ANNUAL REPORT OF THE COMMISSIONER OF MINERAL STATISTICS OF THE STATE OF MICHIGAN, FOR 1884.

BY AUTHORITY

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HON. JOSIAH W. BEGOLE, *Governor*:

In submitting this my annual report, I desire to say, that it was my intention to review in detail the condition of the several iron and copper mines, but owing to the depressed condition of the mining industries of the state but little has been accomplished in the way of new developments, and therefore such a review would be merely a repetition of what has already been written over and over again, by myself and others. A reference to the statistical tables will show that notwithstanding the depression in both the great mining industries of the state, there was an increase of 3,790 tons 1,526 pounds refined copper over the preceding year, while the output of the iron mines exceeded the 1883 product 103,636 tons. This result was achieved by the mine owners, it might be said, almost in spite of their own exertions to the contrary — the market prices for copper and iron being so low as to preclude the possibility of a profit in the case of a large majority of the mines — notwithstanding the fact that a fair margin was realized on the great bulk of the product of both iron and copper. This seeming contradiction may be explained by the fact that at least two-thirds of the copper, and an equal proportion of the iron ore, was raised by the largest and best equipped mines, some of which at least could produce and sell their product at prices below those which have prevailed daring the past two years, and yet continue to make as much profit as a great many people — noticeably the purchasing class — might consider just and reasonable. This is particularly true of the Calumet & Hecla, which has continued to pay its dividends equal in amount, if indeed not as regular in the order of their declaration. That this last should be the case is not at all surprising, when we take into consideration the fact that nearly two-thirds of all the refined copper produced by Michigan mines in 1884 is put down to the credit of the Calumet & Hecla. It will also be seen on the other hand that half a dozen of the leading iron mines produced more than half the aggregate product of the entire district. So that, as I have hinted, while a fairly remunerative profit may have been realized on the bulk of the product, it is nevertheless true that a majority of the mines operated in 1884 lost money, or at least did not more than pay expenses. These last were the mines which were in a state of but partial development, or else those whose equipments were not such as to enable them to produce at a cost sufficiently low to meet the requirements of a depressed and failing market. It will be seen, too, by a comparison of the figures given in the last two columns of the statistical table, that quite a number of the iron mines which reported a product in 1883 were either not wrought at all, or else made no shipments, in 1884.

So far as the Lake Superior iron trade is concerned, it may, I think, be truthfully said, that the "palmy days" of high prices and enormous profits are forever ended. The mine owners themselves contributed largely to the death of the goose which laid the golden egg, by demanding, during the time that the demand exceeded the supply, what the furnacemen were pleased to consider exorbitant prices, and which they very well knew yielded profits amounting in some instances to nearly, if not quite, one thousand per cent per annum on the capital actually invested. This naturally led the furnacemen to look for new fields of supply, or else induced the purchase and development of new mines in the Lake Superior region, to be wrought on their own account, and with a view to securing control of the market in their own behalf. New mines sprang into existence, both in the Marquette and Menominee ranges, while the building of ft railway to and through the newly discovered deposits in Ontonagon county, and the unusually promising developments at Vermillion Lake in Minnesota, gave assurance of a competition which could not exert other than a depressing influence on the Lake Superior ore trade. Indeed, the development of the new fields referred to was scarcely, if at all, necessary to a lowering of the market price of Lake Superior ores, for the reason that the Michigan mines were already in a condition to supply any possible demand that might be made upon them for first-class ores. Notwithstanding this fact, however, the work of developing the new fields was continued, and in 1884 the first shipments were made — a sample cargo from the Agogeebic range, and something over 60,000 tons from the Vermillion Lake mines. The product of the last named will, it is expected, reach 250,000 tons this year (1885), while quite a number of mines in the former, now that they are supplied with transportation to the lake side at Ashland, are in a condition to ship as much ore, certainly, as they are likely to find a market for. In view of the fact that the Marquette and Menominee mines would, if called upon, be able to supply the entire demand of all the furnaces accustomed to the use of Lake Superior ores, the development of these new fields, in my opinion, assures a long period of low prices, if not continued depression in the ore trade. The iron mining industry will settle down to a legitimate business; low prices are not incompatible with fair profits, and on the whole I look for a continued annual increase in production, and am not prepared to believe that the industry will not rather be benefitted than injured by the maintenance of prices which will afford a fair margin of profit to the furnace as well as the mine owner.

I append statistical tables showing the amount of iron ore and refined copper produced by the Lake Superior mines for each year of their operation, up to and including 1884. Of the producing copper mines in 1884, several have since suspended active operations, among them the Peninsula and Conglomerate, which at the

beginning of last year it was believed might both be placed on a paying basis. The cause of the suspension at these two promising mines, after the expenditure of vast sums of money in opening up new ground and for necessary machinery, it is not the province of this report to inquire — whether due to mismanagement, exhaustion of funds or otherwise, it is the general belief that the failure cannot truthfully be attributed to a lack of what would be considered "pay ground" with the market price of copper ruling at figures which obtained a few years ago. As it is, with copper at 12 cents, there is no alternative for many of the mines but to suspend operations or else continue work at a loss. Under these circumstances there is little inducement, if indeed any at all, for the investment of capital in the development of new properties, and the probability is that half a dozen of the larger mines will, for some time to come, produce all the copper, save that which may be credited in the statistical tables to "Sundry mines and tributors." The only important development within the past year, so far as the copper industry is concerned, is the completion of the deep shaft of the Tamarack Company, which was fully described in my last report and which struck the Calumet & Hecla lode at a perpendicular depth of 2260 feet. At this depth the lode is found to be equally as rich as in the lower levels of the Calumet, and a new mine which may possibly rival the latter seems reasonably well assured. The sinking of the shaft may justly be considered one of the greatest mining feats ever accomplished in this or any other country, and the successful issue of the undertaking is important not only in the profitable results likely to ensue to the company, but as indicating the great depth to which the copper veins or lodes of this district may be profitably wrought. The new railroad (narrow guage) spoken of in my last report, has been completed from the Tamarack to Hancock, *via* Torch Lake.

The table will show that the copper industry of Ontonagon county is retrograding, if we are to take the amount of production as an index — its mines contributing only a little over one hundred tons to the aggregate product of 1884. With the exception of the Belt, none of the mines were wrought, except in a small way by tributors, and the Belt, of which better things were expected, reports a product of less than twenty tons. The working capital originally set aside for the equipment and development of this mine was fully exhausted without immediate profitable result, but, with a pertinacity deserving of final success, the English shareholders have provided a still further sum with which to continue the work until the value of the property is definitely determined one way or the other.

In the Agogeebic iron range the work of exploration was continued throughout the year, a small shipment being made from the Colby mine late in the fall. The completion of the railroad to Ashland this season furnishes an outlet for mines of this range, nearly all those mentioned in my last report as having workable deposits being in a condition to produce more or less largely, as the market for first-class Bessemer ores may seem to warrant. The deposits are, to all appearances, very extensive and the history of the Menominee range is likely to be repeated in that of the Agogeebic, the ores of the two being very similar in appearance as well as quality.

Exploratory work in the gold and silver bearing veins, described at some length in my last report, has been continued almost uninterruptedly, but, with a single exception, without the favorable results which were so confidentially anticipated. The single exception referred to is the Ropes mine, near Ishpeming — the other explorations being those of the Phillips and Coons locations contiguous to the Ropes, and the Moore and Spear properties within the corporate limits of the city of Marquette. Many other discoveries have been reported, but up to this writing the Ropes is the only location at which any well directed effort at development has been made, or any practical results secured. At this mine, for such it can now properly be called, they have a shaft down to a depth of about 200 feet, with four drifts east and west, showing a large quantity of quartz carrying gold and silver in paying quantities. On the first and second levels the quartz occurred in lenses, which were soon worked out, but in the lower levels the formation is much more regular and settled, and the indications are that the vein will prove large enough to supply an ordinary sized mill for many years. In the first and second levels some rich pockets occurred, the ore from which yielded from one to three dollars per pound in gold and silver; but lower down the mineral was found more evenly disseminated, necessitating the milling of all the rock found between the walls. The mill, which originally consisted of five batteries of stamps, and which was designed more especially for a practical test of the rock, being found insufficient, and not giving as good results as the management thought ought to be attained, a Wiswell machine was added, this nearly doubling its capacity. After running the Wiswell a couple of months with much more satisfactory results than had been obtained from the stamps, it was decided to put in two large machines, and thus increase the capacity of the mill to sixty tons per day. Mr. Southworth, the superintendent, who is an experienced miner, and thoroughly posted in all the details of mining and milling mineralized quartz, firmly believes that the Ropes will in the near future be placed on a dividend paying basis that will not only be satisfactory to shareholders, but a surprise to all disbelievers in the existence of gold and silver in paying quantities on the south shore of Lake Superior. The Phillips, which adjoins the Ropes on the west, presents about a similar character of vein; the formation being the same. The workings consist of a shaft which is down to a depth of sixty feet, with drifts east and west, all in rock which carries considerable mineral, and the managers affect the belief that with the experience of the Ropes to guide them, they will have little difficulty in placing their mine on a paying basis. The explorations at Marquette are in a large quartz vein, or dike, rock from which assays all the way from a few cents to two hundred and fifty dollars to the ton. At this

writing, however, no real practical test of the rock has been made, but the quiet, steady way in which the explorations have been conducted, and the apparently honest determination of the owners to show up something of real value before attempting to place any more stock on the market than may be actually necessary to secure funds with which to continue the work, evidences a large degree of faith on their part as to the final outcome. That gold will be found in paying quantities at all on even a majority of the locations now being prospected, is not at all probable; but that the work at the Ropes, and discoveries yet to be made, will in the near future add the south shore of Lake Superior to the gold and silver producing districts of the country I most firmly believe.

There is nothing new to report in reference to the slate industry. The Michigan Slate Company has been gradually enlarging its operations, and continues to produce a fair amount of the very best roofing slates. As the pits are enlarged the product is increased, but the enlargement is necessarily slow, and it will take time to bring the quarries up to the maximum production of which they are capable. The anticipated commencement of operations in the immense beds on Silver River has been delayed, and work is at a standstill at the Williams' quarry, near L'Anse, where a very considerable area of slate of the best quality has been uncovered. For some reason capitalists hesitate about investing their means in the development of these slate beds, though a very little investigation ought to be sufficient to convince them that a more desirable field for investment, or one more certain of sure and steady profits, cannot be found anywhere. I can add nothing on this subject to the views advanced in my last report, and can only hope that ere long the attention of capitalists may be directed, in a substantial way, to the development of what is destined ultimately to become one of the most important, and at the same time one of the most certainly remunerative industries of the state.

In closing this brief report — made so in deference to the opinions of many of the mine owners, notwithstanding it had been my purpose to treat the several mines in detail — I venture to offer a suggestion withheld from my last report for fear that under the circumstances (being then about to retire from office, with a session of the legislature closely at hand) it might be considered indelicate on my part, if indeed it had not been ascribed to unworthy motives. The office of Commissioner of Mineral Statistics should be abolished. The press of the state, than which that of none other is more enterprising in the gathering of news, can safely be depended upon to spread broadcast all the statistical information concerning our mining industries which it is desirable the public should have. There is no more reason why an officer should be appointed to collect and collate mining statistics — to write up in detail, or in general terms, the condition and status of the mining industry each successive year, than that one should be appointed to perform a similar work in behalf of the lumber mills, another for the agricultural interest, and so on *ad libitum*. This office abolished, there should be created in its stead the office of Mine Inspector, by an act so carefully guarded as to provide fully for the competency of the appointee. This suggestion may not, at first glance, be approved by some of the most competent mine agents and superintendents, who conceive themselves to be perfectly competent to provide to the fullest extent for the safety of employes in their mines; but their appreciation of the fact that all mine agents and superintendents are not to be classed in the same category with themselves, coupled with the knowledge that careful, competent superintendents will have nothing to fear from an official inspection of their work, ought to lead them to favor rather than oppose the creation of such an office. I have in my mind one instance where the inspection of a certain mine, by a competent person, clothed with authority to order and compel the exercise of ordinary care and precaution, might have prevented the sacrifice of a dozen or more lives. The law should be guarded so that the appointment of inspector may not be made as a reward for political or party service, but solely in the interest of the hundreds whose lives are in daily peril. I sincerely hope that this matter may be brought to the attention and be favorably acted upon by the next legislature.

Very respectfully your obedient servant,
A. P. SWINEFORD,
Commissioner.

MARQUETTE, JULY 30, 1885.