

## "A Very Precise Description of the Mountain and Mines of Potosí, and of their Quality and Workings"

By Nicolao Benino (of Florence)

Relación muy particular del Cerro y minas de Potosí y de su Calidad y labores, por Nicolás del Benino, dirigida a don Francisco de Toledo, virrey del Peru, en 1573. (fragment of an account with preceding letter, also in BN Madrid Mss. vol. J.58, ff.26-32.

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Most Excellent Lord:

Your Excellency has ordered me, most curious prince that he is, to make a report of the mines of the mountain of Potosí, and according to what I have been able to understand, so that with it and according to the model that by decree of Your Excellency it is made, one may better understand the beginnings, propriety, and basis of it; a sure thing, Most Excellent lord, that I have been placed in admiration in considering that an understanding so profound and an intellect so high, chosen in Spain by the Royal Majesty among so many princes and lords for the government of these kingdoms, to order me, who has it so low among so many and so exalted as there are in this court, wise and well known favorites of Your Excellency, a business such as this. Much more so being born Italian, in that most ancient and renowned city of Florence, so distant from these kingdoms, from where I was exiled from my parents without wanting to do it, for fleeing in my tender youth from that very great division there was between that senate and the most illustrious house of Medici, with which in sanguinity I am so close, by whose factions so much blood has been let in past times. And I take it as a happy outcome and the result of special divine grace to have given me the fortune of being able to make my own fatherland that of the Spanish nation, subject, first, of the Royal Majesty of the most Christian emperor don Carlos and succeeded by don Felipe, his only son, princes and natural lords of these kingdoms and many others so powerful and renowned in all the world; in whose service for more than forty-two years now have I fought with my all, serving them with the fidelity that is owed to such powerful and Christian kings, although my efforts have been short of my will; such that all these causes disheartened me in such a manner that it did not seem right to take up the pen so uncertain of getting it right, whose spirit returned knowing the favor that I received of Your Excellency in ordering me to do it. And now that it is done, I have had another suspicion that has caused me great fear and I have been anxious thinking of reasons sufficient to excuse me from presenting it before such high and most excellent royal authority; and now that I do it, it is with all the humility I could manage, and thus I plead humbly that Your Excellency receive it, and if I have erred in doing it, for going on too long and being prolix, it is caused by considering that Your Excellency wants to use it in order to give news to His Majesty, and beyond this, to communicate with princes and lords, most illustrious debtors and friends of Your Excellency; and so that for that one may choose from it that which serves, as princes are accustomed to do from among the flowers of their gardens, that with that and with the model it would be sufficiently understood; and in remuneration for such a tiny service and from the great desire I

have to do greater things in service of Your Excellency and in dealings of greater importance, I only hope that among the abundant mercies Your Excellency count me among the number of faithful servants of your illustrious house, the same which may Our Lord preserve and make prosper for many years with increase in subjects. In La Plata, 9 October 1573. Most Excellent lord. - I kiss the feet and hands of Your Excellency - Your humble servant, Nicolao de Benyno.

The mountain of Potosí, most excellent lord, is seated in the highest constellation of these kingdoms, between the city of La Plata and the site of Porco, ancient mines discovered and ordered to be worked by the Incas, lords that they were of these lands, six leagues from the said site and eighteen from the said city. It is at twenty degrees [south latitude], a most frigid and exposed land, and so sterile that in no less than twelve leagues around, at least, neither plantings nor trees yield any fruit; but it is in a good district to be provided with necessities, although the ports are far away, the nearest being some ninety leagues, and due to the population of Potosí of Spaniards and natives, it would be supplied with the greatest difficulty and cost had God not provided a remedy, which is by way of carriage with the livestock of the land [llamas], because since there are so many it is sufficiently supplied and with great ease, as Your Excellency must already have understood. The mountain has a height of half a league and is quite steep and rough to climb, and in climbing it one is short of breath, not only humans but also the beasts and cavalcades, and thus they have been seen to be much winded. It has a circumference of a league; in all its height it is live rock and only on top does it have a covering of earth, which at one stature or two, or a little more [depth] one finds the firmness of it, which is why it was at first difficult to discover the mines. It has a most beautiful aspect, and with being placed among many other mountains and surrounded by but separate from them, it has the advantage over all, and only on the western part does it have connected to it a flank of a low cordillera; such that due to its being of this form, it has resulted that in the mines worked thus far they have not encountered the least water, very great impediment for the working of mines. And aside from this, on the north part, at the foot of it there sticks out a little pointed mountain the Indians call Guaina Potosí, which means to say something like 'his eldest son.' It is not too high. And lastly, it is located in the land of the Charcas Indians of the Chaqui faction [*parcialidad*], old Indians of the *encomienda* of Gonzalo Pizarro, and entrusted to him by the Marquis his brother [Francisco], governor that he was of these kingdoms and discoverer and conquistador of them.

After Gonzalo Pizarro left on the expedition to the Land of Cinnamon, where he had gone while the marquis, his brother, was still alive, in order to discover that land on the shoulders of the governorship of Quito, from which he returned in the year 1542, when in that time these kingdoms were governed by Licenciado Vaca de Castro, sent by the Royal Majesty of don Carlos, our lord, of glorious memory, after having passed between him and Vaca de Castro some things in the city of Cusco, which it does not seem right to treat of in this report, he retreated to this province of the Charcas and to the city of La Plata, where he had his house, along with some friends who had gone out with him on the Land of Cinnamon expedition, where for most of the time he was in the village of Chaqui, which is four leagues from Potosí; and as Hernando Pizarro, his brother, held in *encomienda* the allotment [*repartimiento*] of the Chichas and a very rich silver mine in the mountain of Porco, with the powers of attorney that he had from Hernando Pizarro he had all of it as if it were his own, and thus he went back and forth many times to the said site, and he always passed alongside the mountain of Potosí, as it was right on the path from

the city of La Plata, and there they would ordinarily stop due to the abundance of game there was, of partridges, deer, and guanacos, going out as they did to hunt them.

And as this province at that time had fame for having in it rich mines of silver, because of those of Porco, Gonzalo Pizarro sought them out with much urgency, both by way of Indians as by way of Spaniards and their servants who searched for them; and going along in this it came to his attention how on one flank of the mountain of Potosí, on the western part, there had been discovered some veins of silver ore, and later he went to them, and seeing them he ordered that huts be made there and stayed there and brought the trappings to work them and to smelt, where they worked for a certain time and the ore they found was of little or no value; on whose site even today there appear the high, thick walls of the buildings they made, which are those Your Excellency will see from the heights of the mountain of Potosí. And while Gonzalo Pizarro was engaged in this labor, going and coming to it, there came about the dealings of his rebellion, from which he left with his friends he had with him to the city of Cusco, where he committed the crime of that rebellion, as Your Excellency must have full report, and the labors of those mines ceased until today, since they were a thing of no profit, no person has worked them since. And this was the first beginning from which this illustrious mountain became known, although by that it did not acquire the least reputation for richness, because up until then there was none.

The uprisings occurring afterwards, of which it does not seem appropriate to treat, beyond that Gonzalo Pizarro being in Quito during the year 1545, and being in the site of Porco one Diego de Villaroel, who was handling the business of Captain Diego Centeno and had some *yanacunas* and among them one who was called Chalco, native of the Jauja valley, whom I knew and who died not many years ago in Potosí, this one, going about in his adventures or hunting, discovered the vein called Centeno's, of which the said Diego de Villaroel made registry, and it was called by this name because Villaroel registered in that vein a mine for the Captain Diego Centeno. There was later found in it much ore on the surface of the land, and on that there registered many persons who were present and those on behalf of others who were absent.

As word spread of the discovery of these mines and of their richness in the site of Porco, where at that time there were a few Spaniards, some of them set out to discover others on the mountain, sending their *yanacunas*, and others going in person to it, and within a few days one Pedro de Fuentes discovered the Veta Rica [Rich Vein] and made registry of it, and many staked them out according to the order they had at that time, which was not based on so much reason as it has later had, as time and experience have given rise to ordinances for it; yet although these have been in place they have still not been so clear that there has not been need of much better order and limits, which upon understanding them Your Excellency is now ordering them reformed. This vein they named, and it is presently called Rica, with good reason, both for the great abundance of ore it has had as well as for being the richest there has been and for this vein running much longer than any other. They found the ore in it at a very shallow depth, because all who were present say that in many places it was found at knee depth, and in great quantity and very rich, and in places, pulling up straw, from their roots hung some 'potatoes' of the fatness of a nut or bigger of an ore called *tacana*, extremely rich; and from many I have learned and come to know a marvelous thing, and it is that from the diggings that yielded the discovery of this vein all the way to the crown of the mountain, it runs straight, where later the vein appeared to go as a little hillock of earth more than a stature high, which Nature produced in the form of a ploughed

furrow-hump, which revealed the whole vein, it seeming as if that ore wanted to spill out, and it clearly signified that there lay the richness that was later seen, from which there came so much silver as is notorious.

The business of the discovery of the mines being in this state, Captain Diego Centeno, in the city of La Plata, seeing the rebellion of Gonzalo Pizarro and the great scandals that were taking place in the kingdom against the service of His Majesty, in the said city and being a justice of the peace [alcalde] in it, killed Francisco de Almendras, who was placed there by Gonzalo Pizarro as his lieutenant, and he proclaimed in the voice of His Majesty and gathered all the people of the province in order to resist the force of the tyrant, as he did, to which cause all, or the greater part, of the people who were at the site of Porco capable of waging war, he ordered gathered, and many other persons who had been drawn by the fame of the discovery, which was why at that time not much work was done, although from diverse parts there came many people and all for the gain they hoped for; and the works they did were no more than for each one to snatch whatever he could of the rich ores left by the absence of their owners, who were engaged in the service of His Majesty, and others off taking care of their business affairs. And going about in this, one Juan Sánchez discovered the Vein of Tin, and he also made registry of it, and it was called by this name because the ore from that vein had a tin alloy, for which reason no one could profit from that vein for many days, as it was quite difficult to refine, and it was thought to be of little value and much cost.

And in the space of a few days, one Rodrigo de Benavente discovered the Vein of Mendieta, being a youth of sixteen, and it was called by this name because after being registered and staked out by many persons, the mine of the discoverer [i.e., the initial claim] fell to Lope de Mendieta, then a householder in the city of La Plata, by purchase he made of it, the same which had a great sum of ore, and so rich that it was as marvelous as all the rest of which has been treated.

These are, most Excellent Lord, the four principal veins of the mountain of Potosí, and from which has issued all or the greater part of the silver that from that time until today has been taken out of this mountain. And because the other veins are not so famous nor of much importance, although in some there has been much profit, since no one remains to give a report, in the next chapter I will offer a brief record of them in this manner.

Towards the western part, a bit off to the north, there was discovered a vein called Oñate's, which, although it has yielded some profit, it has been in such small quantity that it need not be noted among the esteemed. And a little farther on, and lower, towards the west, there have been discovered and worked certain mines in a little nipple of the mountain they call San Juan de la Pedrera. And in another part, towards where the sun rises, another vein was discovered by Francisco Lobato, which has also had profit and silver has been extracted, but not in such quantity that one would have to give it much value. And lower down, along that same stretch, is a vein named for Licenciante Polo, as he was the discoverer of it, the same which has had much and quite rich ore. And on the backside of the mountain, towards the south, there is a vein named for Cristobal López, and another they call 'Of the Flemings,' and another called 'Of the Blind'; this one is taken for the best, for having extracted from it very rich ore, and many people judge it to be the Veta Rica, just corresponding with that side. There are many other veins in the

mountain and in many parts of it, high and low and on the flanks, but I make no mention of them as they are of little value and I take them to be of little or no yield.

After this discovery took place, the fame of it ran throughout all these kingdoms, and many persons, separating themselves from the wars and tumults of the land, diverted everything they could from that and came to these mines and all of them sought to bring people, Indians and *yanaconas*, and many caciques as much from this province as from that of Collao and from other parts [all] sent Indians to settle that site, for the great profit that followed from it for them, such that in a short time there came to be a substantial population of *yanaconas* and Indians subject to caciques, and likewise of Spaniards; although, with Gonzalo Pizarro being in Quito, he heard that Diego Centeno had killed Francisco de Almendras and followed the service of His Majesty, and he later sent Francisco Caravajal, thinking he would take the advantage and conserve his opinion, and as Caravajal was coming from so far away and mustering people, when he arrived in this province he discovered that one Alonso de Toro, who in Cusco was a lieutenant of Gonzalo Pizarro, had come to this province to resist Captain Diego Centeno; among whom, and later with Caravajal there occurred many engagements, and all retired to Potosí to regroup, because, with the fame of the richness of the mines, there were gathered there considerable supplies and merchandise and many people seeking to enjoy profits from silver, and on several occasions the captains of the tyrant entered, and on others the servants of His Majesty, and every time this happened it was with great damage, because they took the people, plus the silver and supplies and merchandise they found; and in that time the silver one could extract was so great that one took it for the most certain thing in the world that nothing like it had been seen, for which reason silver was taken as a thing of scant value.

It occurred later, after many incidents having to do with the tyranny of Gonzalo Pizarro had passed and occurred, that there came to this land the Licenciate Gasca, sent by the Majesty of the Emperor, our lord, the same who put an end to his tyranny and had him defeated in the valley of Xacaguana and punished with all his henchmen, and all these kingdoms placed in tranquility and reduced to the service of His Majesty; and since all the land from Quito to this province was allotted by President Gasca, all or the greater part of the caciques and householders, both from this province as well as that of Collao, Cusco, Guamanga, Arequipa, and other parts, sent many Indians for the development [*beneficio*] of the mines of Potosí, and likewise many soldiers of those who had served His Majesty, the same which brought many *yanaconas* whom they had acquired in that expedition, and it was in such a manner that within a short time Potosí was quite populated with Spaniards and natives; and the silver that flowed in that town was, as they say, as if something from a fable, the stuff of dreams and all taken for incredible.

And with this wealth so great and never before heard of, it was great the reputation and esteem that the mines had, and very great was their value, to such a degree that a great many portions of the four veins were sold at much elevated prices, such that there was a section of fifteen yards in the Veta Rica that was sold for 18,000 pesos; and everyone who could buy a portion in them did so, from twenty yards to fifteen, to ten, even five, and those who managed to have one thought they had an entail [*mayorazgo*], and they were not deceiving themselves, because if the ore lasted according to what they found in that time, there was no price you could place on what a mine could pay; and since later it began to come to a decline, there arose many lawsuits over the veins and sales of them.

[NB: from here forward the manuscript is damaged, with missing sections marked by ellipses.]

Coming, then, most Excellent Lord, to treat more specifically of the working of these mines and of other things touching upon them, I say that as I have noted, only four principal veins...*as* of Potosí, which is the Centeno Vein and that of Tin...the Rich, which, as I have said, has always had great advantage over the others, both in the girth of the vein and its extent, as...rich, and it is clear the other three have also been... *do a ella*. This vein runs north-south very straight...rising of the sun, such that from where it comes up to where it goes down it bathes it. And although the ore was quite heavy and of...all equal, in some parts it was quite rich and very thick...and in others quite narrow and not so rich, and thus it varied in twenty [?]*...rida* in many ways, and in part it had, and I saw it, nine [yards] of ore in width, so rich, that of five parts, four, according to what was later discovered, were of silver; and in some places that I knew, many people affirmed having seen thirteen feet of this ore, which to know it in that time as is now known, it was not much the amount of ore that the Indians weighed out to their masters, fifty and 100 marks, from which today they would take out 30,000 or 40,000 pesos; and I will not go on with this anymore so that it will not be taken as something from a fable. And the Indians also were not as skilled in the refining of all that as they are now; but with all this it was inestimable the profit they extracted, and even if one takes into account the greatly excessive expenditures the Indians had to make in that time, which was a thing to take as incredible, because with a jug of wine being valued at that time at 100 and 150 pesos, and a barrel of conserves 40 and 50, and a blanket and shirt this and much more, and likewise all the supplies and commodities, yet without complaint and with such great abundance and liberality they bought everything on account, as they do today but only with the most tiny things that are sold in the square, a thing never seen or heard of in any part of the world.

The Tin Vein runs almost the same course, North-South, as the Veta Rica, but it ends up much more to the West [*poniente*]; from the head part it drops down to the southwest, and from the part where it begins it drops down to the northeast. This vein, after the refining of its ore was known and understood, which was most difficult at first due to the alloy of tin, was held in great esteem, the ore of it being most rich, but it has been narrow and only the yolk [*yema*] of the ore, when it is found, has been and is of value, and it does not have and never has had any type of *llamperia* [loose, silver-bearing material], and the ore is born of a type of bedrock so hard that it has been and remains very difficult to work and of great cost in tools; and as I have said, that vein is so narrow that in many parts of it a person can barely get through. I have discussed all this, Most Excellent Lord, so that Your Excellency may understand the difference there is between the mines that are separated from where the sun rises and of the North-South trend from those that are with the Veta Rica, to which I attribute this great variety.

The Vein of Centeno is much closer to the Veta Rica and runs the same course, North-South; but it is somewhat more detoured from where the sun rises. It has much ore, and very rich, but it does not...run with as much space from above to below, and it had roughly the same...*s* as the Veta Rica.

The Mendieta Vein is better *p*... of the sun than all the rest, but it runs a different course...starting from there it already goes trending towards the north, it goes somewhat *c*... and

going straight along that way it trends toward the south...[in terms] of length it is second only to the Veta Rica...and it is a very rich and wide vein; but the best part is... aside from the 'discoverer' and the mines associated with it, they have been quite poor in ores, although in some parts there has been great fortune.

It is a notable thing, most Excellent Lord, that of these four veins the best part of them has been in a certain place that, it appears to me, was in the very center [*en el comedio*] of each, because running along the upper part of them towards the south and along the lower part towards the north, what dropped down most toward these parts was less ore, and much poorer. And of this we have special experience, because the Vein of Centeno dropped down so much along the flank of the mountain, its ore always diminishing in such a way that it came to change into a rich galena; and thus there have been so many varieties that many times while pondering it the people who understand it lose their judgment and understanding of them.

Up to this point, most Excellent Lord, these past chapters have treated the beginnings of the discovery of this mountain and of its veins and mines, and before passing on to give a report of the conclusion of their works and the digging of the adits and other details, it has seemed to me convenient, as nothing remains to say about its wonders, to give an account of that small mountain that is seated on the north part of it, which I said at first was called Huaina Potosí. On the same there have been many diggings, those persons who were granted them thinking they would discover veins of rich ore like those that were discovered above in the heights, and there are many of them of 12-15 statures [deep], in whose works they found much loose ore in large and small pieces, quite rich, from which they extracted much silver; but all that which they worked was in loose earth, without discovering veins nor the host rock in which veins of ore naturally grow, much less true bedrock. And this ore that they discovered could not be followed, as it was simply loose, and later they would lose it and working on it again turned costly. And thus they continued to the depths to which I have referred until everything was lost, and with this and with the little firmness of the works, being in 'dead earth' [*tierra muerta*], it was abandoned by all the people that worked them; and others, prospecting with the steel-tipped stick [*barreta*] in hand in diverse parts of this mountain and on its flanks, discovered this type of ore in great quantity, the same which was followed until all of it was depleted. And on this matter there have been many and diverse considerations...*sas*, considering that this silver ore of *l*...those formed and founded in firm bedrock...by reason of which there was a scarcity of ore that was found in this mountain...being that it was formed where it was discovered without *ju*... and others, basing the case with greater...when God, Our Lord, for the sins *c*...general, that at the time when the waters reached their limits, according to the precept, and...*D*...how the mountain of Potosí from the beginning of the earth...was blessed with the richness of this ore, and with the impetus...the waters receded, carrying behind it that ore, and due to its weight, which is great, it remained in that place or places where it was discovered, and later, with the passage of time, which was so many years, there formed above it a layer of earth, and the same ore with its humidity purified itself and even grew to the size of those great pieces; to which opinion and appearance I subscribe for the reasons given and because towards that part there drop down the springs of the Rica and Centeno veins, which had the ore beginning at the surface of the earth; but as they are secrets and wonders of the Divine Majesty, the same which are incomprehensible, one cannot arrive at certainty beyond concluding that these are His wonders.

Based on what has been treated, most Excellent Lord, one may now understand the plan of this mountain, the discovery of mines, their courses and the richness they have had in silver, and everything else touching on the wandering veins and the little profit and great number of diggings they have sunk; it remains now to treat the works they have done in them since the year [15]48, when Gonzalo Pizarro and his henchmen were punished for the treason they committed against the service of their prince and natural lord, to which end are stopped all those who, fooled by the Devil, consider or attempt such acts of rebellion and tyrannies. The same which works have carried on until today, which is twenty-five years on, in which all their owners have always gone on deepening these mines, each one in his own holdings, where in the four veins was discovered the riches that have been discussed in various places, from which they benefited very little in comparison with what it [originally] was, which has been sufficiently covered, and it is in this manner: as I said in its place, the ore was not evenly spread over the surface of the land and near it, and the same was true in the following of the works towards the depths, because in some parts in one measured yard of depth it ran very rich, and in the vicinity of this yard, which carried along with it a bit more, more or less, it did not run the same, and thus it went varying according to this order in diverse ways, from great richness to medium, to little and none; and the most marvelous was that which 'played out in reverse' [*jugaba al trocadero*]...in going deeper one part jumped into another, in a way that...one week towards one part they ceased the *vem*...borders where there had not been anything...greater quantity, and figured in this way...*es* Your Excellency what ordinarily happened...*res* forms of great richness to less...this form and rule was general as...in the lowest and least profitable veins...ran...the work and richness all the mines in general...up to forty-five statures and especially those of the four veins, and in this weight the ore began to diminish, both in quantity and quality, such that in only a few statures' depth one came to lose it almost entirely, the whole veins remaining and extremely hard to work, and always the works were continued, although [in digging down] many statures they discovered little or no ore, so much so that with the passing of time they came to lose everything and they entered into a great drought that lasted many statures and later they began to encounter some humidity, and in it ore, although not as rich as that of the surface; and thus in this way they have continued the works, sometimes losing this ore and other times locating it, in the form of pockets, until today, such that all the mines, especially those of the four veins, are sunk to very great depths, from 100 to 120 statures, although the deepest has always been and is at present the Veta Rica, and of this, most Excellent Lord, my own is of the greatest depth, as at present I have the workings at more than 140 statures, for which reason it is a great effort to carry on with the work, and it is almost impossible for it to carry on, and I as an eyewitness can affirm this as a certain thing, which it is; because the veins going straight as they do, pushed down towards the center, leaving aside the declination made, as I will later describe, and the ladders being where they descend to them in the same manner, it is huge the effort of the descent and climb out, because it is inevitable that the Indians have to remove the excavated ore and waste that results from the works by carrying it out of the mines, because by no means can it be removed in large or small carts nor by any other means; and since all the force falls upon the arms, as the ladders are of rungs crossed through braided cowhide and willow cables, with the grip of the hands and the strength of the arms they climb from rung to rung, the Indians coming with their loads lying upon them, and in this way one may easily understand, even those persons who have not seen it, the excessive labor that in this work comes to those who do it, although the Indians are so agile and free-moving in them that they do it, it seems, with great liberality, and it is great the merriment that they bring among them in the works they do.

These veins ...surface of the earth go dropping and declining...the greater the richness of them, the more they carry...[some] drop a lot, and others less, and others are more...dropping towards the west, but when...causing the lack of ore and poverty of *c*...being the natural course of the declination toward the sun, and so much...on and richness of the ore. I have treated, most Excellent Lord, all this...first, so that one may understand this marvel, which is truly great...because it is understood that there is no instrument of ore carts and *po*...may remove the ores and tailings outside as a result of the [variety of?] the steep angles, by which the works have perforce been made, so it has been necessary that it be done in the form and manner that is here described.

The mines being sunk to the depth which Your Excellency will have understood, it is impossible to continue the works from the surface where their laboring commenced, and thus it was necessary to provide another order and plan for working, and thus it was that I, as Your Excellency understands very well, in the year 1556, and at the beginning of it, considering that these mines had of necessity come to suffer this difficulty and inconveniences, I began in company of other persons, neighbors of my mine on the Veta Rica, to open an adit or cave in the flank of the mountain across from where the sun rises, directing this work straight into bedrock, following the course East-West, which direction is contrary to that which the veins run, carrying it north-south, such that following the work by this contrary direction, East-West, it comes to cross the Veta Rica, which by no route can one err. I began this work so low on the flank and with a certain declination since I found the mountain was not disposed to allow it to be done in another way, such that when it came to encounter the Veta Rica it would be at more than 170 statures' depth, leveled from the start of the work from the surface, and by it one would commence, as if from scratch, a new work on this Veta Rica, entering by it; and not only would one be able to work my mine and that of my companions, but also many others in our contiguous stretch and from section to section by the vein above and below, with the greatest facility.

And also by it one could pass ahead in a short time to catch the Centeno Vein, and also the Tin, and have in them the same effect of the work as the Veta Rica; the same which is impossible to do from above without opening another adit on the west side, which for the rough disposition of the mountain, it would be a most difficult work and quite most costly, and finally, that even in fifty years it would not be finished. This work runs eight feet wide and the same high, as Your Excellency has seen, who as prince and curious lord, entered into it, as I understood it, with great contentment, I lighting it, as a result of the darkness, with a taper, giving an account and explanation of the work, as Your Excellency was served; the same which work is so close to the vein that it appears to me no more than ten statures from it, but the bedrock is so hard that it cannot be worked [i.e., penetrated] in two years, a thing whose resistance left, I believe, and with much reason, Your Excellency astonished.

This work, most Excellent lord, has 16 [or 17]...we have spent more than 30,000...as I have said, has been extremely hard, and in...because of that I have come to great necessity...some years at times entirely without labor, which with...certain persons, the same which continuously...as I have always been present and *fr*...and understood what matters with desire for what must be done [?]....my all the work and the greater part of the cost.

They have opened other adits later along that...of the sun, and some of them they have abandoned and others they have followed and continue to follow, as with the one of Rodrigo de Sojo and another of Captain Juan Hortiz de Zárate; but these are more shallow and lead to the mines much higher up, where they are not of such benefit, although at that level in which they run they do. Others have been opened on the western part, directed toward certain veins and toward that of the Tin, and they are also shallow and of little effect, and their owners have also abandoned the working of them, I believe due to their great cost and small outcome. Another adit on that western side, much lower than all the others, of better design, was ordered by His Majesty to be worked by the Marquis of Cañete, but since that part of the mountain's flank juts out a lot, after the death of the Marquis it was taken to be a long project and one taking much time...having worked it ninety statures in, more or less...*bra*, as I understand it, by order of the Count of Nieva...many persons who understand these works, it was...being a royal project, which going on for as long as it could...and due to the interest that from it could follow in discovering...are hidden without revealing the veins by it...in that part seeming to be many, as for...mountain or have springs of water, by it one could...to work all the mines that may be impeded by this...*cio* of great importance and much benefit.

...the works and perpetuity of the mines of this mountain...of these adits, it being so great the depth of the...impossible to be able to follow except by them, for the reasons that...and above all mine, being the deepest, where it is understood that there is to be discovered and extracted much wealth and in case it is not found upon arriving by it at the Veta Rica, with great ease of labor in a brief time one may dig down twenty or thirty statures, where the wealth of this mountain is thought to lie. And as I have treated of it so much up until now, it may be appropriate to treat a matter touching upon the ores, of great importance, about which there are doubts and different opinions, according to...one may distinguish if this ore, for the...in the veins, as has been declared, if below...will be treated in the next chapter.

Many...one from another, Most Excellent Lord, have been between...mines, especially in the mountain of Potosí, regarding...the varieties they make, because some...ore does not...penetrated below towards the center and that *ta*...of the surface of the earth, as a thing that grew *p*... of the rains, of hails and snows that fall from it...ordinarily from the mountain, and more so from the virtue of the planets...adding to the fineness of these ores, and they say that all...era that enjoyed these humors and planets, penetrating from...the work heading down because there would be found the riches, which apparently seems to be true, but as this was lacking with the distance of the depth, that the ores ceased, and with this they conclude that there was an end and they terminated.

Others say that they affirm what the first ones said in that the richness came from the causes referred to, that this is true; but beyond that this business has another greater foundation, which proceeds from below and from out of the center upward and that in that place they have their stump or root stock, and found it in this way: that the fruit of the trees proceeds from the virtue of the roots, and these are in the part below...whence comes the fruit above, which is contrary to the order...this virtue of the branches to these roots, and...secured and they were created by God in the manner of trees that...we have great experience in that they are thus, for having seen it [?].in this mountain, such that in sixty statures' depth...it is seen that another is born, the same which comes to detour climbing upward...came to respond following the surface of the land,

some distance from the other, and this was the mine of Francisco Lobato, and I...we have seen it in other parts, wherein one may deduce...much greater depth in one vein than in another and yet another...it could come to incorporate all in one and *h*...them; and this also seems likely, as all touch upon...same direction, varying little in that. Such that being thus...or branches that proceed from the strength of the root stock as we have said.

Beyond this they give another opinion that seems sufficient, which is to say that the mountain of Potosí is very high and since it is, they divide it in three parts, which figure in this way: the first third they make out as fifty or sixty statures from the surface; it was the first part that enjoyed the humidity and virtue of the plants; this part was very rich; but so many more statures, which was the second third towards the depths, where no...this virtue was sterile and of little...great dryness that we saw it had; but it was...below, where it began to return to catch this humidity...in greater richness than that before and would be...

To this opinion, Most Excellent Lord, they may arrive at...greater opinions, to which I add...I wanting to give my opinion in that and more to...and it is as I have referred in another part...inasmuch as it has in height it is a rocky outcrop covered...very thin, as has been said; since if these veins grow [?] them...*ra* opening it from the surface and taking from this...from these veins and following along toward the center and so enter...locating the Veta Rica in my mine at more than 140 [statures]...at...and encased in its bedrock so firm and so beautiful, one has to understand that God Our Lord formed it for a greater secret, because if this were not so, when the ore played out, likewise the vein would play out and the bedrock would close up.

All that treated, most Excellent Lord, are opinions, because up to now not a thing of this has been seen with the eyes, and these are secrets of the Divine Majesty, the same who formed Nature and gave discretion to men so that they may develop their opinions that treat upon it, all which will become clear with the labors and the passing of time, the same which one cannot...FIN