

ROMAN MINING LAW

with particular reference to Britain and Derbyshire

David Elkington

**ABSTRACT:** An edict passed by Vespasian at the request of Spanish miners restricted the output of lead from British mines. Mines were initially worked by the legions, then handed over to individuals or to companies to run - but all were strictly controlled by a government official - the Procurator. The Lex Vipasca, found in Portugal, supplies us with valuable information regarding the laws on mining and miners.

Two tablets are in existence - found in 1876 and in 1906 near Aljustrel in Portugal, which record the laws which were enforced in the mining district of Vipasca there, and from these laws, or from what remains of them, we are able to deduce how Roman mining law was effective throughout the whole of the Roman Empire, including Britain.

The Romans mined lead in a number of provinces in the Empire - Britain was conquered late - in AD. 43. Until then, the mine-owners in Spain had been doing very nicely operating in their own areas, - at some expense - and producing a satisfactory output of lead which they exported throughout the rest of the Roman Empire. Spain was in fact the largest producer of lead by the time the British mines opened in the mid 1st century AD. The mines of Gaul and Germany were not so prolific and did not provide the Spanish producers with much competition.

However, in AD. 43, Claudius the Emperor invaded Britain and within six years pigs of lead were being produced on the Mendip Hills in Somerset bearing his inscription (CIL, CII, 1201; Tylecote 1986 Table 39, Nos. 27 and 17; Elkington 1976 p230, nos.1 and 5). The mines had been operating there in the Iron Age for the Lake Villages of Meare and Glastonbury nearby have produced lead fishing net sinkers. The scale of production there was probably small, but the Second Legion, which had been responsible for the conquest of the south and southwest of Britain started operations on a larger and more efficient scale. These products had an immediate effect on operations in Spain. Alarm was spread there by the speed and amount of lead-production in Britain. In Spain the mine-owners had had to lay out considerable expenditure in driving vertical shafts and horizontal adits into the ore-bearing rock. This in turn gave rise to the need for more expense to be paid out in drainage equipment and the like. In Britain however, the ore was found at or near the surface of the ground and so the vast expense was not necessary. The ore was obtained with considerable ease.

It was no wonder that the mine-owners of Spain were concerned. In alarm they wrote to the Emperor Vespasian. As a result we read this passage in Pliny the Elder's Natural History (XXXIV, 164-5):

We make pipes and plates from black lead\*, which is mined with great toil in Spain and in all the divisions of Gaul, but occurs in Britain in the surface stratum of the ground in such abundance that the amount refined is actually limited by law.

This reference quite clearly implies that a law was passed in order to restrict the output of lead in Britain. It is interesting to note therefore that pigs of lead from the Mendip Hills of Somerset - and the pigs of Roman lead are our main source of information regarding mining activity under the Romans - mostly bear inscriptions datable to the early period of Roman occupation - up to and including the reign of Vespasian (AD 69 to 79) (Elkington 1968 p147-236).

We have only a few pigs of lead datable to the reigns of Titus (79-81), Domitian (81-96), Nerva (96-98) and Trajan (98-117). Thus it would seem that the edict from Vespasian must have had the desired effect as far as the Spanish mine-owners were concerned.

The relevant dates and numbers of extant pigs are:

AD 48- 79	30 years	30 pigs	
79-117	38 years	14 pigs	
117-161	44 years	32 pigs	(Elkington, 1968 p123)

\* "Black lead" is lead ore as we know it - galena - whereas white lead was tin.

Initially, the mines in Britain seem to have been opened and then operated by the army. We have the evidence from more pigs of lead from Somerset and from South Wales, that the Second Legion operated the workings there for a spell (Tylecote 1986 table 39, p84; Elkington 1968 p178). One of the pigs of lead (exported from Somerset) found at S. Valery sur Somme, indicates that the mines were operated by the Second Legion during the reign of Nero (AD 54-68) (CIL, XIII, 3491).

This pig of lead must come from the earlier part of Nero's reign however, for in AD 60 another Mendip pig of lead shows that the mines were under the control of an imperial lessee - Gaius Nipius Ascanius (Elkington 1968 p175).

**CONDUCTORES** - It seems to have been the practice for the Army, having begun the mining activities, to hand over the workings to lessees. We know quite a lot about the lessees, for the Aljustrel tablets tell us some of the laws under which they operated, and the pigs prove that it was the practice for the lessees to move from one mining area to another. The same Gaius Ascanius is found later in Flintshire (Tylecote 1986 Table 39, p74; Elkington 1968 p176). Another lessee, Tiberius Claudius Triferna, moved from Somerset up to Derbyshire, for pigs of Derbyshire lead bearing his inscription have been found both at Matlock and also at Pulborough in Sussex. Regrettably only one of these five pigs (that from Pulborough) still survives.

The mines could be leased to lessees for tenures of five years. The practice led to the need in Rome for a large staff of officials to supervise the administration.

The lessees then endeavoured to exploit the ore as much as possible during their five year tenure of the mine. In Spain they extracted only the richest ore with little regard either for the efficiency of the operation or the safety of the workers. In Greece ore that contained less than 10% of lead was thrown away or left as pillars to support the roofs of the galleries (Davies 1935 p5).

Lessees from Derbyshire whose names are recorded on pigs from here are:

TIBERIUS CLAUDIUS TR [IFERNA]  
PUBLIUS RUBRIUS ABASCANTJUS  
GAIUS JULIUS PROTUS  
LUCIUS ARUCONIUS VERECUNDUS

**SOCIETATES** - The lessees could work the mines on their own, or they could form a company - a *societas*, run by partners - *socii*. Such companies are known both in Somerset where the *societas Novaec* ... operated, as well as in Derbyshire, where the *societas Lutudarensis* worked the mines. Each partner, *socius*, had to undertake expense in the mine in proportion to the amount of his share. If the partner wanted to leave the partnership he was entitled to a refund of his portion of the equipment. If, on the other hand, a partner was unable to meet his commitments, then the partnership accounts would be published in the forum for three days, after which his share would be withdrawn and the mine would belong to the remaining partners. The procurator would enforce this (*Lex Vipasca* below).

**PROCURATOR** - Whether the mines were operated by the Legions, or by a lessee, or by a company, the revenue was strictly controlled for the Emperor by the Procurator of mines. Locally a fort watched over the area to stop any irregularities - like that at Brough on Noe in Derbyshire, Charterhouse in Somerset, Brough on Stainmore in Cumberland- whilst in London, the procurator, the chief finance officer for the province of Britain, made sure that the correct amount of revenue was forwarded to the Emperor. This Senior Imperial Official, the Procurator, was first appointed by Augustus. He would either be of equestrian rank, the level below that of senator, or, more rarely, an Imperial Freedman - an influential civil servant who had formerly been a slave. He was responsible directly to the Emperor for all the mines in the province, or even two provinces, regardless of whether they were of Imperial or Senatorial status. He it was who ensured that duty amounting to half the ore extracted was forwarded to the Imperial treasury, the *fiscus*. This sum was in addition to any rent which had been paid on the mine. A stamp of the Imperial Procurator has been found in London, and this bears the inverted inscription

---

M. P. BR.

---

M(etalla) P(rovinciae) B(ritanniae) (Merrifield 1969 fig. 15)

Stamps of Imperial Officials have been found impressed into the sides of several pigs of Roman lead (Elkington 1969 fig.15)

---

I M P

L R A D

---

The procurators had under them a staff of slaves who were secretaries, commentarienses and tabularii, registrars and book keepers, dispensatores - treasurers, arcarii - public revenue controllers, probatores - examiners and inspectors of mines, together with a staff of technicians, a praeses fodinae (foreman), and a machinator - engineer, who supervised the workings of the mines. The procurator had supreme powers over people in the mining area except those of life and death. The mining staff under the procurator was so vast that provinces became known as either "mining" or "non-mining" provinces.

Under the state system, therefore, mining concessions were leased out under the Empire to lessees, conductores, usually of equestrian rank, who had taken the place of the Republican publicani. The publicani, the publicans mentioned in the Bible, had been great profiteers, and the new Augustan laws at the end of the 1st Century BC. made it more difficult for these to gain their profits. The right of granting concessions to lessees or partners was held by a committee of censores, and they received from the lessees a tithe for the fiscus, (the Imperial treasury), and a tithe for the dominus, the owner of the land, if the mine was on private land.

The whole of the mining settlement, not merely the mine, came under the control of the fiscus, the Imperial treasury. The lessee paid for his lease of the mine, and thus accepted strict control of the mine under the procurator. This control covered both the mine shaft and the pithead settlement. The costs of the administration were met by the rents which the lessee paid. The fiscus then claimed, as duty, one half of the ore extracted in addition to the rent which had already been paid on the mine. So long as production at the mine continued, the lessee was secure in his tenure of the mine, but if the mine was left idle for six consecutive months, then he lost the tenure. Any new occupier would take over the mine, but had to inform the lessee within two days (Lex Vipasca below).

Mines were usually acquired from their former owners by purchase or default. Some were confiscated, as were the mining possessions of Sexton Marius, the richest man in Spain, by the Emperor Tiberius after Marius's execution - as we read in Tacitus:

The charge was incest with his daughter. But the real cause of his ruin was his wealth. This became clear from Tiberius' personal appropriation of his gold- and copper- mines - though the state was ostensibly their confiscator. (Annals VI p18).

**OCCUPATOR** - Within the mining area, concession boundaries were vertical, and private citizens had to pay a levy for the use of the ground to the lessee. The lessee could sell his portion of the mine for as great a profit as he could acquire, provided that his own debt to the fiscus was fully paid up. An occupator had the right to choose a place for prospecting, to erect a tablet in order to stake his claim, and then had to inform the lessee within two days of his occupancy.

It seems likely that the procurator would have reserved the right to assess each mine's value on its own merits before fixing the purchase price. The 4000 sesterces mentioned in the Lex Metalli Vipascensis would presumably have applied to the Vipasca mine alone.

Whoever made a claim to start work in a mine had first to pay the price of occupation and within twenty-five days amass a working capital, and begin work immediately. If he failed to do so, or if he began work immediately, and then subsequently abandoned it for ten consecutive days, then the occupancy of the mine was again forfeited.

Likewise, if the renewal fee for the right of occupation was not paid, then the mine was forfeited. Lessees who sold their mining rights to another had to inform the procurator.

The occupier obtained just half the shaft, and then could start extracting the ore. The other half, which belonged to the fiscus, was set aside for him as soon as he paid the requisite sum, which he had to do before he smelted any of the ore. If he did smelt the ore before having paid the purchase price, then his tenure of the mine was confiscated, and the whole mine sold by the procurator, one quarter of the proceeds going to the person who had informed about the misdemeanour. Similar rewards were granted to informers who gave information leading to conviction for treason.

The law laid down that five shafts had to be sunk in each mine, and that once the first

was sunk, then the other four had to be sunk likewise and worked (this accounts for the large numbers of shafts sunk on some sites).

As reckless exploitation had previously done serious harm to the mines in Spain, there were strict rules drawn up controlling the workings and there were laws which guarded against the theft of ore. For example, no ore was allowed to be moved from the mine between the hours of sunset and sunrise. Defaulters were fined 1000 sesterces, slaves were beaten, and thereafter kept in chains, and freemen had their property confiscated, and were banished from the mining area. Ore-bearing rock from other mines could be imported into a mining area for smelting or cupelling or other processing on payment of one denarius for one hundred librae. Defaulters were liable to have their ore confiscated.

Spanish pigs of lead were generally in the region of 100 librae in weight (32.7 kg., or 72.1 lb), whereas their British counterparts were usually double this ( 65.4 kg., or 144.2 lb.) (Elkington 1976 p192).

**MINE SAFETY** - Mines had to be properly shored up, and the props regularly renewed. Anyone who damaged a prop, or who rendered the mine unsafe was severely punished by the procurator. Punishment too awaited the man who interfered with the drainage tunnels and ditches, for these had to be left untouched for a distance of fifteen feet on either side in a copper mine, and sixty feet in a silver mine. It was forbidden to extract or even prospect for ore within this limit. One wonders how one of the lessees from Somerset and Derbyshire fared. Tiberius Claudius Triferia has already been mentioned above. In Somerset in 1956 a Mendip farmer unearthed on his land four pigs of lead which had been carefully concealed after 'falling off a cart'. Three bore the name of the lessee stamped into the pig, and on one of these pigs the name had been stamped in not once, but three times. When the pigs had been analysed, it was discovered that the pig with the three stamps had a higher silver content than any other lead pig yet discovered in Britain (Elkington 1976 p232, nos.14-17; Tylecote 1986 Table 39, nos.64-67). It seems that the said Tiberius Claudius Triferia had had the pigs buried, intending that an accomplice should unearth them and find immediately the pig which had not been through the de-silvering process. A cache of four pigs of lead is rare, although four were found together in Sussex. Unfortunately, three of the four pigs of lead have been lost, but the fourth, barely readable, does bear an interesting name in its surface - that of TIBERIUS CLAUDIUS TRIFERNA (see also Boon 1971 p453-503).

The two tablets of bronze, found in 1876 and 1906, give us considerable details about laws governing the mining areas. They refer to the mining area of Vipasca in Portugal, but we may take it that the Roman laws would be the same, or extremely similar, in other mining areas throughout the Empire.

The tablets are 10mm thick, but over 50 cm (1ft 6ins) in width, and almost 1.5 m (4ft 6ins) tall. We call them the Aljustrel Tablets after the region of Portugal where they were found (Translation by Tenney 1937: see Appendix 1 and 2) and the Lex Vipasca - the Roman name for the area. Originally, they were thought to have been Vespasianic in date, but more recently they have been found to be Hadrianic - AD 122-138.

The Aljustrel Tablet is inscribed on both sides, but the second side is merely a duplicate of the first. The tablets deal with the organisation of the mines and of the mining areas, and lay down strict laws for the levying of taxes, and the conditions under which mines were to be leased, and so on.

Lessees employed mercenarii as well as slaves, and when more than one lessee was working in an area, legislation was introduced to prevent competition in the employment of workers who lived in the district. The total number of workers employed in the mine was also restricted. The procurator had to be informed of the number of workers to be employed in new or renewed workings and in all the mining processes attached thereto. Slaves were used in the mines, as can be seen from evidence from Spain, and the damnatio ad metalla, the condemnation of convicted prisoners to the mines for crimes of violence, was a virtual death sentence.

Half of the children of each miner were obliged to work in the mines. Later this regulation covered all the children. Soldiers were also forced to work in the mines - as Tacitus says; Rufus had sunk a mine in the territory of the Mattiaci to find silver. Its products were scanty and short-lived, though the troops suffered and toiled, digging channels and doing underground work which would have been laborious enough in the open. This forced labour covered several provinces. Worn out by it, the men secretly appealed to the Emperor Claudius (AD 48), in the name of all the armies, begging him to grant honorary triumphs to commanders before giving them their armies (Annals, XI 20).

Slaves formed themselves into guilds under the Imperial aegis. The Lex Metalli Vipascensis shows us how laws governed the conduct not merely of the mine, but also of the mining area. Revenues were derived in the mining areas partly from taxes, and partly from

monopolies. Auctioneers, cobblers, bakers, fullers and the like had to pay the fiscus for the right to carry on their trade at the pithead settlement. Leases were granted to these tradesmen and no other person was allowed to take on this work except for his own benefit, or for that of his master or fellow-slave. The pit-head baths were also covered by legislation, and the baths manager had to keep in a stock of wood and fuel to keep the furnace going, and had to grease the brass valves every month. He was not allowed to sell fuel from his stock, except for twig-ends which were of no use for the furnace. The baths were to be open in the morning for women, and in the afternoon for men. There was an admission charge, but Freedmen, slaves, children and soldiers were allowed in free.

The greatest boon must have been the concession granted to Schoolmasters - they were exempt from taxation!

#### REFERENCES

Boon, G.C. 1971 Aperçu sur la Production des Métaux non Ferreux dans la Bretagne Romaine. In Apulum IX, Bucharest, pp453-503.

CIL - 1863 - Corpus Inscriptionum Latinarum

Davies, O. 1935 Roman Mines in Europe. Oxford.

Elkington, H.D.H. 1968. The Development of the Mining of Lead in the Iberian Peninsula and Britain under the Roman Empire until the end of the Second Century AD. Unpublished thesis, Durham University.

Elkington, H.D.H. 1976 The Mendip Lead Industry. In Branigan, K. and Fowler, P.J.; The Roman West Country. Newton Abbot.

Merrifield, R. 1969 Roman London.

RIB (forthcoming) Collingwood, R.G. and Wright, R.P. Roman Inscriptions of Britain. Vol.II. Oxford.

Tenney, F.R. 1937 Economic Survey of Ancient Rome. Baltimore.

Tylecote, R.F. 1986 The Prehistory of Metallurgy.

#### DISCUSSION

Q. How can anyone lose a pig of lead?

A. It is possible to lose sight of them. They can be recorded as having one location, but then they can be moved, or perhaps not appreciated by their current owner. They can even be left in the house when it changes hands - as has happened in the case of two pigs I know of in London. One pig in Derbyshire was being used as a doorstep outside a farm when I saw it twenty years ago.

Comment by Lynn Willies: Roman ingots vary a great deal more than we previously appreciated. A recent excavation of a wreck off Brittany has recovered a large number of very varied Roman ingots, some probably from Derbyshire - very few of which are like those recorded previously. Possibly ingots found in this area have been assumed modern, not Roman, and remelted.

Q. Do you discount the assumption that EX ARG on the side of a pig simply means being without silver.

A. Yes, basically because Professor Smythe produced a paper in which he showed that some pigs of lead bearing the inscription EX ARG still had lumps of galena clinging to them. It is possible, he concludes, for galena to survive the smelting temperature of 300 C., but not the cupelling, or de-silvering, process of 1100 C.

Q. How could the Romans assay?

A. They cupelled lead to a highly efficient degree, extracting the silver. Three of the four pigs from the cache at Green Ore in Somerset still had traces of silver in them. The fourth pig had 18oz (per ton) remaining. The amount of silver in natural ore depends on the area of the country from which it comes. Some ores contain 100 oz per ton.

Q. (D. Cooper?) - Is there any definite historic evidence as to how much of the industrial laws are missing?

A. No, I do not think so.

Q. Is there much evidence of Romans working tin, etc.?

A. Professor Pennington: Tin was worked in Cornwall, before the Romans got here, from St. Michael's Mount. A great lot of fiction has been written about it. The only tangible evidence is the finding of the remains of tin-smelting in some of the Iron-Age Village Settlements, though whether for export through St. Michael's Mount we do not know.

---

Appendix 1

THE ALJUSTREL TABLET

Translation by F.R. Tenney, reproduced by permission of Johns Hopkins Press, Baltimore

of the One per Cent Sales Tax

The lessee of these sales by auction within the boundaries of the Mining District of Vipasca shall receive one per cent from the seller, exception being made to those sales made by the procurator of mines at the command of the Emperor. The lessee shall receive from the purchaser one per cent of the price of the mines which the procurator of mines shall sell.

If, after the auction has begun, everything shall be purchased with one bid, the seller shall nevertheless pay one per cent to the lessee, his partner, or his agent. The seller shall announce beforehand to the lessee, his partner or his agent, if he wishes any articles withheld from auction. The lessee, his partner, or agent shall exact also one per cent of the value of that which has been withdrawn during the auction.

With reference to him who shall have placed goods in the hands of a crier; If the crier shall not have sold them at auction, but if, within ten days during which they shall have been in the crier's hands, he shall have sold them at the price agreed upon, the owner shall nevertheless give one per cent to the lessee, his partner, or his agent.

Unless that which, in accordance with this section of the law, is due the lessee, his partner or agent is paid, settled or secured within three days after the debt shall have been contracted, the seller shall pay double.

Of the Auctioneer's Fee

He who has leased the auctioneering concession shall furnish an auction within the boundaries of this district. From him for whom sale of one hundred denarii or less is completed, the lessee shall receive two per cent; for a sale of over one hundred denarii, one per cent.

He who shall have given slaves to the auctioneer for sale shall give to the lessee, his partner, or his agent, if five or a smaller number to be sold ... denarii for each slave; if a greater number be sold three denarii for each slave.

If the procurator of mines shall sell, or lease, any property in the name of the fiscus, for this property the lessee, his partner or his agent shall furnish an auctioneer.

He who shall have published a list with the name of each thing to be sold shall give to the lessee, his partner or his agent one denarius.

Of the mines which the procurator of mines shall have sold, the purchaser shall pay to the lessee one per cent of the price. If he shall not have paid this within three days, he shall pay double. The lessee, his partner or his agent shall have the right to take

security for this.

He who shall have sold through an auctioneer mules, asses or horses of either sex shall pay for each animal three denarii.

He who shall have offered for sale through an auctioneer slaves or any other property, and the latter shall have sold them at the price agreed upon within thirty days, the seller shall pay the regular fee to the lessee, his partner or his agent.

#### Of the Bath Management

The lessee of the baths, or his partner, shall entirely at his own expense warm and keep open the baths, which he shall thereby hold in lease until the following June 30th, from sunrise until noon for women and from one in the afternoon until eight in the evening for men, subject to the approval of the procurator who will be in charge of the mines. He shall properly furnish water running into the tank over the heating chambers, up to the highest mark, and in the plunge, for the women as well as for the men. The lessee shall charge each man half an as, and each woman an as. Freedmen and slaves of the Emperor who shall be in the service of the procurator, or receiving pay from him, shall be exempted; likewise minors and soldiers. The lessee, his partner or his agent, at the termination of the lease, shall hand over in good repair the equipment of the bath and everything which was assigned to him, except that which has been worn away with age. The bronze articles which he shall use he shall properly wash and dry and coat with fresh grease at least once every thirty days. If any necessary repairs should make impossible adequate use of the bath, the lessee shall deduct (from his contract price) an amount in proportion to the loss of time. Aside from this, if he does anything else in the course of administering the bath he shall deduct nothing. The lessee shall not be permitted to sell wood except the ends of branches which are not suitable for burning. If he violates this rule, he shall pay one hundred sesterces to the fiscus for each sale. If this bath shall not be properly open for service, the lessee shall pay to the procurator of the mines a fine of not more than two hundred sesterces for each time it shall not be open for service. The lessee shall have wood in reserve at all times to last ... days.

#### Of the Shoemaker

He who shall have made any shoes, or thongs which shoemakers are wont to make, or who shall have nailed in shoemaker's nails, or who shall have sold them or who shall have been convicted of having sold within the boundaries anything else which shoemakers are wont to sell, shall pay to the lessee, his partner, or his agent double the amount of the sale. The lessee shall sell nails in accordance with the law of iron mines. The lessee, his partner, or his agent may take security (from other shoemakers). No one may repair shoes save when he mends or repairs his own or those of his master. The lessee shall offer for sale ALL varieties of shoes. If he shall not have done this, anyone may have the right to purchase where he wishes.

#### Of the barber

The lessee shall have this privilege, that no one in the village of the mining district of Vipasca, or within the district, shall practise barbering for profit. He who shall have practised barbering in this manner shall pay to the lessee, his partner, or his agent, for each use of his razors, ... denarii, and his razors shall be forfeited to the lessee. Slaves who shall have served their masters, or their fellow-slaves, shall be exempted. Travelling barbers, whom the lessee shall not have sent, have not the right to practice barbering. The lessee, his partner, or his agent may take security from them. He who shall have refused the giving of security, for each refusal shall pay five denarii. The lessee shall furnish one or more workers in proportion to the demand.

#### Of the Fullers

No one shall have the right to clean and press, for pay, unworn or soiled garments save him to whom the lessee, his partner, or his agent shall have leased or granted this privilege. He who shall have been convicted of having acted contrary to this regulation shall pay to the lessee, his partner, or his agent three denarii for each garment. The lessee, his partner, or his agent may take security.

#### Of the tax on mining dumps and rock piles

He who within the boundaries of the mining district of Vipasca shall wish to clean, crush, smelt, prepare, break up, separate, or wash silver, or copper dumps, or dust from dumps,

or rock fragments purchased by measure or by weight, or who shall undertake work of any nature in the quarries, shall declare within a period of three days the number of slaves and free labourers whom he is sending for this work, and shall pay to the lessee on or before the last day of each month. If they shall not do this, they shall make double payment. He who shall bring within the boundaries of the mines copper- or silver- bearing rock from other mineral workings shall pay to the lessee, his partner, or his agent one denarius per one hundred pounds. For whatever amount, in accordance with this section of the law, he shall owe to the lessee, his partner, or his agent, and shall not have paid, or have given security for payment on the day on which payment shall have been due, he shall make double payment. The lessee, his partner, or his agent may take security, and whatever part of this dump (or dross) shall have been cleaned, crushed, smelted, prepared, broken up, separated, and washed, and whatever prepared stones and slabs shall have been worked up in the quarries may be confiscated unless he shall have paid what he shall owe to the lessee, his partner, or his agent. Slaves and freedmen of operators engaged in smelting silver or copper, who are working in the smelters of their masters or patrons, shall be exempted from this charge.

#### School Masters

Schoolmasters shall be untaxed by the procurator of mines.

#### Seizure of mines or of claims

He who within the boundaries of the mining district of Vipasca shall seize or hold a mine in order to establish legal possession under the terms of the law of mines, shall within two days of his seizure or occupancy report to the lessee of this tax, his partner or his agent.

Appendix 2

#### LEX METALLIS DICTA

#### To Ulpianus Aelianus, greeting

In accordance with the will of the liberal and most sacred Emperor Hadrian Augustus, he shall make immediate payment. He who shall not have done this and who shall be convicted of having smelted ore before the purchase price has been paid in the manner indicated above shall be deprived of the share due to him as occupier, and the entire mine shall be sold by the procurator of mines. He who shall prove that the colonus has smelted ore before he has paid the price for the half share belonging to the fiscus shall receive the fourth part.

Mines of silver shall be exploited in conformity with the regulation which is contained in this law. The price of these mines shall be maintained in accordance with the will of the liberal and most sacred Emperor Hadrian Augustus, namely that the usufruct of that portion which belongs to the fiscus shall belong to him who first shall put up the price for the mine and who shall present to the fiscus four thousand sesterces.

As has been stated above, he who shall have reached ore in only one of five shafts shall continue work in the others without intermission. If he shall not do this the right of occupancy shall revert to another.

If a mine sold by the fiscus shall lie unworked for six consecutive months, the right of occupying it shall be open to anyone, provided that when the ore shall be extracted therefrom, one half shall be reserved to the fiscus, according to custom.

It is permitted that the occupier of mines shall have such partners as he wishes, provided that each one shall undertake expense in proportion to the amount of his share. If a partner shall not do this, then he who has undertaken the expense shall make out a statement of the expenses undertaken by himself, shall place this statement for three consecutive days in the most frequented spot of the forum, and shall announce through the public crier that each partner must bear his share. The partner who shall not contribute, or who shall wilfully do anything to avoid his share or who shall deceive one or more of his partners, that man shall not retain his share in the mine, and his share shall belong to the partner, or partners, in proportion to their payment of the expenses.

And to those coloni who have undertaken an expense in a mine in which many partners are

interested there shall be the right in law of regaining from their partners that which appear to have been asked for in good faith.

The coloni may sell among themselves, at as great a price as possible, those shares of mines which they have bought from the fiscus and for which they have paid the full price. He who wishes to sell his share, or who wishes to purchase, shall make a declaration before the procurator who is in charge of the mines. In no other way may purchase and sale be effected. It is not permitted him who is indebted to the fiscus to give away his share.

Those to whom the ore belongs shall convey to the smelter from sunrise to sunset that which lies extracted at the minehead. He who shall be convicted of having carried ore from the mines after sunset and before sunrise shall pay to the fiscus one thousand sesterces. If an ore thief be a slave, the procurator shall beat him and shall sell him with the condition that he be kept perpetually in chains and shall not reside in any mining camp or district. The price of the slave shall go to the owner. If the thief be a free man, the procurator shall confiscate his property and banish him for ever from the mining districts.

All mines shall be carefully propped and supported and in place of old material the colonus of each mine shall substitute a new structure.

No one shall touch or injure the pillars or props left for the purpose of strengthening (walls and ceilings), nor shall he wilfully do anything as a result of which these pillars or props shall be less firm and passable. He who shall be convicted of having injured, weakened ... or having done anything wilfully which shall render the mine unsafe, if he be a slave, shall be beaten with rods at the discretion of the procurator and sold from his master under the condition that he shall not reside in any mining district. The procurator shall seize the property of a freeman for the fiscus and banish him forever from the mining district.

The person who works a copper mine shall avoid the ditch which carries water from the shaft and leave untouched a space not less than fifteen feet on either side. He shall not be allowed to harm the ditch in any way. The procurator shall permit, for the purpose of discovering new deposits, a drift from the ditch, provided that the drift be not greater in depth and in width than four feet. It is not permitted to prospect for ore or to extract ore within fifteen feet on either side of the ditch. He who shall be convicted of having violated the regulations concerning the drifts, if he be a slave, shall at the discretion of the procurator, be beaten with rods and sold from his master under the condition that he shall not reside in any mining district. If a freeman transgresses, his property shall be taken by the procurator for the fiscus and he shall be banished forever from mining districts.

He who works silver mines shall avoid the tunnel which carries water from the mines and shall leave untouched not less than sixty feet on either side, and he shall exploit the mines which he has occupied or received in assignment in accordance with the regulations; nor shall he go beyond the boundaries, nor pile up crude ore, nor extend his drifts beyond the limits of the mines assigned ....