

engineers to the use of stamps, it is by no means universal, and very grave questions are being raised by men prominent in the profession on this subject. As an illustration of this, I beg to quote from a paper read before the Institution of Mining and Metallurgy at the Museum of Practical Geology, Jermyn St., London, S. W., on Wednesday, December 22nd, by the very eminent engineer, Mr. C. G. Warnford Lock, on "Gold Amalgamation."

"As to prevailing methods of effecting amalgamation, I venture to put forward the contentions that they are imperfect; that they are wrong in principle, and, therefore, cannot be perfected. To commence with battery amalgamation; I cannot find a single argument in its favor, and I maintain that such amalgamation as does undoubtedly take place when mercury is fed into the mortar, happens in spite of, rather than by reason of, the conditions presented, and always at the cost of efficiency in reduction, which is the prime and only real duty of the battery. You cannot get two distinct and antagonistic operations out of one machine without detriment to both. This is surely a simple axiom. The effective capacity of the battery is curtailed to a most important extent by the discharge being retarded in order to give time for amalgamation, and by amalgamated plates occupying a portion of the never too abundant space, which legitimately belongs to the screens. These evils will be the greater, according as the reduction needs to be carried to a finer point, so that it becomes greatest in those cases where the reduction process is most prolonged and most costly. Then there is the drawback that the mercury, instead of being presented in a clean, substantial and constant state, is broken up into the most minute particles, many of which must become inoperative, while all are exposed in a maximum degree to the injurious effects of decomposing sulphurets and other sources of contamination from the water. Unless the supply of mercury is much in excess of what the ore requires, amalgamation can be only partial; if an excess is provided, the waste must be all the greater. During milling operations the amalgamation is quite beyond control, and must proceed haphazard. Another drawback which has not been estimated is the evil influence of the metallic iron worn from the shoes and dies. The inconsistency of putting mercury into the battery is obvious. We lament the smallness of the gold particles and the difficulty attendant on collecting them from the mass of pulp in which they are buried, and forthwith we take pains to smash up the mercury into tiny atoms also, ignoring the fact that in proportion as the globule of mercury becomes smaller its efficacy is diminished, and the risk of it escaping with any gold it may have picked up is increased. To sum up the case of battery amalgamation, I submit that it must be condemned from both scientific and economic points of view."

Note "B" (No. 2).—The item of 10 mesh is mentioned as being a suitable reduction of the ore to facilitate the action of the mill, while it may be determined that a still finer reduction may be found useful as experiments progress. "At the outset we come to the question of the state in which gold occurs in nature. On this point there is some diversity of opinion, apparently due to different experimenters working on different ores. But if we admit that in some cases the gold is in chemical combination with tellurium, and perhaps also with antimony, and that in other cases it may exist as a sulphide soluble in another sulphide, whilst in a third case it may be present as a chloride associated with silver chloride, yet the sum of all these cases will give but a very small figure in comparison with the enormous number of instances in which it is only mechanically associated with the other ingredients of the mineral. It is in this predominating case of the gold being in a metallic state that the amalgamation process is applicable." (Lock.)

The Crawford belief is operated on the belief that gold is not chemically but mechanically combined with other minerals. That being admitted, it may be worth consideration to reduce the ore before it is fed into the mill to a much finer mesh, and thus increase its power of delivery.

Note "C" (No. 3).—In discussing the question which the bath of mercury occupies in the paper referred to, Mr. Lock remarks:—

"It may appear to be necessary to lay stress upon the urgency of starting with clear and pure mercury, yet that is a point often overlooked. Moreover, on exposure to the air, the surface of the mercury will become oxidized sufficiently to hinder actual contact with the gold. Another important consideration which is apt to be lost sight of is the value of having a good body and surface of mercury. When mercury is broken up into a number of tiny atoms the oxidation of the multiplied surfaces must be enormously hastened and the efficiency thereby reduced. When the particles become very fine they are rendered actually valueless as amalgamators, and finally disappear in the tailings, especially in the presence of even small proportions of sulphide undergoing decomposition. Amalgamation is essentially a wet operation, and cannot be satisfactorily accomplished except in the presence of water. Hence it is of importance to secure water which is free from salts in solution and solids in suspension. Mine waters are especially bad on this account. In a low temperature amalgamation is sluggish, and therefore it is customary to supply heat in cold weather; but summer water is often much less pure than winter water, and decomposition of the sulphurets is more rapid in the presence of heat, so that these two conditions may combine to more than counteract the advantages of a genial climate."

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The News, St. John's, Que.

It is now some fourteen months since the *News* commenced publishing reports of the wonderful results produced by Dr. Williams' Pink Pills, and every one must admit that many of the cures effected seemed little short of the miraculous. The names of the remedies which claim to cure all the ills the flesh is heir to are today legion, and whatever the merits and demerits of these preparations may be, there is no question as to the great reputation achieved by Dr. Williams' Pink Pills for Pale People. Some people no doubt laugh at these stories and believe them to be advertising dodges to catch the unwary and rope in some of their shokels. We have now printed and published the *News* for nearly half a century; it enjoys the reputation of being a high-toned weekly with a large circulation, and we naturally do business with the advertising men of the day, and from the reputation of the Dr. Williams' Medicine Company, we have never had any reason to doubt the perfect accuracy of the cures related; but it is only now that we are placed in a position to testify personally as to the wonderful curative powers of Pink Pills. The story we were about to relate, though no less remarkable than others regarding the same medicine, naturally impresses itself more upon our mind and upon the minds of others in the community because the party chiefly concerned is known to us, and we are enabled to bear personal testimony as to the correctness of his declarations.

The gentleman who was a short time ago so greatly afflicted is now almost as well as he ever was, and cheerfully related his story to the representative of the *News*, in the hope that those who read it might be benefitted thereby.

Mr. Camille Dubuque is a man of fifty-three years of age, and has been a mechanical engineer for twenty-five years, working on the steamer *Reindeer*, which runs on Lake Champlain, and occasionally on the River Richelieu. "Four years ago," said Mr. Dubuque, "while our steamer had an excursion party on board for an evening run, I was rather tired after a long day's work, and went up on the upper deck to enjoy a smoke before retiring. At that time I felt myself to be in perfect health, but when I went to my room I was taken with chills and was unable to keep myself warm. Although that night I had but little sleep I felt comparatively well the next day. About a fortnight after I was taken with frightful pains in my back near my spine, and in my side. I went to the hospital in Burlington, Vt., and was treated there for three weeks, and then feeling but little better I came to my home in Ilerville county, five and a half miles from St. John's. I was then doctored by a medical man from Ilerville. His treatment seemed to relieve me very

little, and I determined to visit Montreal and see another physician. This I did in March (three years ago) and put myself in an eminent physician's care, who treated me from March until July, and certainly did all he could for me. I did not stay in Montreal all the time, but went backwards and forwards to see him. In July I got tired of this and was beginning to feel down-hearted. I then called in a medical man from Henryville, a village a few miles from where I live, and he prescribed for me over and over again, but by this time I was almost powerless to help myself, and no one knows what frightful agony I suffered. For seven long months I sat in a chair with my feet on a lounge. I was unable to lie down day or night, and often thought that death would be a happy relief. Last spring my wife read an account of a Saratoga miracle in the *News* and determined to get a box of Pink Pills for me. I remonstrated with her, telling her that it was useless spending more money, but she persisted and wrote to Wight & Co., druggists, of St. John's, and had a box sent by mail. I took them to please her, never thinking they could do me any good, but much to my surprise, after taking the box I felt slightly better. We then bought another box, and by the time that was gone I felt that they were certainly helping me. I could now lie down, something I had been unable to do for seven long months previously. So I kept on taking the Pink Pills, and to-day I am practically a new man. Last winter I had an attack of la grippe. I took Pink Pills and they cured me. We figured up to see the amount of money I had expended in trying to be cured before resorting to Dr. Williams' Pink Pills, and the figures reached \$825. I willingly tell you my story, and my wife corroborates every word I say, in the hope that anyone who is as unfortunate as I have been may attain relief by employing the same remedy. Put it in the *News*, some of my old fellow-workmen will see it, and it may benefit them as it has done me."

When the *News* representative drove up to Mr. Dubuque's pretty little farm house he beheld that gentleman chopping wood, and looking a strong robust man. A year ago his neighbors thought him a doomed man—to-day they consider his cure as little short of miraculous.

Messrs. Wight & Co., old and reliable druggists of this town, assure us that Dr. Williams' Pink Pills have an enormous sale, which is additional proof that they really are what the manufacturers claim for them.

Dr. Williams' Pink Pills are a perfect blood-builder and nerve restorer, curing such diseases as rheumatism, neuralgia, partial paralysis, locomotor ataxia, St. Vitus' dance, nervous headache, nervous prostration and the tired feeling therefrom, the after-effects of la grippe, influenza and severe colds, diseases depending on humors in the blood such as scrofula, chronic erysipelas, etc. Pink Pills give a healthy glow to pale and sallow complexions, and are a specific for the troubles peculiar to the female system, and in the case of men they effect a radical cure in all cases arising from mental worry, overwork or excesses of any nature.

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