

mains of former times; and by what they have expended, some estimate may be formed of what must have been expended before them.

This fact, (the difference between the Capital now invested, and that which it was intended to replace,) is one cause of the disappointment of those, who imagine that, because a very large sum has been laid out upon the Mines of Mexico by British Capitalists, the produce of those Mines ought, at once, to equal that of the best years before the Revolution.

But a still simpler solution of this disappointment may be found in the total ignorance of every thing connected with the New World, under the influence of which most of the Capital, now employed in Mining speculations there, was invested.

In every other commercial enterprise, some previous acquaintance with the subject might have been thought necessary; but the Mines were to be an exception to all ordinary rules; and, on the principle, I suppose, of taking *omne ignotum pro magnifico*, vast sums were embarked in schemes, of which the very persons, who staked their all upon the result, knew literally nothing, except the name.

I am far from wishing to lay unnecessary stress upon this circumstance, but it is essential to a right understanding of the delays that have occurred in the realization of the hopes of those, who sought a profitable investment in the Mines, to state, that the only knowledge which the British Public possessed, three years ago, of Mexico, was derived from a

superficial acquaintance with the *Essai Politique* of Baron Humboldt; which, although it contains more valuable information than any other similar work, that has ever been given to the world, was, nevertheless, calculated to create an erroneous impression with regard to the actual state of New Spain, by descriptions of a splendour, which had long ceased to exist. No allowances were made for the moral, as well as physical, effects of fourteen years of Civil War;—the dispersion of the most valuable portion of the Mining labourers;—the deterioration of landed property;—the destruction of stock;—and the difficulty of reorganizing a branch of industry so extensive in all its ramifications as Mining, and so dependent upon other branches, not immediately connected with the Mines themselves, and consequently, not under the control of their Directors! All this was to be effected, too, in a country, in many parts of which it was necessary to create a population, before a single step could be taken towards repairing the ruin, which the Revolution had occasioned. And yet, nine-tenths of those who engaged in the arduous task, did so under the conviction that *water* was the only obstacle which they had to overcome, and that the possibility of surmounting this, by the aid of English machinery, was unquestionable! Nor was this all. The errors which Baron Humboldt's scientific eye had detected in parts of the Mining System of Mexico, were supposed to extend to the whole. The practical

experience of the Native Miners was underrated;— their machinery condemned, without any previous inquiry as to its powers, or the different degrees of perfection which it had attained in the different Districts:—*Gradual* improvement was pronounced too sluggish a process; and Cornwall was drained of half its population, in order to substitute an entirely new method, for that which had been endeared to the Mexicans by the experience of three Centuries.

The total failure of this attempt was the natural consequence of the want of consideration with which it was made.

That it *has* failed, (although the fact seems still to be disputed in England,) it is impossible to deny; nor do I believe that, under any circumstances, it could have proved permanently successful.

Englishmen of the lower orders appear to undergo a change, on leaving their own country, (particularly if exposed to the contagion of a large town,) which renders them the most inefficient of human beings: nor is it by an excess of liberality, which only raises them above the sphere in which they were fitted to act, that this evil can be remedied. Indolence, obstinacy and insolence, take, but too soon, the place of those qualities, by which our working classes are distinguished at home; and, as their prejudices are not less strong than those which they have to encounter on the part of the Natives, the result, in all cases where mutual assistance is required, cannot be favourable.

It is but fair to add, that the disinclination of the Mexicans to co-operate in many of the plans suggested, has been not a little increased by the discovery that some of our boasted improvements* have not been productive of any solid advantage, while others have proved complete failures; and where this is the case, it is next to impossible, in any Country, to substitute new methods, merely because they are new, for a practice, which time has already rendered familiar.

Experience has now induced most of the Companies to retrace their steps, and to reduce their Establishments in such a manner as to make the *Management* strictly European, while the operative part is confided to Natives; but this experience has been dearly bought. The Anglo-Mexican Company alone had expended, in September 1826, nearly 30,000*l.* in salaries to men, almost all of whom have now been dismissed; and full 100,000*l.* in Machinery (including duties and carriage from the Coast,) not one twentieth part of which either has been, or ever can be, made use of; the machi-

* I allude not to the use of Machinery where that of the country has proved insufficient, as at Real del Monte; but to the attempt to substitute the Cornish system of washing and dressing Ores, for that of New Spain. In this, as in many supposed improvements in the process of Amalgamation and Smelting, innovation has, hitherto, only led to loss; and I believe that, in every instance, the works for reducing Ores are now confided to Natives.

nery of the Country having been found fully adequate for the drainage of their Mines.*

The Expences of the Real del Monte Company, in the same way, have been still greater; but there, the issue of the whole undertaking depends upon the application of the power of Steam, and the Engines render European Workmen of all kinds indispensable. Even there, however, a great reduction is taking place.

The United Mexican Company has likewise dismissed almost all its European Workmen. Indeed, in many instances, the whole management is confided to Natives; and although this system has not, I think, been generally successful, (from the listlessness, and want of activity, of many of the Agents,) in some places it has been productive of the very best effects, as at Sombrerete, where nothing could exceed the beautiful order in which I found the works, under the management of Don Narciso Anitúa, who acts, at the same time, as Proprietor, and as Mining Director for the Company.

At Tlalpujahuá, the attempt to introduce a strictly European System was never made; and that Company has, consequently, experienced fewer changes, and incurred less expence since its establishment,

* The Mines of Villalpando and Sirena, which are likely to prove the most productive, were drained by Mr. Williamson, in six months, by the application of Malacates, (Horse Whims;) and of the ultimate drainage of Valenciana, by the same process, I entertain little doubt.

than any other. Its whole Outlay does not exceed 180,000*l.* while, by engrafting upon the old Mexican machinery a number of modern European improvements, a steady progress has been made in the works, which now present every prospect of a favourable result.

I have been unavoidably drawn into these details, in order to place in a proper light, strictures, which, although they apply, in some measure, to all the Companies, are not applicable, in the same degree, to each: nor can I terminate this unpleasant portion of my task, without pointing out a few additional circumstances, by which the prospects of the Adventurers in the Mexican Mines have been more or less influenced.

There is hardly a single Company, amongst those now formed, that has not expended considerable sums upon Mines, which, had they been better acquainted with the Country, they would never have attempted to work. This is not to be attributed entirely to the Directors in Mexico. In 1825, the rage for taking up Mining Contracts was such, that many Adventurers, who presented themselves in London for that purpose, disposed of Mines, (the value of which was, to say the least, very questionable,) to the Boards of Management in England, without the Agents of the Company upon the spot having been either consulted, or even apprized of the purchase, until it was concluded. Others were contracted for in Mexico, without

proper inquiry or precaution; and large sums were often paid down for mere pits, which, upon investigation, it was found impossible to work. In some cases, operations were actually commenced, and all the preliminary parts of a Mining Establishment formed, without sufficient data to afford a probability of repayment. In many of the Districts immediately about the Capital, (as Zimapàn, El Doctor, Capula, Chico, Temascaltepec, &c.) this has been the case; and although these desultory experiments have been subsequently abandoned, still, they have been a drain upon the Companies, which is the more to be regretted, because it never could have been productive of any great result.*

In general, the selection of Mines, amongst the first Adventurers, was determined by a reference to Humboldt. Any Mine not mentioned in his

* I do not wish to enumerate the individual instances of these failures that have come to my knowledge, but there is one very generally known, that of Mr. Bullock's Mine at Temascaltepec, which was purchased of him by the Houses of Baring and Lubbock, and upon which I should think that 20,000*l.* must have been expended before their Agent, (Mr. Bullock,) could convince himself of the injudiciousness of his choice. What induced him, in the first instance, to fix upon this particular spot, I am unable to state, for I have never discovered any record, or even tradition, respecting the former produce of the Mine. Certain it is, however, that it does not now contain the slightest vestige of a Vein, nor has one Ounce of Ore, (rich or poor,) been raised from it.

Essai Politique, was rejected as unworthy of attention; while those which were favourably spoken of, were eagerly sought for.

In this respect, the work in question has exercised an influence highly prejudicial to British interests, not from any fault of the author's, but from the conclusions imprudently drawn from the facts which he has recorded.

Humboldt never asserted, or meant to assert, that a Mine, because it was highly productive in 1802, must be equally so in 1824. A general impression of the Mining capabilities of Mexico was all that he wished to convey; and how could he illustrate their importance better, than by presenting statements of what had been done, as the best criterion of what might still be effected, in a country, the Mineral treasures of which he regarded as almost unexplored?

Unfortunately, the consequence of these statements was, to direct the attention of the world *exclusively* to spots, which, from the enormous quantity of Mineral wealth that they have already yielded, may fairly be supposed to have seen their best days.

I do not mean to say that the great Mines, taken up by our Companies, are exhausted; on the contrary, I believe that they will still amply repay the Adventurers for the stake invested in them; but I have, certainly, little doubt that, in many in-

stances, the same Capital might have been laid out, elsewhere, with a much more immediate prospect of advantage.

Besides, however good the Mines, the price which has been paid for their former celebrity in the shape of "Alimentos," (a yearly allowance to their owners,) has proved a very serious addition to the first outlay of the Adventurers.

Those paid by the Real del Monte Company to Count Regla, amount to 20,000 Dollars. The Anglo-Mexican Company, for the Mine of Valenciana alone, pays yearly 24,000 Dollars. On the preparations for draining the first, (the great Biscaïna Vein,) nearly two millions of Dollars had been expended when I left Mexico; and at Guanajuato, the Valenciana Mine had cost, on the 1st of September, 1826,—672,264 Dollars. Farther advances will be required in both cases, before the drainage can be completed; and certainly, there ought not, in reason, or justice, to have been any surcharge, in the shape of Alimentos, where so large an investment of Capital was necessary for the preliminary works.

But this was one of the effects of that competition between the different Companies, which made each fear to find a rival in the rest: another, was the little attention paid to the terms of the Contracts, which are not always as favourable as they might have been made. Some of the most expen-

sive Mines, (as Valenciana, and Rayas,) are held for a shorter term of years than would have been desirable; and in others, many onerous conditions have been introduced, which nothing but the extreme eagerness of the first Adventurers to take up the greatest possible number of Mines, could have given rise to. Fortunately, these disadvantages are pretty equally distributed; so that, in most Companies, the good and the bad Contracts serve to counterbalance each other: I do not, however, know any one, whose engagements are unexceptionable, or by any means as good as they might now be made.

Such are the disadvantages under which the British Companies, now established in Mexico, labour, and such the causes that have, hitherto, impeded their progress. Both have proceeded, in a great measure, from the want of a proper knowledge of the country, in the first instance, which has, undoubtedly, entailed upon them an expenditure, which, by a more judicious system on commencing their operations, might have been much diminished.

Against these drawbacks we must set, First, The known goodness of a great proportion of the Mines now in the possession of the Companies; and the equally well known fact, that, when these Mines stopped working, there was no falling off or diminution in their produce; so that as soon as the pre-

sent Adventurers reach the lower levels, they have almost a certainty of being repaid for a part, at least, of their advances.*

Secondly, The great progress that has been already made by all the Companies: the forward state of their preparatory works; and the rapidity with which, after making roads, rebuilding Haciendas, and laying in stores of all kinds, they are now approaching the lower workings of their different Mines, where the demand for farther advances, on the part of the Shareholders, will cease.

Thirdly, The certainty, that errors once committed, will not be repeated; that every precaution is now taken in order to confine the operations of the Companies to those Mines from which speedy returns may be expected; that the greatest activity is displayed in every one of the negotiations; and that this activity is rendered doubly efficient by the lessons of the last three years.

My own experience enables me to add that, in Mexico, there has been no instance of any of those disgraceful speculations which have contributed so much to discredit, in England, Mining Adventures

* I cannot urge this point too strongly, for although the mass of silver already raised from some mines, undoubtedly diminishes the probability of their continuing equally productive for a long term of years, yet, where the richness of the Vein continued unimpaired in 1810, it affords almost a certainty of the repayment of the Capital invested, in the first instance, leaving the profits only to be affected by the ulterior returns.

in general. The engagements of the different Companies are all *bonâ fide* engagements, and no exertions have been spared in carrying them into effect. The efforts which have been made in the service of some of the Associations, and the obstacles that have been surmounted, are quite incredible, and do the highest honour to the gentlemen charged with the direction of their affairs: and, though some of the minor undertakings, in which Capital was, (perhaps injudiciously,) invested, at a time when a desire to employ Capital in this way was universal, have since been given up, still, the great enterprises which were pointed out, in the first instance, as the object of the formation of the different Companies, have been steadily pursued, and are now in a very advanced state.

Those who are unacquainted with the scale upon which Mining enterprises in Mexico are conducted, and who judge of the outlay required there, by a comparison with that which attends the working of one of the smaller Mineral deposits of Europe, are at a loss to comprehend the necessity of an expenditure so large as that of some of the Companies has already been: I shall, therefore, take the liberty of submitting to my readers the following observations, which will be found, more or less, applicable to all the Mining Associations of New Spain, and may tend to throw some light upon this part of the subject.

The Outlay of the Companies has not, in any

instance, been confined to a single Mine, but has embraced a series, or suite of Mines, sometimes in the same, sometimes in different districts, each requiring a multiplicity of extensive works, not only in the interior, for the drainage and extraction of ores, but on the surface, in order to turn to account these ores, when raised.

It is in the immense mass of ores which they are capable of producing, and not by any means in the abundance of Silver contained in them, that the riches of the Southern, or Central mining districts of Mexico, consist. Before the Revolution, it was calculated that the three millions of marcs of silver, to which the average annual produce of the country amounted, were extracted from ten millions of quintals (hundred weights) of Ore; so that the proportion of Silver did not exceed two and a half ounces to the hundred weight.*

The quantity of machinery requisite, in order to reduce this mass into a fit state to be submitted to the action of the quicksilver, by which the silver is ultimately separated from it, was immense; and as the whole of it was destroyed during the Civil War, it became necessary to erect anew, horse-whims, (Malacates,) magazines, stamps, crushing-mills, (Arastres,) and washing-vats; to purchase hundreds of horses for the drainage, and mules for the conveyance of the ore from the mine to the Haciendas,

* *Vide* Report of Tribunal de Minería, and Humboldt, *passim*.

(where the process of reduction is carried on;) to make roads, in order to facilitate the communication between them; to wall in the Patios, or courts, in which amalgamation is at last effected; and to construct water-wheels wherever water power could be applied; nor is there one of these expences, that is not in so far indispensable, that, without them, the drainage of the mines themselves could lead to no sort of advantage.

It is, therefore, by works of this nature that the Companies have commenced their operations, and in them the largest portion of their outlay has consisted. Authorised by their contracts to look forward to a long term of possession, (generally from twenty to thirty years,) and entitled, by the former goodness of the mines, to expect an abundant produce, their preparatory works have been constructed in such a manner as to combine durability with convenience, and, in most instances, will require but few additions. Of the scale upon which things have necessarily been done, I shall beg leave to adduce a few examples.

The possessions of the Real del Monte Company, on the two great Veins of the Santa Brigida, and La Biscaína, (which are usually regarded in England as one *mine*,) cover a space of 11,800 yards, and are intersected, at intervals, by thirty-three shafts, varying in depth from 200 to 270 yards, but all sunk with a magnificence unparalleled in Europe. The whole of these shafts, together with the great