

OLAUS MAGNUS, A  
DESCRIPTION OF THE  
NORTHERN PEOPLES,  
1555, VOLUME II

P.G. Foote



THE HAKLUYT SOCIETY

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# Olaus Magnus, A Description of the Northern Peoples, 1555

Volume II

Edited by  
P.G. FOOTE

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Historia de Gentibus Septentrionalibus

Romæ 1555

*Description of the Northern Peoples*

Rome 1555

VOLUME II

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## CONTENTS

<b>Book Six</b>	<b>289</b>
<b>Notes</b>	<b>312</b>
<b>Book Seven</b>	<b>317</b>
<b>Notes</b>	<b>343</b>
<b>Book Eight</b>	<b>349</b>
<b>Notes</b>	<b>398</b>
<b>Book Nine</b>	<b>409</b>
<b>Notes</b>	<b>463</b>
<b>Book Ten</b>	<b>475</b>
<b>Notes</b>	<b>514</b>
<b>Book Eleven</b>	<b>521</b>
<b>Notes</b>	<b>573</b>
<b>Book Twelve</b>	<b>582</b>
<b>Notes</b>	<b>610</b>
<b>Book Thirteen</b>	<b>617</b>
<b>Notes</b>	<b>670</b>
<b>Book Fourteen</b>	<b>683</b>
<b>Notes</b>	<b>716</b>
<b>Book Fifteen</b>	<b>725</b>
<b>Notes</b>	<b>763</b>



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

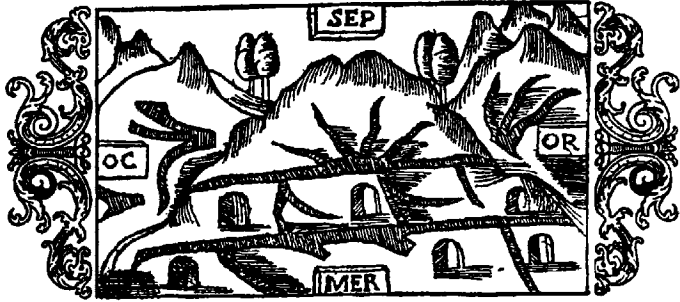
PREFACE

**T**HE 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.<sup>1</sup>

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.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup> 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,<sup>5</sup> 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.<sup>6</sup>



CHAPTER ONE

On mines and how they are discovered

Mines

**T**HE 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,<sup>1</sup> 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.<sup>2</sup>

Revenue of  
the treasury

Signs by  
which mines  
are to be  
found

Avaricious

Similarity

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,<sup>3</sup> 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

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,<sup>4</sup> 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

**F**URTHERMORE, 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.<sup>1</sup> 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.<sup>2</sup>

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.<sup>3</sup> 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.<sup>4</sup>

---

CHAPTER THREE

On the excavation of minerals

Undaunted

**H**OWEVER, 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.<sup>1</sup> 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.<sup>2</sup> 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.’<sup>3</sup> Again, in another proverb we have: ‘Gold that is seized must be guarded with steel.’<sup>4</sup> 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,<sup>5</sup> as is seen related above in the passage about the bartering of necessities.<sup>6</sup> 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.<sup>7</sup> 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?<sup>7</sup>



CHAPTER FOUR

On the differences among veins of metal

**V**EINS, 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.<sup>1</sup> 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.<sup>2</sup> Strabo records as much in Bk IV, about the Salassi, who bordered

Divisions of mountains and the reasons for them

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.<sup>3</sup> 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:<sup>4</sup> 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.<sup>5</sup>

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CHAPTER FIVE

On wheels, tools, and dangers of the workmen

Way to lift  
 ore

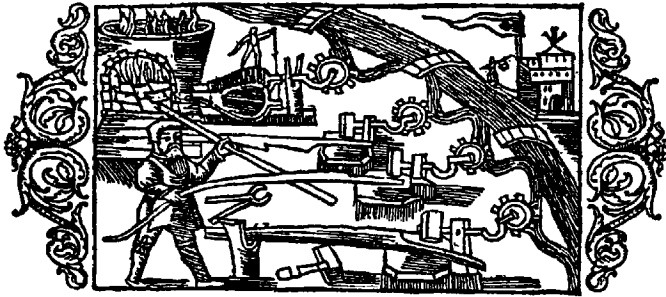
**I**N this last picture can be seen a very high wheel, or hauling machine, being rotated or revolved by men or draught-animals walking round in it. Apart from that, men are seen firmly seated upon ropes and descending into the depths, and in return vessels, or buckets, full of ore or water are being lifted up.<sup>1</sup> 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,<sup>2</sup> 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.

Miners  
 Outlaws  
 Laws of the  
 mountains  
 contain  
 many  
 different  
 clauses  
 Workers  
 unfrightened

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.<sup>3</sup> 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

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.<sup>4</sup> 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

**I**N 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<sup>1</sup> 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.<sup>2</sup> 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.

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<sup>3</sup> 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.

Detestable merchandise

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

**I**N the mountains that are very rich in ore the same metalworkers of the North have another method of smelting and working silver, copper<sup>1</sup> 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

Silver



## BOOK SIX

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.<sup>2</sup>

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.<sup>3</sup>

Copper

Force of winds more effective

---

## CHAPTER EIGHT

### More about the same metals

**I**RON 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.<sup>1</sup> 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.<sup>2</sup> Among the mountain dwellers of the North iron chips the size of two fingers are manufactured and very easily sold like market-wares in various quantities, that is, by the hundred, by the thousand, etc.<sup>3</sup>

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

**T**HE 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. <sup>1</sup>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.<sup>1</sup>

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

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

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.<sup>12</sup> And so he ends.

Discoverers  
of gold and  
silver



CHAPTER TEN

On demons in the mines

**I**N 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, stanches 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

Demons  
wander  
about

Dangerous

12 miners  
killed

Romans

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.'<sup>1</sup>



CHAPTER ELEVEN

On lightning in the ore-bearing mountains

Dangers to  
workmen

Stink

Beer as  
medicine

**T**HOSE 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.

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.<sup>1</sup> 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.

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



CHAPTER TWELVE

On minters and coinage

**T**HE 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.<sup>1</sup> For many centuries this currency multiplied in the royal treasuries of the Götars 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

Bartering goods

Money seldom or never used among the Northerners  
Why coinage permitted  
Leather money

Abundance of gold and silver

Job: 37  
King Gustav

Why gold is  
not allowed  
to dwellers  
in the north

Gold bars  
adulterated

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,<sup>2</sup> still lay concealed. These King Gustav is said to have discovered, and they were of the greatest value.<sup>3</sup> 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.<sup>4</sup>

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## CHAPTER THIRTEEN

### On counterfeiters of money and their punishment

Money is  
forged by  
Muscovites

Punishment  
for counter-  
feited money

Other  
punishments  
by boiling or  
hanging

Right to  
mint money

With a  
uniform  
standard

**N**EITHER 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.<sup>1</sup> 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.

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,

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.<sup>2</sup>

CHAPTER FOURTEEN

On the damage caused by base coinage

**A**FTER 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.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup>

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

Damage through false currency

Sten Sture the Elder Albrecht, Grand Master of Prussia

Christian II, king of Denmark *Klipping* 1521

Gustav

Christian expelled

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.<sup>4</sup>

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CHAPTER FIFTEEN

On the usefulness of lawful currency

**E**VERYBODY 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,<sup>1</sup> 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,<sup>2</sup> 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.

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.<sup>3</sup> But not even that concord could long be free of its trouble-makers, 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.<sup>4</sup> There certainly was at that time an amazing dearth, or corruption, in the royal treasury.

Poor treasury

Usefulness of good money  
Currency in conformity

Gold pieces

Roman currency  
Uniform currency displays unity  
Mint-workers

War of the Minters



## BOOK SIX

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.'<sup>5</sup> But something on this subject will be set out rather more fully in the books about wars further on.<sup>6</sup>

Potentates

Gift of orators  
Kingly exhortation

They are sold for money  
Where an army comes from

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## CHAPTER SIXTEEN

### On the superior currency of the northern kingdoms

**L**EATHER 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.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup> 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,<sup>4</sup> 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,<sup>5</sup> Theodahad, Totila, Vitiges, and Teia, are brought into the kingdom.<sup>6</sup> 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

Temples of idols

Deaths

Posterity insatiable

Hungarian artisans

River Vistula Staple at Gdansk

IT has been shown in the foregoing illustrations what a huge and inexhaustible amount of silver lies in the mountains of the Swedish kingdom,<sup>1</sup> 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<sup>2</sup>) 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.

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;<sup>3</sup> and yet I think it cannot be denied that a very large quantity of gold is found among Swedish copper.<sup>4</sup> 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.

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*,<sup>5</sup> 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.<sup>6</sup> Moreover stirrups, bridles, poitrels, and many adornments are fashioned from silver, but more for splendour than to provide stout equipment.<sup>7</sup>

Female  
adornment

Silver lasts  
for ever

*Silvskena*  
Small bells

Bridles

CHAPTER EIGHTEEN

On the silver ornaments of young women

**T**HERE stands in Östergötland a very ancient town named Skänninge, because at one time its edges were washed by a rushing torrent called the Sken.<sup>1</sup> 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 unfailling 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.<sup>2</sup> 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;<sup>3</sup> 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.<sup>4</sup> 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.<sup>5</sup>

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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

**I**N 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.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup>

Mechthild of  
Roskilde



CHAPTER TWENTY

On furriers<sup>1</sup> and the variety of pelts

**M**ANY 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,<sup>2</sup> 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<sup>3</sup> 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:<sup>4</sup>

Badgers	Goats	Reindeer
Beavers	Hares	Roe deer <sup>6</sup>
Bison <sup>5</sup>	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.

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## CHAPTER TWENTY-ONE

### How to recognize disguised furs

**T**HE 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.<sup>1</sup> 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;<sup>2</sup> 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<sup>3</sup> 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