. It is no avarice to seize something when its owner cannot lament its loss. The first discoverer of gold is said to have been Aeacus, and of silver Indus, king of Scythia, who passed on their findings for the use of mankind and were highly praised for it. We on the other hand should not disregard it; for as they were applauded for disclosing what had lain hidden, we are in danger of censure for appearing to neglect what they revealed.'[2] And so he ends.

Discoverers of gold and silver



CHAPTER TEN

On demons in the mines

IN brief, we gather that in the northern kingdoms, as was said above in Bk III, Ch. 22, demons make great efforts to perform services for the inhabitants of those parts, most often, however, in stables and cowsheds and in the mines, where they break up, hollow out, and split the rocks, which they load into skips or buckets, and carefully fit the little wheels and pulleys by means of which the hoisting gear operates. As and when they please, they show themselves to the miners as shadowy shapes in all possible forms; with the sound of voices they counterfeit laughter and senseless roars of merriment, and they play frolicsome tricks and countless other jokes, with which they deceive the poor men. But they actually turn their simulated compliance into calamity, and finally into death, by shattering props, or they destroy or rout the miners through a fall of rock. Ladders are broken, stenches are evoked, the airs are choked up, and cords are snapped, causing the miners to fall and break their necks or in the greatness of their peril to curse God, so that they will immediately sink even deeper into the fetters of these demons. They perform those pranks in the richer silver mines where there is a fuller prospect of lighting on immense treasure. It is mainly for this reason that many of the most productive mines are found to be completely abandoned and sunk into utter decay, and in particular because there exist in ore-bearing regions six kinds of demon more malicious than the rest, of whom many mine-workers are terrified, imperilled as they are by their baneful attacks.

Mining gear

Sportive tricks

Perils of miners

Abandonment of mines

Six sorts of demons in mines

What the German writer, Münster, thought of such tricks, or rather, the violence of these spirits, I shall disclose here: 'It has been ascertained,' he says, 'that a kind of demon haunts some mines. Of these some do no harm to the miners but wander about in the pits and, although they actually accomplish nothing, seem to busy themselves with tasks, now excavating a vein, now loading what has been dug out into containers, now winding the hoisting engine, now goading the labourers; and they prefer to do this in the galleries from which a great deal of silver is being dug or where there are high hopes of discovering it. Others, though, are extremely dangerous, like the one which some years ago infested a mine named Rosenkrans, at Anneberg, with the result that twelve miners were killed; and because of that the mine was abandoned, even though it was as rich in silver as anyone could desire. I have all this from that most learned man, the eminent philosopher, Georg Agricola. The Romans once doomed men condemned to death to such pits, where evil spirits had their fun with them in the same way.'[1]

Demons wander about

Dangerous

12 miners killed

Romans

CHAPTER ELEVEN

On lightning in the ore-bearing mountains

Dangers to workmen

THOSE who live in the ore-bearing mountains frequently experience the amazing effects produced by thunder, flashes, bolts and sheen of lightning on the exhalations from minerals. These effects include a thick vapour from the caverns, which overclouds everything, a loud rumbling in the air on the surface of the mountains round about the mines' entrances and exits, which keeps people from approaching, and above all an unbearable stink mingled with the sulphurous smell of thunderbolts. If anyone unused to this comes near and inhales it, he will contract a sickness which is very difficult to cure, that is, a blocking of the throat passages. If hot beer mixed with butter is drunk at once, the stoppage is loosened and may be cleared by stronger remedies administered one after another. Nevertheless, it is through the collaboration of a strong constitution rather than by the virtue of medicines that men in those parts who have been afflicted are cured.

Stink

Beer as medicine

Mines are indicated by a stroke of lightning

Herds are killed

Paul the Deacon

Countless thousands of men killed by lightning

Vegetables grown up again

Moreover it happens after a stroke of lightning that new veins of silver are exposed, gleaming brilliantly. These veins thereby gain a lasting name and augment the fortune of the owner who works them. Furthermore in the same region thunderbolts and lightning rage so furiously when a violent storm approaches, although at intervals of years, that many herds of cattle are killed far and wide across the various plains; and it seems no wonder if this occurs there through unknown natural causes, since it happens like that in a good many other places. Paul the Deacon says in Bk V, Ch. 15, that about the year of Our Lord 640 there was more rain and thunder than any person remembered before, so much that countless thousands of men and beasts were destroyed by lightning; and that in that year vegetables which it had been impossible to gather because of the rains grew up a second time, lasted until they were ripe, and were sound when gathered.[1] Anyone who likes to look further into the consequences when lightning strikes metals or iron tools should peruse Bk I, Ch. 13, of this work, where he may see more precise facts related.

CHAPTER TWELVE

On minters and coinage

Bartering goods

Money seldom or never used among the Northerners

Why coinage permitted

Leather money

THE peoples of the North, who in days of old lived for the most part honestly by bartering goods, were to be considered more fortunate than those of today, since they knew nothing about the use of money, nor desired to; although in the most distant regions they still live by barter without the exchange of coinage. As time passed the use of it would never have been discovered or allowed, had not men of good birth been ill-advised and diverted from a true evaluation of their property. But in order to further more easily the interests of an uncivilized people and age, our forefathers devised and permitted leather coins, distinguished by certain silver studs, whose value could be assessed by their weight and number.[1] For many centuries this currency multiplied in the royal treasuries of the Götar and Swedes, and was kept guarded in fortresses, as being of great worth. As time went on, however, in accordance with the custom of other regions, the use of

Abundance of gold and silver

silver currency and likewise of silver alloyed with copper was brought into practice there too, but not of gold coinage, since the deposits of gold, a metal which Job says comes from the north,[2] still lay concealed. These King Gustav is said to have discovered, and they were of the greatest value.[3] None the less, gold is imported from elsewhere into those kingdoms, though not in the northernmost provinces where, by command of the princes, it is not accepted, because of the fraudulent ways of merchants and the simple-mindedness of the people, who think orichalc or marcasite, because they shine, are pure gold, as Paul the Deacon records about the Saxons in Bk III, Ch. 6. These, he says, in their purchases grossly cheated the Lombards with bars of adulterated gold, until they were found out and punished.[4]

Job: 37

King Gustav

Why gold is not allowed to dwellers in the north

Gold bars adulterated

CHAPTER THIRTEEN

On counterfeiters of money and their punishment

NEITHER pure silver nor silver alloyed with copper is used as money among the tribes farthest north, because of the glib Muscovite traders who, following in the footsteps of the money-hungry Greeks, consider it glorious and profitable to cheat all their neighbours, and indeed anyone living far off, with the basest coinage manufactured from a mixture of iron, tin, and lead. But they do not escape scot-free in those parts with this deception of theirs. We know that on one occasion Russian merchants, having bought all kinds of goods to satisfy their needs, had handed over to some simple people an enormous quantity of iron coinage, glittering with the brightness of tin and stamped with the emblem of kingdom and king, and that shortly afterwards the royal officials punished this swindle with extreme severity.[1] They poured these coins, which they had fetched in from everywhere, into a hollow furnace with fire underneath, and when the metal was bubbling hot, they thrust into it alive the perpetrators of this treacherous fraud. All others who were caught in a similar deception were either put into cauldrons and killed with boiling water or hanged, strung to a high beam with their money glittering all over their bodies, as I saw done while I was still a boy in the year of Our Lord 1500 outside the town of Linköping in Östergötland.

Money is forged by Muscovites

Punishment for counterfeited money

Other punishments by boiling or hanging

It was therefore laid down, according to the laws of olden times and the praiseworthy customs of neighbouring provinces, that the legal right to mint money should be reserved to kings and princes, and to the senior prelates and officials who govern the Church; their particular reason and approach was that money should be minted according to one and the same content,

Right to mint money

With a uniform standard

proportion, or standard, and used in buying and selling, not only in the kingdoms of the North but in the coastal cities of Germany, for the sake of better amity.[2]

CHAPTER FOURTEEN

On the damage caused by base coinage

AFTER the passage of several years, when necessary and useful regulations were either scorned or slighted, or, because of the personal avarice of certain supervisors, were studiously suppressed, the price of commodities rose without any uniformity or fairness through the introduction of false currency.[1] Besides this, offensive methods of bartering and selling were everywhere attempted. Fifty years ago lawsuits, at home and abroad, were being carried on as far as the Roman curia, such as occurred between the Swedish leader, Sten Sture, and Otto, a counterfeit coiner.[2] Not long afterwards Albrecht, Grand Master of Prussia (for so the head of the Teutonic Order was called), at the outset of a grim war against the king of Poland, ordered money adulterated with a great deal of bronze, or copper, to be struck in the shape of a square, and, in his turn, King Christian II of Denmark, intending to fight against the Swedes and Götar, commanded that a similar coin, called *klipping*, should be made, and he used his authority to fix on this utterly base currency a value greater than the bronze was worth. The multiplication of this issue, in conjunction with the activity of subversive individuals, enabled him to gain his wish and take possession of the kingdom. However, this lasted only for a short time, for there rose up the famous Gustav Eriksson, who, after fleeing as a young man from the savagery of Christian, undertook, with the agreement of the nobles and people, to rule over the kingdoms of the Swedes and Götar and, within a brief period, when he had multiplied the currency in a similar way and paid the soldiers, drove Christian out of these realms for good.[3]

Damage through false currency

Sten Sture the Elder

Albrecht, Grand Master of Prussia

Christian II, king of Denmark

Klipping 1521

Gustav

Christian expelled

But it was not so easy to abolish the coinage that had been introduced and, completely debased though it was, dispersed through such wide dominions, until, stating the very obvious disadvantages of currency that was so utterly bad, with prudence and foresight my lord Johannes Magnus the Goth, apostolic legate and archbishop-elect of Uppsala, in a public gathering of the whole kingdom annulled it and proclaimed that thereafter it should never be worth anything. When this money had been gathered in, the governors or elders of the provinces employed expert craftsmen to recast it into church bells for the service of God. As soon as the kingdom had in one way or

Johannes, archbishop-elect, annuls worthless currency

Money is melted down into bells

another been pacified, the old currency came back. But the prices of goods, which had risen disagreeably high, could not be brought down to a reasonable level with the ease with which such prices had earlier been introduced without the least discrimination by foreigners.[4]

CHAPTER FIFTEEN

On the usefulness of lawful currency

Poor treasury

EVERYBODY now understands that the state treasury, whose contents have been gathered from the taxes of the subjects, is in a very poor plight when the currency is worthless; likewise, that revenue is considered wealthy and secure which is collected lawfully and at its proper value for the advantage of the public. Wonderfully useful for nipping in the bud insurrections of provinces and peoples, stratagems, deceits, perjury, and every other unspeakable evil is a legal, equitable currency, given stability by the shape of the stamp on it, the metal of which it is composed, and its weight. In the old days the North maintained such a currency in conformity with the cities of Germany,[1] at the same time enjoying the beauty of peace and all the benefits that accompany it. This it is believed to have preserved as long as it cherished and embraced the means by which it could remain united year after year, namely, that pennies should be of equal weight and value, wheresoever they might be taken and whatever foreign purse came to hold them. This applies especially to gold pieces,[2] which, owing to their identical weight, the variety of their effigies, and the uniformity of their content, generally reduce uncivilized nations to wonder and amazement, so that they wish to make peace with such princes as those whose images are viewed on them; or, if such peace is offered, they snatch at it without delay.

Usefulness of good money

Currency in conformity

Gold pieces

Pliny, in Bk VI, Ch. 22, about the Romans, brings in excellent evidence of this: the chieftains of India and Ceylon endeavoured to initiate and maintain friendship with them on account of such coins as I have mentioned, thinking that people must be upholders of strong justice if they could demonstrate their unity with so many precious, admirable, and diverse engraved emblems, a unity with which the remaining virtues appear to be linked in a beauteous chain.[3] But not even that concord could long be free of its troublemakers, for the mint-workers, who without doubt had been specifically supported for the public benefit, had an eye to their private profit and gathered mobs from this place and that and instigated a dangerous insurrection against the Emperor Aurelian, one which has ever since been called the War of the Minters.[4] There certainly was at that time an amazing dearth, or corruption, in the royal treasury.

Roman currency

Uniform currency displays unity

Mint-workers

War of the Minters

However, 'we say that kings themselves have the most power,' writes Strabo in Bk IX, 'and therefore we call them potentates, that is, the powerful, since they lead the people where they will, either by force or by exhortation. Chiefly they manage to persuade men by means of liberality; for to persuade by eloquence is not the gift of royalty but of orators. We call it kingly exhortation when they incite and carry men wherever they want by means of donatives. So they win people over by tendering presents, while with large supplies of arms they injure and compel. Now both these expedients are sold and bought for money. For that man has a great army who has sufficient means to feed it, and he who happens to have the largest property is able to pour out the most donatives.'[5] But something on this subject will be set out rather more fully in the books about wars further on.[6]

Potentates

Gift of orators

Kingly exhortation

They are sold for money

Where an army comes from

CHAPTER SIXTEEN

On the superior currency of the northern kingdoms

LEATHER money had most worth in ancient times, as I stated earlier in Ch. 12 of this book. Then came pure silver and after it alloyed silver, which lasted for many centuries, up to these times of ours, and money was also struck from copper alone.[1] When there were definite signs to show that this was causing irrecoverable losses to the royal treasury and the state, men had recourse to the ancient method of minting, that is to say, in pure silver, with a particular view to importing and exporting goods.[2] This currency came in different values according to the image it was stamped with, for instance, effigies of little ships, crowns, bears, birds, dogs, ears of corn, or iron clubs, all of which are the emblems of provinces, kings, princes, and communities.[3] In our own time coins of pure silver to the value of one florin are minted every year in great quantities, many tens and hundreds of thousands of them,[4] and are shipped out to the lands of Germany, Poland, and Tartary; on the other hand, the gold coins of the former kings of the Goths, Theodoric, Athalaric,[5] Theodahad, Totila, Vitiges, and Teia, are brought into the kingdom.[6] Persons of some distinction take great delight in poring over the coats of arms and faces of eminent men.

Leather money

Of silver

Of copper

Reason for losses

Emblems on coins

Dalers

Ancient kings of the Goths

CHAPTER SEVENTEEN

On goldsmiths

Noble metal

IT has been shown in the foregoing illustrations what a huge and inexhaustible amount of silver lies in the mountains of the Swedish kingdom,[1] and how it is discovered and extracted there. Next must follow a description of its use, or abuse, so that the qualities of this noble metal may not remain unfamiliar to those who do not possess it, or to those who, even if they have it, are not aware of its proper employment. It will be possible, then, by recalling the ways of ancient times, to demonstrate well enough what an enormous wealth of gold and silver, and that other valuable metal, copper, existed when (as I said above in Bk I[2]) the remarkable decoration they provided spread to the temples of idols, the dining-couches of kings and princes, and even to babies' cradles and the bridles and trappings of horses.

Temples of idols

Deaths

Posterity insatiable

Gold ore, which was then plentiful, afterwards became scarcer because of the savage deaths caused by plague, sword, starvation, and tempests, and regard for it disappeared. They passed on to posterity only the memory of certain places from which it had been extracted, a posterity now quite insatiable, as was related earlier about the most distant territories to the north;[3] and yet I think it cannot be denied that a very large quantity of gold is found among Swedish copper.[4] This, which is bought, sold abroad, often salvaged from shipwreck, and skilfully refined by fire, provides its owners with notable profit. I believe that Hungarian artisans ply this craft assiduously; the copper, which is very ruddy, is tested and then separated into thin plates that are sold to foreign merchants. These men then have it transported on long barges down the well-known River Vistula through the dominions of the king of Poland as far as Gdansk, the staple of the duke of Prussia, and there it is distributed. The rest is kept and left for the goldsmiths in Hungary to see if they can squeeze any gold out of the copper or bronze by means of their rare skill.

Hungarian artisans

River Vistula

Staple at Gdansk

As for the use of silver, nowhere is this splendid metal more commonly sold, among all classes of men, than in Svealand and Götaland; for hardly a household or a family can be found there which does not always, by its yearly labours, add some more of this commodity to what it already owns. Very

substantial profit is derived from large images of the saints, patrons and guardians of the kingdom, to whom ciboria or reliquaries made of gold or silver are reverently consecrated. The same applies to the adornment of young women through the splendid tiaras they wear on their heads, collars, pendants on their bosoms, bracelets, chains, necklaces, and rings, paid for by their parents, bridesmaids, or friends. And not without reason: for they wisely choose to bestow on them silver, since it will last their whole life and that of their heirs, rather than silken garments, which would be eaten by moths and quickly destroyed. Indeed, in olden times silver girdles were regularly put on by the more important men, which in the vernacular are called *silvskena*,[5] and spherical buttons of silver were fitted on their clothes to draw them tightly together. Again, small silver bells are tied to the tails of horses so that those who meet them may hear the sound and avoid a kick.[6] Moreover stirrups, bridles, poitrels, and many adornments are fashioned from silver, but more for splendour than to provide stout equipment.[7]

Female adornment

Silver lasts for ever

Silvskena

Small bells

Bridles

CHAPTER EIGHTEEN

On the silver ornaments of young women

THERE stands in Östergötland a very ancient town named Skänninge, because at one time its edges were washed by a rushing torrent called the Sken.[1] It has now dried up and so little of the river is left that there is barely enough to water a single head of cattle. But this lack is everywhere made good by an abundance of excellent springs, for these have ever-running fountains that gush out in unfailing streams. Although this town appears to be inclining towards decay and close to desertion, it once had no equal in situation, fecundity, and wealth among all the regions of the North.[2] It possesses, I repeat, a most healthy site, that is to say, it lies among fertile fields, meadows, and groves of oaks that are very beneficial and shady. The broad streets of this town were laid out by its original founders with such skill and application that from all the surrounding quarters they contrive to bend and run together towards the public square and town hall, which lie at the centre. In this square there used to stand a gigantic statue, Long Ture by name, dressed up to look like that of Roland in Bremen;[3] to its knees criminals were carried for public examination, chiefly adulterers, although such persons were seldom found. These men, amid inexpressible disorder and other scoffing, held rocks raised up on their necks, the rocks themselves being fastened together with iron chains between the arms of the statue; the chief purpose was to deter them from seducing the weaker sex.

Skänninge

River Sken

Springs

Site very healthy

Broad streets

Long Ture

Roland

Penalty for adulterers

Virgins' crowns

There were at one time in this city great numbers of girls from ordinary families who walked in procession at the more solemn festivals wearing splendid silver or gilded crowns, a span high.[4] These girls also wore another style of dress and decoration, as did the other women too, all rich with silver. This metal was plentiful enough to be within the reach of one and all, even of the peasants, and is probably so still: to the glory of the prince, inasmuch as he reigns over subjects wealthily and brilliantly dressed rather than over paupers, like a king of robbers or bandits.[5]

CHAPTER NINETEEN

On the great riches and the heroic men of this ancient town of Skänninge, and a trick played there by the devil

Nicolaus, bishop of Linköping

Ingrid

Devil and his retinue of knights

Devil vanished

Silver vessels are given to Ingrid

IN this same town of Skänninge there were noble and famous men and women, renowned throughout their whole generation and people for their high birth and happy fortunes. Among these was the blessed Nicolaus, once bishop of the church at Linköping, who in a divine revelation to St Birgitta was declared to be the purest of men.[1] There was also the noble widow Ingrid. She despised the ostentations of this world and went out to foreign parts during the papacy of Martin IV, in the year of Our Lord 1282, to Jerusalem, Compostela, and Rome. As she was returning from the Holy Land with a number of deeply devout virgins as her companions, the devil, intent on setting a snare for her, entered this town in great state with a troop of knights, as though he were a mighty lord. There and then he summoned the sheriffs and citizens to the public market place and bade them on no account to let in certain women who were resting for a while outside the walls, alleging that they were witches and that it was many years since he had first learned of their activities, which were typical of the vilest enchantresses. Hearing his frightful tale, many of the counsellors and others defended themselves in the usual way with the sign of the holy cross, and on the spot, in the twinkling of an eye, the whole of that devilish rout was seen to vanish like smoke. When it was understood through a messenger that a holy woman returning from a pilgrimage was standing before the gates, they advanced to meet her with the most pious tokens of respect and received her into their city. Because of this they were rewarded, through her blessing, by a steady replenishment of everything that was good.

Therefore the town council, having witnessed so patent a miracle, eagerly and generously offered, each according to his rank, to give this holy woman large silver vessels, which they had in plenty, to add to her own wealth so that

she could build a dwelling, of whatever kind she wished, for herself and her company of virgins. As a result a devout convent of Dominican nuns was raised in a fitting place to practise a praiseworthy reverence and rule. Until these Lutheran times it was maintained by the citizens with great conscientiousness, so that their daughters might be brought up in holiness and chastity; but now it has been destroyed.[2] A companion of this pious widow was a certain Mechthild, a brave woman of illustrious family from the realm of Denmark. Her betrothed, a man of violence, wanted to kill her when she objected to his wishes, but he fell from a high flight of steps, broke his neck, and died at once. She fled away silently in the middle of the night and, with the aid of this widow Ingrid, remained unharmed in holy virginity and was full of good works until the end of her life.[3]

Mechthild of Roskilde

CHAPTER TWENTY

On furriers[1] and the variety of pelts

MANY people wonder how it is that men live in safety and health in the terrible cold of the northern regions, something of which has been shown in Bk I, Ch. 19. I first heard this commonplace question over thirty years ago in Italy,[2] especially from Africans and Indians, who under the torrid zone find any clothing oppressive, even though they wear garments made from the feathers of parrots and variegated parakeets ingeniously stitched together. The answer that they received, which might have been given in any past age, was that Nature, the mother of all things, does nothing superfluous or insufficient, but without doubt makes the very best provision for all her creatures. The Indian rejoices in his many kinds of feathers, perhaps more for a covering than from necessity; the Scythian, on the other hand, is glad of his shaggy attire and protection because of its usefulness. Nor are we at liberty to alter the boundary set by Nature's wisdom, for, just as towards the far south[3] she favours intense heats, which can be mitigated only with difficulty, so beneath the Arctic Pole she easily provides suitable reliefs against the bitter winters, ice, frosts, and stormy blasts, that is to

Incessant question

Nature, mother of all things

Indian

Scythian

Reliefs against the cold

Names of animals

say, timber in great plenty and at a very low price, and in particular the pelts of different animals, wild and tame, such as:[4]

Badgers	Goats	Reindeer
Beavers	Hares	Roe deer[6]
Bison[5]	Kids	Sables
Calves	Lambs	Seals or sea calves
Dormice	Lynxes	Sheep
Elks or wild asses	Martens	Squirrels
Ermines	Otters	Wild cats
Foxes	Red deer	Wolves
Gluttons		

Experienced furriers know how to sew together the skins of all these beasts, mingled so cleverly that their variety gives a most beautiful adornment, and the softness, added to that, keeps one very warm indeed. To find out about their purchase you must wait for the next chapter.

CHAPTER TWENTY-ONE

How to recognize disguised furs

THE examination of sable, marten, ermine, beaver, lynx, and otter furs requires very careful concentration, for they may come into the hands of buyers after being tampered with in one way or another, so that these people often regret their purchase when they discover a sudden change in the colours.[1] Two different types of squirrels' fur (which in Italian are called *schirasse* or *dossine*) are to be found. The species from the mountains of the North is white and bluish-grey;[2] their furs are falsely coloured by sprinkling them with powdered chalk. The others, that is the southern kind, are caught towards the lower end of the region and are likewise very easily disguised with chalk and pitchy soot mixed together. Marten or sable skins are smoked with torches of pitchpine to make the hair look thicker and blacker. For this reason they are not[3] usually sold under a clear sky, or if a fair wind is blowing, or as the sun returns, but purposely when the air is gloomy and dark. The pelts of beavers and otters are falsified in the same way; but this trick can at once be detected by rubbing them with a pure white linen cloth. Ermine furs which have been sprinkled with chalk, as one sprinkles flour, look much whiter than usual. But again this adulteration is revealed if a piece of black material is gently rubbed over it, the knowledge

Squirrels

Powdered chalk

Martens
Sables

Fair wind
Pelts of beavers
Of otters
Linen cloth
Ermines
Black material

being gained, as it were, by means of two completely opposite colours.[4] Therefore, when he is matching or buying these kinds of pelts, the prudent purchaser needs a clear eye and a bright sky to avoid being deceived by the tricks I have described, or by others even worse.

With a clear eye

END OF BOOK SIX

NOTES

OM 6: Preface

[1] This refers to warfare within Scandinavia in the Union period and to Gustav Vasa's war of 'liberation' (1521–3), incidents of which are described in OM 7–11. See Introd., pp. xix–xxii.

[2] On Swedish mining areas and practices see *KL*, I, cols 481–500. OM may be thinking in particular of Falun and its neighbourhood.

[3] The mine-masters, economically and socially superior to the peasant-farmers, were the political leaders in Dalecarlia.

[4] Krantz, *Chronica ... Suetia*, V 43; he is referring to the battle of Rotebro; cf. OM 10:1.

[5] OM probably thinks of the battle of Västerås in particular; cf. OM 7:5 and 16.

[6] On the Stockholm 'bloodbath' see the Introd., p. xxii; cf. OM 8:39–40, 13:29.

OM 6:1

On the ore-mountain, shown with visible workings in the picture, cf. especially the end of the chapter.

[1] OM says 'copper or bronze', 'cupri seu aeris', but the latter word seems no more than an alternative for the former. By 'steel' he means iron ore deposits containing manganese, hardest to smelt of any found in Sweden; the best-known mine where it was extracted in the late middle ages and in OM's time was Stålberget in S. Närke. His 'choicest' iron was the staple good quality 'osmund', famous throughout Europe; cf. OM 6:8.

[2] The silver mines were understandably important for the royal treasury and mints.

[3] This and OM's 'indicative signs' are to some extent confirmed by modern observation. Cf. OM 6:4 and 11.

[4] OM follows Münster, I 15.

OM 6:2

[1] Cf. Münster, I 15.

[2] With some omission and modification from Seneca, *Nat. quaest.*, III (not VIII as in OM) 15, 1–4.

[3] Paraphrase of Pliny, *Nat. hist.*, XXXIII 21, 70.

[4] See OM 6:5.

OM 6:3

[1] OM seems to be thinking first of more or less horizontal shafts, then of more steeply angled or vertical ones. The common method of extraction was to pile up wood in shafts and fissures and set fire to it; the heat caused the ore to expand and shatter and it could then be dug out in pieces of manageable size. It is probably this stage in the process to which OM refers in the last sentence. Cf. *KL*, I, cols 481–90.

[2] These lines appear to describe a bigger, deeper mine with division into galleries.

[3] Strabo does not have this saying, but he has a legend about gold-digging ants, Strabo, XV 1, 44. On 'Scythian ants' see *KL*, XVII, cols 134–5; on griffins guarding gold cf. OM 19:27.

[4] The source of this adage is unknown.

[5] Pliny, *Nat. hist.*, XXXIII 1, 3.

[6] See OM 4:5.

[7–7] Follows Pliny, *Nat. hist.*, XXXIII 2, 4–5; also cited in Vincent, *Spec. nat.*, VIII 5.

OM 6:4

The vignette shows a treadmill apparatus for lowering and hoisting men and materials; cf. OM 6:5. The black oblongs on the right mark silver mines, cf. the vignette to OM 2:19. On the marks on top of the ore-mountains cf. the opening sentence. The crown denotes royal ownership; the other badges are probably those of noble proprietors.

[1] Cf. OM 6:1 and 11.

[2] On silver and silver-smelting in Sweden see OM 6:7 and 11; *KL*, V, cols 272–6.

[3] Paraphrased from Strabo, IV 6, 7.

[4] Strabo, IV 6, 12. OM's Lorraine is a mistake: Strabo wrote of the Taurisci, a tribe settled between the Danube and the Tyrol.

[5] OM frequently praises Romans and Italians; given his status as an impoverished exile among them, it is not surprising.

OM 6:5

[1] See OM 6:4. When OM visited the Low Countries in 1527, he had instructions from Gustav Vasa to seek out experts in drawing off or pumping water from mines; cf. OM 2:33 and n. 2 there.

[2] No other Swedish sources attest the use of such labouring bears; but cf. OM 18:34.

[3] All the early privileges issued for the Swedish mining districts gave rights of domicile to outlaws who went to work in them, excepting only those guilty of certain of the gravest crimes.

[4] Cf. OM 6:2.

OM 6:6

The vignette shows the use of water-wheels to work three trip-hammers and one of a pair of bellows (the other apparently operated manually).

[1] Reading 'iuncturis', 'joined', for OM's 'iunctutis'.

[2] The chapel of St Andrew was designed by Vignola (1507–73) and built during OM's time in Rome. The Palazzo Mattei on Piazza Paganica is from the same period and has been ascribed, probably wrongly, to the same architect.

[3] OM's 'mare Sarmaticum' refers to the SE Baltic; cf. OM 12:19.

OM 6:7

The smelter on the right of the vignette is apparently for copper, cf. the second paragraph, but the forms with owners' marks, into which the molten metal is drawn off, seem borrowed from the previously described silver process. The middle furnace with the 'hollow' opening is for smelting silver. The one on the left is probably for iron; two containers for 'osmund' and a pile of 'osmund' lumps are in the centre foreground; cf. OM 6:8.

[1] On 'copper or bronze' (here and again below) see OM 6:1, n. 1.

[2] OM may be generalizing from a report in *JMHMEU*, in *SRS*, III:2, 71, stating that Sten Sture the Younger presented the papal legate, Arcimboldi (cf. Introd., p. xxviii), with 'a mass of pure silver of the size and breadth of a round table'.

[3] What OM meant by Latin *libra*, 'pound', is uncertain. If he meant a 'mark' (8 oz), as has been suggested, the outcome is half the weight given; but as JG observes, 'The significance of such numerical statements cannot now be even approximately reconstructed.' OM would have been familiar with a Swedish ship-pound of c. 200 lb. Cf. OM 5:2, n. 3.

OM 6:8

[1] OM says that these lumps of iron, freed from slag, were exported just as they came from the smelter, but it is thought that the desirable 'osmund' was further fined in the smithy; cf. *KL*, XIII, cols 43–5. The 'Roman barrel' (Latin and Italian *barile*) was a wine measure of varying capacity (36–60 litres).

[2] OM is probably describing a tempering process which did not involve a single plunge but a series.

[3] OM is thinking of chips of 'osmund', sold piecemeal but each one of legal weight; in the mid-sixteenth century there were 30 in a lispound (10 lb avdp.). An 'osmund' container conventionally weighed 20 lispounds and would thus carry 600 'osmund' pieces. Cf. OM 5:2, n. 3; *KL*, XIII, cols 45–8. In 'very easily' 'levissime' is read for OM's 'levissimo'.

OM 6:9

[1-1] More or less verbatim from Seneca, *Nat. quaest.*, V 15, with minor omissions.

[2] The preceding is verbatim from Cassiodorus, *Var.*, IV 34.

OM 6:10

The vignette of a working mine, complete with demon, is self-explanatory.

[1] The preceding is more or less verbatim from Münster, I 15. The reference to Agricola is to his *Bermannus*, first published in 1530. Despite OM's evident use of German sources, Tillhagen, 'Gruvskrock', pp. 140–1, thinks his account of mine-sprites reflects Swedish notions.

OM 6:11

The picture partly illustrates the present chapter, partly adds to the description in OM 1:12–13; lightning strikes and exposes new veins of silver. Cf. OM 6:1 and 4.

[1] Virtually word for word from Paulus Diaconus, V 15.

OM 6:12

The vignette shows a moneyer and his journeyman (both left-handed because of the mirror-image woodcut), probably preparing dies. Crosses and crowns (including the three crowns of Sweden) are the chief symbols. The pile of roughly rectangular pieces on the right are the leathern 'coins' with silver studs in them mentioned in the chapter.

[1] Tokens of this kind are thought to have been current in Novgorod in the earlier middle ages and there are references to them in the sixteenth century. Legends with some resemblance to OM's report have been recorded in Scandinavia; their tall stories of treasure deposits that included leather pieces with silver pins or studs stuck in them appear to depend on some recollection of times when token coins of various kinds were in use. Cf. Granlund, 'Pecunia coriaria'; *KL*, XI, cols 73–4.

[2] Job 37:22; cf. OM Pref., p. 8, and OM 4:10.

[3] On *CM* west of Luleå a gold mine is marked by a black star and the legend 'Minera auri'; it is also referred to in *Ain kurze Auslegung* and *Opera breve* under litt. B. OM had presumably heard rumours of such a find, but he has no other comment on it. Some gold was recoverable from Swedish silver and copper (up to 12% from the silver of the Öster-Silfberg mine); cf. *KL*, V, cols 565–6.

[4] Based on Paulus Diaconus, III 6, whose source was Gregory of Tours, *Hist. Francorum*, IV 42.

OM 6:13

[1] Russian counterfeit coin was a matter of contemporary concern, and the problem figured in peace negotiations between Sweden and Muscovy in 1537. Cf. *Ain kurze Auslegung* and *Opera breve* under litt. C f; OM 4:5, 11:6, 20:2. In OM's 'money-hungry Greeks' there is perhaps a reminiscence of Juvenal, *Satires*, III 78 ('Graeculus esuriens ...').

[2] This is thought to refer to the introduction of a standard *örtug* (*solidus* in OM's Latin) of 8 pennies (*denarii*) in the time of King Albrecht of Mecklenburg (1363–89) and a period around 1400 of approximate parity between the *örtug* and the North German *pfennig*. On attempts at Scandinavian 'monetary union' cf. *KL*, XII, cols 78–9.

OM 6:14

[1] There was a rapid depreciation in Swedish currency from about 1500 to 1520.

[2] Otto Brakel, a cleric and merchant from Lübeck, was accused of smuggling debased metal for the moneyers of Sten Sture (regent of Sweden 1471–97, 1501–3).

He escaped with the loss of his goods and appealed to Rome in 1487; his case was still unsettled when he died in 1503. See Grape, *Det litterära antik- och medeltidsarvet*, p. 230, n. 114.

[3] Christian II was the first to issue such coins in 1518–19; Grandmaster Albrecht followed suit in 1520, Gustav Vasa in 1521.

[4] The debased coinage ceased to be legal currency after the meeting of the Swedish Estates in 1524. JM took part in that assembly but nothing is known of his contributions on financial policy.

OM 6:15

[1] Cf. OM 6:13, n. 2.

[2] A gold Swedish guilder was planned in 1497 and again soon after 1501; it is not certain that any were struck.

[3] A free rendering of Pliny, *Nat. hist.*, VI 24, 85. India is OM's addition.

[4] Aurelian reigned AD 270–75.

[5] Verbatim from Strabo, IX 2, 40; with OM's 'orationem' corrected to 'oratione'.

[6] This may refer to OM 10:15.

OM 6:16

[1] It is doubtful whether pure copper was ever used for coins, but there was often a good deal more copper than silver in what was officially a silver coinage.

[2] From 1524 Gustav Vasa reformed the coinage with issues of an *örtug* (of 8 pennies) and a coin of half its value, the *fyrk* ('groat'). An *öre* coin, worth 2 *örtugar*, was first struck 1522–33, but then not issued again until 1564. Cf. Granlund, 'Olaus Magnus som numismatiker'; *KL*, V, cols 40–1, XX, cols 719–24.

[3] Bears and iron clubs are not known as symbols on Swedish coins. The 'ears' of corn may rather be 'sheaves'.

[4] Gustav Vasa began to issue a *daler* ('dollar'; shortened from *Joachimst[h]aler*, cf. *KL*, VII, cols 580–3) in 1534; it had approximately the same value as the Rhenish guilder (also called a florin, though considerably smaller in value than the original Florentine coin). OM's numbers are an exaggeration, but large quantities were certainly produced: 107,848 from the Svartsjö mint in 1545, for instance.

[5] OM's Sarmatia is here taken to mean Poland. OM has Alaric for Athalaric.

[6] It is not clear what OM means by this reference to import of ancient gold coins.

OM 6:17

The picture shows a goldsmith's shop with a wealthy customer buying for his daughter.

[1] See OM 6:1, 3, and 7.

[2] The reference should rather be to OM 3:6 (and cf. OM 8:13).

[3] Cf. OM 6:4 and 12. JG observes, 'Whenever OM broaches the subject of Swedish gold, he says something different.'

[4] OM was probably thinking of copper from Falun, but in his day the silver mined at Sala produced more gold.

[5] Spelt 'silff schena' in OM here and in OM 8:13; *silvskena* means 'silver band or strip'.

[6] Cf. OM 8:13.

[7] The mistaken rendering of Latin *strepæ*, 'stirrups', as 'horse-shoes', in the Swedish translation (II 23; uncorrected by JG) has led commentators astray (as in *KL*, VI, col. 546).

OM 6:18

[1] Cf. OM 2:30.

[2] Skänninge had flourished earlier in the middle ages but declined after Vadstena got its charter in 1400; it suffered from serious fires in 1447 and 1466.

[3] See further OM 14:15–16. The Sw. form, Ture Lång (latinized Turo longus), is possibly a corruption of the name Roland. The figure in Bremen, from 1404, is the

oldest of the numerous Roland statues known. Cf. OM 14:15, n. 1; *KL*, XIV, cols 359–60.

[4] Cf. the vignettes to OM 14:1–2 and 9. Such crowns were typical sixteenth-century fashion.

[5] OM's Latin for 'of robbers or bandits' is 'schacorum aut latrunculorum'. Medieval Latin *sc(h)acus* is a synonym of *latro*, but the word also means 'chess-man'; while *latrunculus* is also classical Latin for 'pawn, gaming-piece'. OM's image is perhaps of a nation of 'paupers', as unadorned as the mere pawns of a board-game.

OM 6:19

[1] Nikolaus (Nils) Hermansson, a native of Skänninge and St Birgitta's confessor, became bishop of Linköping in 1375, died in 1391. A supplication for a canonization process was made 1414–18; his translation finally took place in 1515. *KL*, XII, cols 294–5.

[2] This tale of Ingrid was probably based on local Skänninge tradition. The date 1282 is otherwise recorded as the date of her death, not of her pilgrimage. Ingrid, of good family, became a Dominican nun in the early 1270s and lived with a few other sisters in a building by St Martin's church. The convent, endowed by her family and inaugurated in 1285, became an important religious and educational centre. Ingrid was enshrined in 1507. *KL*, VII, cols 406–7.

[3] Mechthild was probably one of the four Danish Dominican nuns from Roskilde who had joined Ingrid's early community.

OM 6:20

The picture is of a furrier's workshop with a customer. The man on the far right was modelled on, or shared a model with, the figure of St Luke on the title-page of Tyndale's Bible, printed in London in 1549. Cf. the vignette to OM 19:30.

[1] Reading 'De pellificibus', 'On furriers', for OM's 'De pellicibus'. Sweden's fur-trade, domestic and foreign, was massive; cf. *KL*, XV, cols 521–5.

[2] Probably in 1524 when OM spent eight months in Rome.

[3] The 'far south' is 'sub polo Antarctico' in OM.

[4] OM refers to most of the following fur-bearing animals in OM 18. The English follows OM in giving the list in alphabetical order. In OM some of the animals are entered twice under different names, e.g. both 'castores' and 'fibri' for beaver; the English does not attempt to match the duplication. Squirrels appear both as 'dossi' and as 'asperini', the latter presumably for *asperioli*.

[5] On the identification of OM's '(pelles) bisontium' see *KL*, XIX, col. 364.

[6] OM employs Latin *damula*, usual for fallow deer, for roe deer here and in OM 17: Pref. and 18:4; cf. *KL*, XIV, cols 542–6. Fallow deer were introduced in Denmark in the early middle ages but are thought to have come to Sweden only after OM's time.

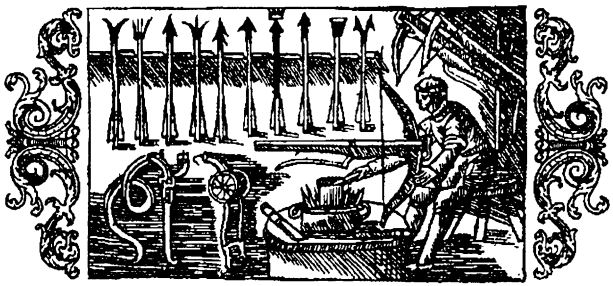
OM 6:21

[1] On the animals mentioned see OM 11:12, 18:5–6, 12, 16, 19–21. Experts say that successful imitation of ermine and lynx is virtually inconceivable. Pelts of the Karelian pine-marten were generally lighter in colour than those of Scandinavian specimens and may have been doctored on that account. Cf. *KL*, XII, cols 144–7.

[2] Squirrels, grey or greyish-blue in their winter pelt, have a white underbelly.

[3] OM inadvertently omits this negative.

[4] The methods of 'improving' pelts described above by OM are not entirely clear, though some of the information is doubtless genuine.



BOOK SEVEN OF OLAUS MAGNUS THE GOTH, ARCHBISHOP OF UPPSALA, ON WEAPONS OF WAR, THE PRACTICE AND CAUSE OF FIGHTING, AND PRECAUTIONS TO BE TAKEN IN BATTLE[1]

CHAPTER ONE

On the manufacturers of crossbows and arrows

IN Bk VII Pliny gives his opinion that it did not seem enough for Nature to have brought man into the world frailer than all the other animals, full of distresses and tears, and subject to innumerable calamities.[2] Man had himself to find out even more cruel expedients for shortening his already brief life, and this accords with the customs of nations scattered over the whole world. For the Scythians fight in one way, Africans in another, and Indians in yet another, employing different weapons furnished either by corrupt human nature or by frenzy.

Scythians
Africans
Indians

The peoples of the North, as I have shown above, use bows, crossbows, and arrows for this purpose, and there is hardly a native of those parts who is not supplied with weapons of that sort. These are for warding off enemy assaults and bringing down harmful beasts wherever they come across them, for instance, huge bears and wolves, against which they draw broad arrows with razor-sharp points, because of the thickness of their fur. They also have wooden arrows with wide heads for killing martens, sables, and squirrels; some with forked heads, for taking wild birds; others with a cutting head to pierce the hard feathers of water-fowl;[3] and others again to kill elks, or wild

Kinds of weapons

Reasons for weapons and arrows

Trees bent back for bows

asses, gluttons, foxes, and suchlike animals. But of these, and similar arrows propelled not by crossbows but by trees bent back, more will be set out below when I write about hunting various animals.[4]

CHAPTER TWO

On arrows and missiles of war

WHEN it comes to encounters in battle, the truth is known to everyone that the Götar[1] excel all others in the sturdiness of their crossbows, arrows, pikes and swords, for hardly anywhere in the world

Crossbows Swords

are more robust crossbows made, nor are there anywhere larger swords. The latter are aspired to with incalculable longing, presented, and owned by right of inheritance or as a gift, like objects even more valuable than silver.[2] Men feel no less desire for powerful crossbows and the winding wheels that go with them, by means of which the archer, crouching down, can draw them

Power of bows

with surprising speed. The iron-tipped bolt, shot with the crossbow's power behind it, flies with such force that it usually pierces a man armoured with a cuirass, or even one wearing double breast-armour,[3] as though it were of soft wax. Therefore they are used more often than other weapons among warlike peoples, and for a great many different reasons, too, which I must add later

Iron walls

where I write of iron walls.[4] Since commanders of a large force need such iron-tipped bolts when they are in the field, they are careful to take along many thousands of them,[5] for they are easily transported and are seldom launched in vain or discharged without inflicting serious wounds; these

Three-pointed

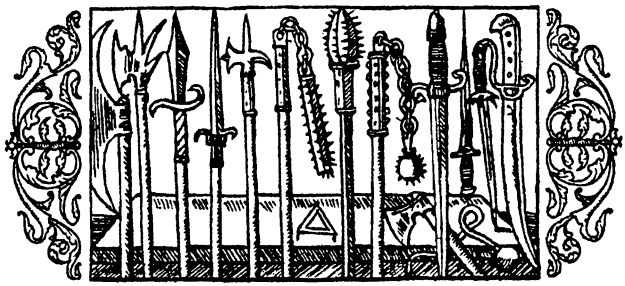
include ones which have three prongs and are dipped in poison to counter

Why arrows are steeped in poison

the madness and savagery of the enemy.[6] They do not use poisoned arrows lightly and not before ascertaining that the enemy's ferocity and inhumanity would spare no one.

Very small canes or reeds

In Bk XVI, Ch. 27, Pliny has an account of the canes or reeds from which arrows were made;[7] but no use of these has ever occurred in northern parts, nor could it ever have done, since the cane there never grows thicker than a boy's finger because of the intense cold. For this reason a single cane from Italy, such as old or feeble people prop themselves on, could be sold there as a luxury and paid for with an ox or a horse. Indeed, tough crossbows, imported into northern kingdoms by the craftsmen of Lower Germany,[8] are accepted in exchange for oxen or horses when there is no money to hand.



CHAPTER THREE

On various kinds of weapons

Weapons of beasts

WE know that Nature has armed animals for their protection and defence, some with teeth, some with horns, some with hooves, and others, in their less conspicuous parts, with spittle, stings, urine, and excrement;[1] [2]but man she has ordained to be weakly, with his wailing and groaning, liable to every sort of affliction, hampered from the very day of his birth, soft, weaponless, and the thrall of reason, as though he were fated to enter an arena and struggle to endure all manner of passions and wrongs.[2] But, instead of complying with reason, which recommends all that is salutary, he rises to take up arms with a more than animal ferocity. Hence, it seems, there were commendably thought out, as though by cruel butchers, all those excellent short cuts to wretchedness, disease, and death, not to speak of the secrets and tortures devised by the abhorred creatures who practise such skills. These secret instruments, which make me shudder, I must, for more reasons than one, avoid mentioning further and pass over in silence.[3] However, the weapons drawn above, and others, the Northerners collect as their chief treasures, more than honours, more perhaps than their lives. They preserve and add to them, and, in fact, regard them as the first, valuable element in a dowry, and in what is to be passed on by inheritance from one generation to the next. This is because these aids and implements will enable them to meet not only the assaults of enemies, but also those of savage beasts, especially in winter, provided, that is, they have not been eroded by rust in the summer.

Weapons of men

Short cuts to death

Instruments to be passed over in silence

More iron than gold

Cassiodorus

Meanwhile it is quite apparent that the weapons are richer in iron than they are in gold or silver. 'They are so brilliantly polished,' says Cassiodorus, 'that they reflect with life-like clarity the faces of those who gaze into them. The borders of these,' he says, 'come down to the sharp edges so evenly that you would think they had been poured out from a fiery furnace rather than wrought with files. In the middle they are channelled out with beautiful grooves, which it seems can be made to curl in wavy lines; here such varied shadows play that you would rather imagine that the bright metal had been inwoven with different colours; and these your black whetstone cleans up

Shining iron

and a very fine powder so diligently polishes that it makes the shining iron a mirror for men; this powder has been granted by the bounty of Nature to your fatherland to give you a unique reputation for this craft in the eyes of others. From their beauty these swords might be thought to be Vulcan's, who was seen to perfect artefacts of such outstanding grace that whatever article was fashioned by his hands was truly believed to be the work of a god rather than of a mortal man.'[4] Therefore now, as of old, they have their place as valuable presents in friendly interchange between princes, because on special occasions they are seen to be acceptable and accepted, just as they were kept for use and delight at the court of King Theodoric and other rulers, as Cassiodorus informs us at the beginning of Bk V. If anyone wishes to consult a work which deals with all, or very many, instruments of war, he should inspect Isidore, Bk XVIII, who seems to have left out nothing that can be taught about this oppressive yet interesting subject.[5]

Arms made by Vulcan

Names of weapons

Cimbri

The northern people, then, make use of thrusting swords, spears, daggers, sabres, and other weapons, not only at home but in other lands against dangerous beasts and bitter enemies. The Cimbri, however, like the Goths, fight with a three-pointed weapon, which at one time was familiar throughout the world.[6] Concerning the arms of the Persians, Assyrians, Thracians, Egyptians, and Indians, Herodotus has much to say and at great length; so also have Pliny in Bk VIII and Vegetius in his account of the matter.[7] With regard to the blunting or enfeebling of swords and their enchantment, Saxo, the Danish historian, cites in various passages events that are marvellous but not unbelievable, considering how such qualities appear to be inherent in many insignificant objects owing to the astonishing miracles of Nature.[8]

Blunting of swords

CHAPTER FOUR

On the instant summoning of the community to arms

Means of very swift summoning

YOU may see here a man riding a horse at full gallop and holding a staff, or stick, of which one end is charred and the other has a rope attached to it.[1] The reliable, straightforward meaning of it is this:

that, whenever enemies are looming on the seashore or at the boundaries of the northern lands, then at once, by order of the provincial governors, to which is added the agreement and advice of senior men-at-arms who have a good deal of experience in situations of this sort, a stick three spans long is entrusted, in the sight of everyone, to an active young man, who will bear it at headlong speed to this or that village or town with a proclamation such as the following: that on the third, fourth, or eighth day one, or two, or three, or all males without exception from the age of fifteen are bound, on pain of having their houses burnt (which was indicated by the charred stick) or the hanging of the master of the house or the whole household (the meaning of the rope tied to it) to appear at once with arms and ten to twenty days' provisions on such and such a river bank or field or valley, in order to hear the reason for their summons and the course which the provincial governor proposes to take.[2] And so the messenger, after carrying out his errand more swiftly than any post or courier, rides back at a gentle pace, bringing a token that he has done everything according to the law. The next moment one runner after another indicates, village by village, what must be done in the place appointed. By this means those who, according to their physical condition or vigorous years, appear fit for fighting meet in countless numbers within the space of a week equipped with weapons and provisions. Even aged farmers, because of their good counsel and the knowledge they have gained through taking part in earlier engagements, come into the file, just as women occupy the walls of cities or fortresses to throw down boulders or mortar on the attackers. These matters will be related below in their proper place.[3]

Stick three spans long

Age of fifteen

Old farmers as counsellors

CHAPTER FIVE

On guarding the roads and watching for spies

NOW, to prevent the enemy's army perceiving what the natives intend, they appoint watchers over the roads at suitable places, to allow no one to withdraw from the mass of people who have been summoned, and just as certainly to restrict the passage of enemy messengers when it is discovered they have come not to make peace but for purposes of spying. The natives do not wish the enemy to know in what numbers they have mustered, nor what spears and other weapons, such as pikes or arrows, they use; for sometimes those spears which are called *picche* in the Italian tongue are two or three feet longer than the spears or lances of the enemy.[1]

Situation in which enemies' messengers are to be detained

Length of spears

This happened when the Danish king, Christian II, was expelled in the year of Our Lord 1521 by soldiers under the leadership of the noble Gustav

Eriksson, who afterwards became king. With twenty thousand men from the mountains of Dalecarlia armed with pikes of this sort he descended to the plains of Västerås towards the end of May to make a violent attack upon the enemy, and in a trice he emerged as the conqueror. For the horror of Christian's cruelty moved to fury not one family or a single province, but the entire population, so that, quitting their homes to a man, they rushed out to take vengeance. The natural consequence was that, by a countless throng of people which assembled everywhere and also by the assent of noble, eminent men, this same Gustav was first proclaimed regent and then crowned king by three bishops who belonged to the communion of the Holy Roman Church. His deeds will be set out more fully elsewhere.[2]

How Gustav became regent

Nothing swifter or more conscientious could ever be devised than these messengers or runners for proclaiming that the mass of the people must congregate to do battle, for they are deterred neither by violent snowstorms, rain, heat, nor by the darkness of night from accomplishing with maximum speed the errand entrusted to them. The first of these gives the news to the nearest village and that village to the next, and so successively, until everyone in the neighbourhood or district has heard where, when, and for what reason they are to assemble. The governor will not be in a very safe position if he hesitates or wavers about what orders he should give to the multitude he has called out, for those who are to serve as soldiers for their country without pay wish to know there and then what they must accomplish for their own advantage.

Obstacles do not frighten men about to fight

Danger for governors

CHAPTER SIX

On the directions given to an assembled multitude

WHEN the massed inhabitants have gathered together, there soon appear the more experienced officers, who on this one occasion explain what is to be done, divide the men up into companies, squadrons, and regiments, explain in advance the lines of battle which are to be maintained, distribute the colours, explain the reasons for waging war, promise prizes and booty to the victors, impress upon them the excesses and

Practicality of the officers

Reasons for waging war

damage inflicted by the enemy, and make clear to one and all how essential it is to defend the freedom of their native land. With this short exposition they turn them all into courageous avengers of wrongs, and this is especially facilitated by their military apprenticeship at home, where they have learnt to cope with warlike engagements and to employ spears, arrows, slings, and swords, with which they have occasionally, or even more often, killed a personal enemy or put him to flight; and they know just as well how to teach themselves the necessary conduct of war as to learn it from others.

Names of weapons

So it comes about that, when they all bear down on the enemy at once and fall fiercely upon them, not unlike a harsh and grievous storm, they find means of slaying them, laying them low, capturing them, or causing total chaos in their foes' camp, whichever the lie of the land allows them to do. It is common custom for the people to engage in a mêlée or a running battle. But those who excel the rest in the handling of spears or in stationary fighting are drawn up separately, in order to give help if in the actual charge their own side should be thrust back or routed by the resistance of the enemy. Yet others are clustered in squadrons and block off the tracks to drive the enemy into an ambush or on to more uneven terrain. They either carry off or hold up his supplies to render him exhausted by enduring a day-long battle, or force him towards the dire peril of chasms and precipices, so that, when their opponent is cornered in a defile between cliffs, it will be an easy business to finish him off or take him prisoner. But most of all, as the fray grows hotter, they make sure of having new, fresh squadrons of fighters to oppose the enemy forces unceasingly, and so can pull back their own enfeebled men behind safe defences.

Violent way of fighting

Mêlée

Way to overcome the enemy

Fresh squadrons to be substituted

CHAPTER SEVEN

More about precautions to be taken by fighting-men

IT also frequently happens in any violent war that not only is an exhausted soldier given no opportunity to leave the fight but even a wounded man may not abandon the position he has taken up and allow himself to recuperate. This is the reason why in winter, on account of the frightful cold, and in summer, because of the sweltering heat, far more men die than in other seasons of the year. It is true, of course, that death is all the time removing those who take no heed of dangers, or who scorn the forces of the enemy as inadequate and engage with them rashly. [1]Smaller beasts, when they are in a tight corner, will grow frenzied and overcome bigger animals,

One may not leave the battle

Many commonly perish in a rash engagement and from despising the foe

Fox escapes

as, for instance, one fox will tear the flesh of many robust hounds and escape.[1]

But those who fight among enemy troops on horseback, whether their mounts be armoured or not, are subject to greater dangers. For the inhabitants who are defending their homeland, being extremely skilled in the art of shooting from their stout bows of horn,[2] practise a particular method of combat whereby they pierce the horse rather than its rider with those broad quarrels known as *skäkta*,[3] rightly calculating that if the mount has been wounded, the knight on its back will soon take a fall. Their supposition is correct. Once the iron-tipped bolt has penetrated its body, the steed begins to suffer unbearable pain, so that horse and rider crash to the ground, as I shall relate in many chapters further on.[4]

Horse is shot rather than rider

Skäkta

Infantry give cover to cavalry

Another custom they observe in fighting is this: where the terrain is rugged and mountainous the infantry, inasmuch as they are excellent marksmen, give cover to the cavalry. The lie of the land and employment of a trusty guide inevitably guarantee them a victorious outcome, whereas the opposite is the case when, in the course of war, guides lead, or rather lead astray, a spirited and well-equipped force into localities where ambushes are set. Livy testifies to the occurrence of this at the Caudine Forks, and Plutarch tells how it happened to Crassus at the hands of treacherous Arabs; his narrative presents an utterly deplorable and wretched spectacle, one worth the reading of princes, who should keep going back to peruse it again and again.[5]

Deceptive guides

Notable example to stop princes being cheated and shamefully killed

CHAPTER EIGHT

Concerning battles on the shore

WHENEVER hostilities are impending from the sea, the northern peoples, in particular the Götar, Swedes, and Finns, show amazing energy in their eagerness to fend off or meet the enemy fleet's attack. They drive their adversaries back from the coast by shooting arrows at long range from the natural bastions of the cliffs, or, if they have sailed closer in, pound them with boulders cast from a height, or at the harbour

Means of keeping enemy away from shore

mouths fix sharp, hidden stakes and thick rows of piles below the waterline, capable of blocking the foe's entry without need of defenders.

Hidden stakes

Sometimes, too, they make the enemy think that they are cowardly, and conceal themselves in the farthest arm of the forests so that, by raising the piercing sound of horns, the rest of the people, who have stayed in hiding, may be called together wherever the foe have come to plunder. [1]For in several places by the shore where there are ways into and out of the woods, then by cutting down saplings, bending boughs and brambles to lie horizontally and close together, and ramming thorn branches in amongst them, they have ensured that these fences serve as walls of fortification, which not only cannot be penetrated but are not easily seen through.[1] Within these forests, which appear to be prepared for the defence of every single harbour in the provinces, a great number of the inhabitants lie lurking. The more keenly their scouts set themselves to work, the sooner they engage the enemy, especially while their foes are evidently on the rampage, firing houses and devastating fields. For the inhabitants regard no crime as crueller than this, nor one that they avenge more fiercely with their traditional severity. Cassiodorus similarly records of the Gothic kings that it was their custom to punish harshly men who damaged cornfields or crops ripening to harvest.[2]

Stratagem

Sally from ambush

Fences bent down and thick

Great numbers lying hidden

Incendiaries are more fiercely attacked

Burners of crops worst of all

CHAPTER NINE

On the worst that can happen to an enemy's fleet

APART from this it quite often happens that a war fleet, putting in to the shore, is suddenly overwhelmed by mists of such opacity that it can neither proceed any farther, nor prevent its own ships colliding with each other, nor by hard effort or skill avoid unseen rocks below the surface. Indeed, it is even unable to make the open sea by using sail, because of the dreadful storms which accompany fogs of this kind; and, when these subside, they are commonly followed by such a calm over the waters that the fleet can hardly move from where it lies.[1] This again is sometimes succeeded by such violent thunderbolts and flashes of lightning that the very vessels are burnt and swallowed up in the depths.[2] Of such events testimony is frequently given in the annals of Östergötland, as also by rocks that remain here and there on the shore showing the cause of some such disaster.[3]

Murky fogs

Unseen rocks

Dreadful storms

Calm

Thunderbolts

Disastrous rocks

But should the enemy land with greater confidence to cut wood on smaller islands that lack defenders, he will hardly depart with his life or, at any rate, unwounded. For, when the owners of the islands descry that this menace is

Cunning arrows from the boughs of trees

upon them, among the bushes and foliage they attach missiles to secret cords that are forcibly stretched between the stouter branches of trees; these rebound with such power when set in action by a light touch that anyone who is unaware of them is very easily destroyed. Nor at suitable points is there any

Pits for wild beasts

lack of pits to catch wild beasts, dug with deep and cunning ingenuity. If anyone should fall into one of these, they will hardly draw him out with his limbs unmaimed.[4]

CHAPTER TEN

On mountain fires at a time of hostilities

Clouds of smoke

IN this picture there are two things that should be looked at carefully: one is on the summit of the mountains, namely the clouds of smoke rising from the thickly-piled heaps of logs, the signal for repelling attacks from the fleets of approaching enemies; the other feature to be observed is

Guard of horsemen

an alert guard of horsemen, in narrow passes by the shore and among the cliffs, to prevent the enemy leaping ashore. Since they make the speediest sentinels, those who live in the mountainous areas set going smoke signals at a time of hostilities. As soon as they see these warnings, others who live in

Beacons fired

the rest of the mountain region erect burning beacons in the same manner over a great distance to indicate that any man-at-arms, according to the number prescribed by the law of the prince and the nation,[1] must come without delay down from the plains in order to guard the coasts.

Light cavalry

Of these the light horsemen are the swiftest to arrive, with the task of barring the harbour approaches and shores against the enemy. They station the

Means of surrounding the enemy

mass of archers from the common folk where they may have a better chance of cutting off and destroying their adversaries when they are striving their utmost in the attack. That is to say, they await them in valleys or caves, or they veer away, as if fleeing, to places that are disadvantageous and unknown to the enemy, in an effort to draw off their pursuers to an encounter with stronger bodies of men. For when there is the pressure of emergency, such detachments will regularly increase to an immense multitude. There is no shortage, either, of scouts who are sent out in every direction to report on what front their

opponents are still threatening, so that, rushing with vast speed and in great numbers to meet them, once they have caused the foe to waver through good planning, valour, ambushes, necessity, desperation, or the security of their position, they may not only deprive them of victory but also fulfil their orders by putting the vanquished, according to military law, in fetters.

The vanquished

CHAPTER ELEVEN

On foreign examples of smoke signals[1]

CAESAR himself attests in Bks II and III of his *Commentaries* that in his war against Pompey he did not proceed without sending smoke signals between forts (as had been his custom earlier), when he had been leading his cohorts near river banks and some fresh reason for a new manoeuvre arose.[2] One may add to this, too, the methods used by the Greeks, chiefly those who live at Caphareus, whose custom it is to sail the seas during winter; they instruct the men who live on high land near the shores to kindle bright fires on the mountain tops. Enemy mariners who see these are rapidly drawn into headlong danger and destruction, and their fellows are terrified when they hear the crashes, and the shrieks of the dying.[3]

New cause starts a new campaign

Ruse

Some war leaders, however, think it an unwise policy, when they are about to commence fighting, to begin battles with a fire, since such a signal summons those who live some distance away to take their vengeance. This is certainly very true for those who are invading another's country, but not for any who are striving to defend their own, as was shown in the illustration above.[4] In this case the foreign assailants suffer higher casualties than they have inflicted on the natives, and before they hurl their lances often look round to see in which direction they may flee. Mercenaries are a treacherous and restless tribe, who can be more easily assembled than commanded. At the sight of danger they incline more towards mutiny than victory and hasten to run for their lives, and this merely when faced with the resistance of a meagre band of ill-armed folk.[5] Sallust states it as a well-known fact that it was a poverty-stricken people who fought most fiercely against the richest kings and princes, as is clear from the Servile Wars which were so often waged.[6]

Beginning war with a fire very dangerous

Character of mercenaries

Poor unarmed folk triumph over wealthiest kings

Care is taken, however, to see that villages and towns which stand on higher ground do not burn, because they are refuges for the men who keep watch, because they are the property of the inhabitants, and because they provide firewood for the mountain beacons, which can be seen far and wide among the enemy camps.[7]

Certain places are spared

CHAPTER TWELVE

On forest warfare

Places fortified naturally and by skill

THERE are also a great many defensive positions for holding off an enemy, quite conveniently placed in the forests both by Nature and by human skill. It is in the approaches to these that the natives are more eager to destroy or capture a hostile army hastening towards them than to struggle against it at the expense of good citizens' lives, with the hazard of arms and hand-to-hand slaughter. For they think it quite right to enlist the help of Nature to attack cruel opponents who despise every law of humanity, and who rage and do violence like beasts, respecting neither sex, age, nor rank, and sparing none. Hence, in order that the natives may lay low these enemies with greater ruthlessness among the tall trees of the forests, they cut almost through those alongside the road by which the enemy are to pass, and then lash the tops together with cords, so that, when they are pulled from a distance with ropes and cables, they topple down on the foe. By this means squadrons of horse and foot are, for the most part, killed on the spot, as though struck by lightning; or elsewhere, on a rough, narrow path, they are overwhelmed by stones hurled from above as though from high town walls; or else in the mountain passes they are transfixed by arrows and projectiles from other men posted in ambush and fall dead; or they are pierced by bolts from crossbows and other arrows shot from subterranean hollows in the sides of small hills.

With the aid of Nature foes are destroyed

Trees lashed together

Method of destroying the enemy

In traps like these the people, spurred on by bitter anger because their property has been burnt down by fires lit by the enemy, habitually kill the leaders of the armies; or on other occasions they enclose and bar them inside houses and set them ablaze, as I shall describe in the chapter about the punishment of arsonists.[1] The entrances to their underground caverns cannot be traced by foreigners, however hard they try, since these are cunningly set at angles among concealed rocks and twisting warrens. The furious hiss of a speeding bolt is certainly heard, but where it comes from is quite unknown. Now let any rash, proud enemy, whenever he plans to disturb the peace of others, discover where such caves of the Götar are to be found without my telling him.

Vengeance on arsonists

Hiss of bolts

CHAPTER THIRTEEN

On particular cases of this sort of war

SAXO, the renowned historian of the Danes, writing about the skill of the Swedes in felling forests, declares that, when Sven, the Danish king, was attacking everything with fire and sword during a perishingly cold winter and driving out a large number of the people into the snow to die, the men of Värend, that is the southern Götar, opposed themselves to that king in manly fashion. They lopped the trees and, trimming off the smaller growth which sprouted from them, used their trunks to block the neck of the ravine through which he was to pass. The defile was enclosed on every side by such huge labyrinthine walls of rock that the Danish army could not have made a detour round it without enormous expenditure of effort. When the king, impatient of delay, attempted, with more haste than wisdom, to demolish this piece of audacity with his cavalry, he laid himself open to a severer danger. When they came to the narrow gully, the horsemen dismounted, although they were only lightly armoured, since their hot haste had made them contemptuous of peril, and began to attack the pile of timber. As they did not grant the peace demanded by the natives, some of them were killed, speared through the head by the peasants, who fought from the pile as though from a wall, some were sent scurrying with sticks and stones, and some, racked by the cold, stealthily made off without the king's knowledge and slipped away to their homes. Sven himself changed course and took a short route back to his own realm of Denmark,[1] receiving his just deserts from the cold for his earlier destruction of the wretched common people's hearths and homes by cruelly burning them.

Danish king Sven

Men of Värend

Ways are blocked with tree trunks

Severer danger

Pile of timber

Disaster to the invaders

Short route

And we need not lack instances from abroad: Flavius Vopiscus comes to mind, who declares that the Emperor Aurelian suffered such a disaster at Placentia at the hands of the Marcomanni that the Roman empire was almost broken up. The cause of this was the cunning of the enemy, for, since they could not fight a pitched battle, they withdrew into very thick forests and from there, as the evening came on, put the Romans to rout. If a divine power had not saved them after careful public sacrifices had been performed, backed by the weight of a Sibylline pronouncement, the Roman empire would have been completely annihilated.[2] The great losses also suffered by Caesar in forests where trees had been felled by his adversaries, he frankly admits himself more than once in writing of his own campaigns.

Emperor Aurelian

Marcomanni at Placentia

Victory is obtained from a god by sacrifices

Caesar suffered many losses in forests

But it can also happen that, after those on the defensive have cut down trees and shut themselves in a kind of circle, they are quite unable to make a sally and consequently are put to flight by their foes and killed.[3] On sloping

Pointed ramparts

ground they will also set up against their opponents pointed ramparts, built of very hard wooden stakes, and cover them with brushwood, to check the leaps of horsemen by means of the treacherous spikes; or, when some have lost their lives on one side and some on the other, a bitter struggle arises, until, hemmed in by mountains and woods and overwhelmed by sling-stones and arrows, they are forced to bargain for their lives and liberty.

Enforced bargaining for peace

CHAPTER FOURTEEN

On cunningly deployed arrows and caltrops

IN the following ways, too, opportunity is usually afforded to multiply the disasters of war: whatever enemies the northern peoples cannot manage to eliminate or throw into confusion among the rocks or forests, these they craftily lure to open country by feigning flight or desertion, and with their iron-pointed arrows, which are shot high into the air and strike in their descent, they easily intercept or kill the advancing squadrons of horse and foot. In fact the Götar, who are, as I said before,[1] highly skilled in the practice of archery, take with them to war many thousands of a particular kind of iron missile a span and a half long, composed of fir-wood and razor-sharp iron in equal parts.[2] In this method of fighting they send these darts, or arrows, not straight at the horsemen who are charging, but up into the air, so that, by their natural weight, they turn and fall like an incalculable quantity of hail on to the enemy and finish him off, for in this way their impact has three times its natural force. In their descent they either pierce the helmet or breast-plate of the knights, killing them at once or putting them out of action; otherwise they fall on the heads or backs of the horses and make them ramp and snort and throw their riders. Alternatively, set in the ground with their pointed wooden hafts broken off, they are like stakes or spear-points which cling to the horses' hooves from beneath, so that they are left limping. Hence they display greater shrewdness in discharging their arrows not at the squadrons of cavalrymen, who remain unharmed as they approach, but at their mounts, because when a horse is wounded or falls, the rider is easily tumbled to the ground; and, if they do not fall there and then,

Feigned flight

Arrows falling from high up harm more forcibly

See below, BK X, Ch. 14

Horses not riders are assailed by arrows