

At the beginning of the strike the mine managers declared that they did not intend to evict the strikers from the houses belonging to the mining companies, but on September 4 the management of the Copper Range Consolidated Co. (which includes the Trimountain, Champion, and Baltic companies) began to serve eviction notices on the tenants in its houses. In some instances the tenants were notified that they must return to work by September 8 or move out of the houses. Some men, who had been leaders in the strike, were not given this alternative, as the company did not wish to employ them again. The eviction was temporarily suspended by a restraining order, issued on September 6 by Judge P. H. O'Brien, of the circuit court, on the petition of the Western Federation of Miners. Two weeks later the Quincy Mining Co. began serving eviction notices.

A number of men in the mining district have during the winter worked for the companies and have during the summer engaged in farming on land leased from the companies. These farm leases are similar in terms to the ground-rent leases. During the strike some of the farmers leasing lands from the companies contributed potatoes and other products to support the strikers. This assistance seems to have been objected to by the companies. The Houghton and Calumet Daily Mining Gazette, a paper that upheld the views of the companies throughout the strike, stated "on good authority" that the companies were determined to drive "this undesirable class from the district" and intimated that the leases of the tenants who were former employees would be canceled and that they would not be paid anything for the houses they had erected or for other improvements they had made. The following was published in the Gazette of October 21:

The statement was made yesterday on good authority that some of the mining companies that have farms out on lease will cancel the leases of Finnish Socialist farmers. The strike with its attendant crippling of industry, its suffering among the poorer classes, its numerous fatalities, and its riots and general disorders, is laid at the door of the Finnish Socialists. The mining companies are determined to remove this undesirable class from the district. The cancellation of farm leases is one of the means.

This may appear to the uninitiated to be a drastic measure, but the situation is one reflecting no credit on Finnish Socialists. It is estimated there are 500 of these people occupying farms leased from mining companies. They pay \$10 to \$20 per 40 acres per year—not a very steep rental. The low rental and the probability that they never would be disturbed in their tenure of the lands, because farm lands are of little use to mining company, has made it possible for this class of farmers to prosper. It is now known that they have been assisting in strike agitation; that they have contributed largely to the strike benefits in the way of farm products. Such a class of antagonists naturally is something that the mining companies can not help to foster in justice to themselves.

The following appeared in the Gazette dated October 24:

Most of the Finn farmers in this vicinity are working land leased from mining corporations. The leases are at nominal figures, usually out of consideration to faithful employees. These Finnish farmers who have been conspicuous in the strike parades and in the strike meetings doing the loudest talking, talking against the corporations, must walk up to the office of these same companies and ask for a renewal of their leases January 1. They are by no means sure they will get it. Some others of the strikers who own houses located on company land are finding out that they have a difficulty to which they gave little consideration. These men, realizing that in the past the company always stood ready to take their houses off their hands at a fair appraised valuation, presumed that unwritten law would always continue. Now they want to move to other camps, being unable to get their jobs back. They want the company to buy their houses. The company is not in the house-buying business right at this moment.

## LIVING CONDITIONS.

In the section of the report relating to houses occupied by employees, statistics are given which show that mining companies rent houses to employees at a low rental, and mention is made of the fact that some of the companies supply electric lights for these houses at a cost of from 5 to 12 cents per kilowatt-hour. In statements made by the companies some of them say that they furnish soft coal to employees at from \$4.50 to \$5.25 per ton, and hard coal at from \$7.75 to \$8.50 per ton. Following is the price list of coal dealers in Calumet and Laurium:

Price list of coal in Calumet and Laurium on June 1, 1913.

	Per ton.	One-half ton.	One-fourth ton.
HARD COAL.			
Egg.....	\$8.00	\$4.25	\$2.40
Stove.....	8.00	4.25	2.40
Chestnut.....	8.25	4.40	2.45
Stove and nut.....	8.15	4.35	2.45
(Advance of 25 cents per ton on above sizes Aug. 1.)			
Pea.....	6.00	3.25	2.00
Screenings.....	2.00	1.25	.90
SOFT COAL.			
Cannel.....	7.25	3.85	2.15
Nut cannel.....	6.25	3.35	1.90
Pocahontas (refill).....	6.00	3.25	1.90
Pocahontas (steam trade).....	5.50	3.00	1.75
Splint.....	5.75	3.15	1.85
Pittsburgh.....	5.50	3.00	1.75
Run of pile (Pittsburgh).....	4.50	2.50	1.50
Soft screenings.....	3.00	1.75	1.15
Smithing.....	6.75	4.15	2.35

25 cents per ton extra if carried.

All coal must be charged at price in effect at time of delivery regardless of time order is taken.

None of the mining companies conducts a boarding house for its employees, but at most of the mines there are boarding houses conducted by private parties who rent houses from the companies. In these boarding houses the price of board and lodging varies from \$20 to \$22 per month. Some Italians, Hungarians, and other foreigners live more cheaply than this, by clubbing together, renting a house, buying the provisions, and hiring somebody to cook the food or cooking it themselves.

In this investigation the prices of commodities in stores were not secured, but the prices are not considered dear by the people in the district. Store prices have largely been governed by the prices fixed by the Tamarack Cooperative Association, which has a large department store located at Calumet, and which sells and delivers goods in adjoining villages for a distance of 15 miles or more. It does a larger business than any other cooperative store in the United States. It was organized in 1890, has 1,800 stockholders, and at the end of each fiscal year pays its stockholders a dividend of 8 per cent on their shares of \$10 par value each, and pays its customers 12 to 13 per cent on the amounts of their purchases. The following details from the

Twenty-second annual statement of the company for the year ending January 15, 1913, show the extent of the business:

Capital stock paid in.....	\$68, 180. 00
Insurance fund (reserve) on deposit in bank.....	18, 727. 87
Total sales from Jan. 15, 1912, to Jan. 15, 1913.....	845, 930. 90
Dividend No. 22, payable Feb. 15, 1913.....	103, 947. 02
Total dividend since organization.....	1, 144, 006. 53
Total sales since organization.....	9, 763, 330. 00
Insurance in force.....	105, 000. 00

The Copper Range Consolidated Co. is the only mining company in the district that has company stores. It conducts four stores. The amount of sales of each of them and the amount collected through the company pay office during 1912 are shown by the following figures:

Trimountain store—sales, \$161,215.32; collected through company, \$29,309.81. Atlantic store—sales, \$118,555.51; collected through company, \$7,735.23. Beacon Hill store—sales, \$63,299.13; collected through company, \$14,734.19. Redridge store—sales, \$49,904.22; collected through company, \$15,917.12. No complaints were heard regarding overcharges in these stores.

#### WELFARE WORK.

The Calumet & Hecla Mining Co., which has a larger number of employees than any other company in the Michigan copper district, has provided a number of welfare agencies for their benefit. The employees of its subsidiary companies also have the privileges of its bathhouse and library.

The Calumet & Hecla Co. has built and now owns 10 school buildings, which are used as public schools, and for which Calumet Township pays rent. It also has built and owns an armory which is used by the local military company, and for which the State pays rent. It has given the ground for the Young Men's Christian Association building in Calumet and for most of the church buildings in the township and has contributed to their support.

Following are replies by the various companies involved in the strike to the requests "Describe welfare agencies of the company and charge to employees for each":

#### CALUMET & HECLA MINING CO.

The Calumet & Hecla Mining Co. maintains the following institutions solely for the welfare of the employees, viz:

##### PUBLIC LIBRARY.

The public library contains 35,000 volumes, and literature in the various languages which may be of interest to the employees. This library is free to any resident of Calumet Township.

##### BATHHOUSE.

The company operates a modern bathhouse, built at a cost of \$50,000, containing tubs, showers, and a swimming pool 26 by 40 feet. For the use of this bathhouse a charge of 2½ cents is made per bath, except in the case of the women's department, which is free to women and also children, who must be accompanied by an adult female attendant. This charge of 2½ cents merely covers the cost of washing the towels and in no way compensates for the operation of the bathhouse proper. This bathhouse is designed in two sections to take care of both men and women of the community.

#### HOSPITAL.

A company hospital is also maintained, for which a charge of 50 cents per month is made to all single men and \$1 per month for married men. This \$1 covers medical and surgical attention and all medicines that may be necessary for the entire family. In addition to the doctor regularly employed in taking care of the accident cases, the company employs eight physicians who furnish all necessary attention in the homes of our employees, and in addition to this, an eye, ear, nose, and throat specialist of high standing. Should any family require surgical and hospital service, such surgical service is covered by the \$1 and a hospital charge at the rate of 66 cents per day is made while confined in the hospital.

For a period of 40 months in the years 1897, 1898, 1899, and 1900 the company paid all the hospital and aid-fund charges for its employees.

At the present time a new hospital is being erected, which is estimated to cost \$250,000. This hospital will be equipped with every modern appliance conducive to efficiency and the comfort of the patients.

#### AID FUND.

Established July 1, 1877, for the purpose of providing a fund to aid in the case of sickness, accident, or death by accident.

Every man who desires to accept the benefits of this fund shall be charged through the mine office monthly with the sum of 50 cents, and every boy whose wages shall not exceed the sum of \$30 per month shall be charged 25 cents.

To the amount collected each month the Calumet & Hecla Mining Co. will add the same amount, to be placed to the credit of said fund.

When a contributor is disabled for labor by accident while actually engaged in work or labor for the company he shall receive from the aid fund, at the rate of \$25 per month, or fractional part thereof.

When a contributor dies from injuries received there shall be paid from the fund the sum of \$500.

When a contributor is disabled for labor from sickness he shall receive at a rate of \$25 per month, or fractional part thereof, payment to commence on the fifth day of sickness.

This fund shall be governed by a committee consisting of the mine physician, the chief mining captain, and one miner.

From time to time there have been reductions in the charges for the fund and during the calendar years of 1897, 1898, 1899, and 1900 the company paid the employees' charges for the fund. The charges were resumed in January, 1901, on which date the wages of all employees were raised 2½ per cent to cover charges.

Amount collected from employees for fund to Jan. 1, 1913.....	\$504, 881. 37
Amount donated by company.....	625, 482. 87
Total payments to members.....	1, 596, 707. 14

#### Liabilities:

Trustees.....	85, 000. 00
Calumet & Hecla Mining Co.....	25, 290. 02

110, 290. 02

#### Assets:

472 shares of Calumet & Hecla Mining Co.'s stock, selling price Aug. 7, 1913.....	193, 520. 00
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#### PENSION FUND.

In 1904 the company started a pension fund. Certain employees who had attained the age of 60 years or more and who had been in the company's employ 20 years or more, were retired on a pension proportioned to length of service and wages and for a period of five years.

From May 1, 1897, to January 1, 1901, the company paid in addition to the sum provided for in case of death and permanent disability by the aid fund in accordance with its rules, a sum equal to that provided for by said rules, viz, \$500 in case of death and \$300 for permanent disability.

#### AID OUTSIDE OF REGULAR AID FUND.

To relieve wants of men not entitled to aid from employees' aid fund by its rules, from 1900 to 1909, \$3,860.

## FREE FUEL DISTRIBUTION.

To the widows or orphans of quondam employees, to any employees who have been unfortunate in any of many different ways, and to any with a very large family and no income but the man's wages, the company has for many years given free wood, sufficient for the whole summer's requirements, upon request, and many loads of coal when circumstances justified it. The teaming cost alone of this wood delivery is in the neighborhood of \$100 per month.

## CALUMET &amp; HECLA BROOM FACTORY.

In July, 1903, the company built and equipped a broom factory and engaged a teacher, who taught three of our blind miners to make brooms. Total outlay, \$1,400. Since that time the factory has been and is self-supporting.

## PASTURAGE.

Pasturage is furnished to all employees for one cow, a charge of \$1.50 being made for each additional cow.

## GARBAGE REMOVAL.

All garbage is collected and removed without cost to the employees.

## ELECTRIC LIGHT.

The company has made a contract with the local electric light company whereby employees living in company houses are furnished with electricity at a reduced rate, viz, 8 cents per kilowatt hour; the regular rate being 12 cents per kilowatt hour. This reduction is granted to the Calumet & Hecla Mining Co. in consideration of its ownership of the pole lines running over the company's property.

## VOLUNTARY RELIEF FUND (INAUGURATED MAY, 1912).

Monthly payments to widows or orphans of deceased employees who lost their lives from either sickness or accident while in the employ of the company. This relief is started with each widow whose circumstances seem to require it shortly after the death of the support (breadwinner) of the family and continued until it is not necessary. Payments have been made for as long as 12 years in one case, and in one case over \$1,200 was paid to a widow in less than 4 years, when she remarried.

One hundred and eighty widows or orphans (only a few of the latter) have been paid from this fund to date \$29,292.

## INSURANCE.

Any employee during illness is entitled to 8 months' aid or a total of \$200, but should disability continue beyond the 8 months and death result within 12 months of the expiration of said aid, the Calumet & Hecla Mining Co. will pay the sum of \$250 exclusively to such relatives of the deceased as are first named in the following list: (1) To the widow; (2) to the children; (3) to the father and mother or either of them; (4) to the brothers and sisters.

## CHURCHES AND SCHOOLS.

To the thirty-odd churches in the community the company has contributed the sum of \$35,762. The company has also given free a site for all the churches on its location, and to the Young Men's Christian Association, and has also made a liberal donation to the Young Men's Christian Association. The company also owns 10 school buildings.

In addition to the above it is a rule of the company that no one residing on company property shall be allowed to suffer from the want of necessities of life.

Free open-air concerts are given by the Calumet & Hecla Band throughout the summer season.

## OSCEOLA CONSOLIDATED MINING Co.

The company contributes to charity and church organizations; all employees and their families have access to the public library and bathhouse in Calumet. There is no charge to employees on account of welfare agencies. The company pays \$250 in case an employee dies from illness, the payment being made to the nearest dependent or relative.

Pensions of \$15 to \$20 per month are paid to old retired employees.

## ISLE ROYALE COPPER Co.

Upon the death of an employee from sickness, the company pays the sum of \$250 to his heirs, as are first named in the following list: (1) To the widow; (2) to the children; (3) to the father and mother or either of them; (4) to the brothers and sisters. No charge is made to employees for this benefit.

## AHMEEK MINING Co.

Employees are allowed the use of small patches of ground for garden truck, etc.; also free pasturage.

They have access to the Calumet & Hecla library, which is well equipped. A charity account is carried in the cost sheet for necessary cases, and the company has given out strict orders that no one be allowed to suffer on company property for the want of necessities of life whether it be an employee or not.

The company also maintains an employees' aid fund, by which the employees are paid \$1 per day for sickness for each day after the sixth day they are off duty through sickness.

This aid fund also pays injured employees \$1 per day from the sixth day to the fourteenth day after injury, as the compensation act covers only after the fourteenth day. No charges are made by the company for any of the above. Employees have not contributed to the aid fund since August, 1912.

## TAMARACK MINING Co.

Free access to library. Baths at 2½ cents. House rent free to widows. Wood supplied to widows. Company pays \$250 on death of an employee from sickness.

## ALLOUEZ MINING Co. AND CENTENNIAL COPPER MINING Co.

Free pasturage for cows. Wood (old shaft rollers, etc.) allowed to parties who are in need. Charity accounts carried on cost sheets and strict orders given that no person living on the company's land, whether employee or not, be allowed to be in dire necessity. Donation of \$250 to the relative or relatives of a member of the aid fund who dies from illness. Outlying lands of the company are rented (preferably to employees) as farms, with rates from \$10 to \$20 per annum for 40 acres. Small, irregular pieces of land are rented, preferably to employees, as potato patches, etc., at nominal rentals, from \$1 to \$5 a year, depending on size, and in some cases no charge at all. Employees have privileges of Calumet & Hecla public bathhouse, at 2½ cents per bath.

Employees have privileges of Calumet & Hecla public library. Open air band concerts by the Calumet & Hecla band in summer. Preliminary plans have been made for a workmen's club house. Company ambulance to take patients to hospital, whether employee or member of employee's family, in case of accident or illness.

## SUPERIOR COPPER Co.

We carry a charity account. We have general orders that no one in our employ or living upon company property shall go hungry. All employees have free pastures for cattle and free land for gardens. In cases of death by sickness the company pays \$250 to the nearest relative. There are free band concerts during the summer.

## LA SALLE COPPER Co.

This company has no special welfare agencies. Employees are on an equal footing with Calumet & Hecla employees in the use of the Calumet & Hecla bathhouse and library. The company will not knowingly allow any one on its property, whether employee or not, to suffer for lack of necessities; one pauper family receives free house rent. Pasturage for one cow to a family is free.

## COPPER RANGE CONSOLIDATED Co.

There are no specific welfare agencies maintained by the company unless the maintenance of a public library at Painesdale and branches at other locations comes under this head, all of which is free to employees and the public. There are free baths at the library in Painesdale, and bathing equipment of change houses, tubs, and showers, are open to men at all times free.

## LAKE COPPER CO.

A mine that is not yet paying expenses can not go far in the line of charities, but an aid fund is maintained for the employees, for which a deduction of 50 cents a month is made.

The Laurium Mining Co. reported, "This company has no special welfare agencies;" the Quincy Mining Co. reported, "None for which any charge is made;" the Wolverine Copper Mining Co., Franklin Mining Co., Hancock Consolidated Mining Co., Oneco Copper Mining Co., Houghton Copper Co., Winona Copper Co., and Mass Consolidated Mining Co. reported, "None;" and the Mohawk Mining Co. made no answer to the inquiry.

## MICHIGAN COPPER DISTRICT.

The Michigan copper district, also called the Lake Superior copper range, embraces mines in Houghton, Keweenaw, and Ontonagon counties. These three counties are the most northern part of the Upper Peninsula of Michigan, and Houghton and Keweenaw counties constitute the Keweenaw Peninsula, which is about 40 miles wide, east to west, at its base, and projects about 70 miles northeast into Lake Superior. The greater number of mines in this district, and the mines with the largest production, are in Houghton County, which lies between Ontonagon County on the south and Keweenaw County on the north. The developed and developing part of the Michigan copper district is about 100 miles long, and varies in width from 3 to 5 miles. The lodes or veins of copper are tilted at various angles, from 20 degrees to 72 degrees with the horizon. Those that are being mined vary from 35 to 72 degrees.

The production of copper on a commercial basis in the Michigan district began in 1845. This district is the oldest copper-producing range in the United States, except Santa Rita, N. Mex., where production began about 1800. From 1845 to 1912, inclusive, Michigan produced 5,205,717,606 pounds of copper, or 29.53 per cent of the total output in the United States. In total production to the end of 1912 Michigan is surpassed only by Montana, which has produced 33.44 per cent of the output of the United States. For many years subsequent to 1845 the annual production of copper was greater in Michigan than in any other State. Its annual production is now surpassed only by that of Arizona and that of Montana. According to "Copper in 1912," by B. S. Butler, the smelter output in pounds of copper during 1912 was 359,322,096 in Arizona, 308,770,826 in Montana, 231,112,228 in Michigan, 132,150,052 in Utah, 83,413,900 in Nevada, 31,926,209 in Alaska, 31,516,471 in California, 29,170,400 in New Mexico, 18,395,256 in Tennessee, and in the whole United States, including Alaska, 1,243,268,720.<sup>1</sup>

The value of the 231,112,228 pounds of fine copper produced in Michigan during 1912 was \$36,977,956.48, on the basis of the market price being 16 cents a pound; it rose to 17 cents during 1912.

Horace J. Stevens, author of The Copper Handbook, says in a paper on "Mines of the Lake Superior copper district":<sup>2</sup>

Occasionally immense masses, of many tons weight, are found, while in the richer mines there is much "barrel work," i. e., masses of virgin metal, ranging from a few

pounds up to 100 pounds or more in weight. The principal reliance of the mines is upon stamp rock; that is, amygdaloid or conglomerate rock carrying native metal, in sizes ranging from that of a pea down to flakes of almost microscopical dimensions that are saved with difficulty from the slimes at the mill.

The following is quoted from the article on Michigan in "Copper in 1912":

A little native silver occurs with the copper. The lodes are of low grade, but characterized by great extent and rather uniform distribution of the metallic content. This, together with the fact that the ore is susceptible of high concentration with low cost of refining the resultant "mineral," makes it possible to work these low-grade deposits at a good profit. The native copper occurs in the lodes in masses varying from microscopic size to bodies weighing hundreds of tons. The richest lode mined at present yields less than 1.5 per cent copper, and the poorest rock treated yields but little above five-tenths of 1 per cent of metal. For this low-grade ore to be profitable it must be handled on a large scale; this has resulted in the construction of the immense plants that characterize the Lake district.

The following table taken from "Copper in 1912" shows that the percentage of copper extracted from the copper-bearing rock or ore is less than 1 per cent in Michigan, and less than in any other of the important copper-mining States:

*Copper produced in 1912 from ores in which copper constitutes the principal value, by States.*

State.	Copper ore.	Copper in ore.	Percentage.	Gold in ore.	Silver in ore.	Value in gold and silver per ton.
	<i>Short tons.</i>	<i>Pounds.</i>		<i>Fine ounces.</i>	<i>Fine ounces.</i>	
Alaska.....	93,452	29,230,491	15.63	7,428.08	376,593	\$4.11
Arizona.....	6,542,154	359,407,265	2.75	57,507.81	2,378,593	.41
California.....	408,622	31,538,740	3.85	14,219.65	792,445	1.00
Colorado.....	13,718	1,622,605	5.91	8,759.83	221,327	23.13
Idaho.....	98,848	6,663,229	3.37	2,039.31	451,918	2.81
Michigan.....	11,411,941	218,138,408	.96		528,453	.03
Montana.....	5,094,432	301,925,189	2.96	34,200.83	10,655,055	1.42
Nevada.....	3,276,169	85,579,530	1.31	23,511.60	173,545	.18
New Mexico.....	1,195,683	33,528,958	1.40	7,284.74	290,568	2.75
North Carolina.....	500	75,915	7.59	43.86	523	2.25
Oregon.....	4,569	260,429	2.85	616.39	10,555	4.2
Pennsylvania and Maryland.....	225,200	594,022	.01		502	.001
Tennessee.....	603,229	18,483,173	1.53	399.82	89,893	1.05
Texas.....	22	721	1.64	.24	10	.50
Utah.....	6,670,845	127,712,169	.96	105,720.03	2,512,381	.56
Virginia.....	1,160	112,835	.98		982	.52
Washington.....	15,715	1,054,805	3.35	13.431	230,883	9.21
Wyoming.....	155	27,570	8.89	.95	115	.59
Total and average.....	35,656,414	1,215,956,054	1.71	261,867.45	18,747,341	.47

During recent years great improvement has been made in the methods of stamping and smelting the copper-bearing rock, so that much rock which had too small a percentage of copper to pay for mining, stamping, and smelting by old methods can now be produced profitably. At Lake Linden, Mich., where the stamp mill of the Calumet & Hecla Mining Co. is located, there is a pile of sand, covering many acres, which is the refuse accumulated from the stamp mill for 40 years. Analysis has shown that there are 5 pounds of copper in each ton of this sand, and it is intended that the sand shall be put through a regrinding process, which has been invented in the last four years. A regrinding mill is being erected, and it is estimated that \$100,000,000 worth of copper can be saved from this sand.

Following is a list of the mining companies now operating in the Michigan copper district, with the capitalization of each and the

<sup>1</sup> U. S. Geological Survey, Mineral Resources of the United States, 1912.

<sup>2</sup> Read at twelfth annual meeting of the Lake Superior Mining Institute, held at Houghton, Mich., Aug. 8-10, 1906, and published in Vol. XII of the proceedings, pp. 8, 9.

dividends paid by each. While, as will be seen from the table, most of the subsidiary companies largely owned or controlled by the Calumet & Hecla Co. were not yet paying dividends, the annual statement of that company for 1912 showed that the value of real estate owned by the corporation and used in its business was \$16,788,104, and of real estate not used in its business was \$686,520, and that the value of assets in excess of liabilities December 31, 1912, was \$10,716,414. The extent of the stock interest of the Calumet & Hecla Co. in these subsidiary companies is shown on page 131.

[Information more in detail as to the organization and properties of these mining companies is given in the appendix.]

Company.	Year organized.	Capital stock.				Dividends to 1912, inclusive.
		Par value per share.	Authorized.	Amount issued, par value.	Amount paid in.	
Calumet & Hecla Mining Co.....	1872	\$25	\$2,500,000	\$2,500,000	\$1,200,000	\$120,050,000
Subsidiary companies:						
Ahmeek Mining Co.....	1880	25	1,250,000	1,250,000	850,000	1,350,000
Allouez Mining Co.....	1859	25	2,500,000	2,500,000	2,225,000	None.
Centennial Copper Mining Co.....	1896	25	2,500,000	2,250,000	1,750,000	None.
Cliff Mining Co.....	1910	25	2,500,000	1,500,000	780,000	None.
Gratiot Mining Co.....	1906	3	300,000	300,000	300,000	None.
Isle Royale Mining Co.....	1899	25	3,750,000	3,750,000	(1)	None.
La Salle Copper Co.....	1906	25	10,000,000	7,574,425	(1)	None.
Laurium Mining Co.....	1909	25	1,000,000	1,000,000	(1)	None.
Osceola Consolidated Mining Co.....	1873	25	2,500,000	2,403,750	(1)	11,170,100
Seneca Mining Co.....	1860	25	500,000	500,000	200,000	None.
Superior Copper Co.....	1904	25	2,500,000	2,500,000	(1)	None.
Tamarack Mining Co.....	1882	25	1,500,000	1,500,000	(1)	9,420,000
White Pine Copper Co. (common)	1909	25	3,750,000	2,133,000	(1)	None.
White Pine Copper Co. (preferred)	1909	25	1,250,000	152,300	(1)	None.
Copper Range Consolidated Co.....	1901	100	40,000,000	39,369,200	(1)	12,902,249
Subsidiary companies:						
Baltic Mining Co.....	1897	25	2,500,000	2,500,000	1,800,000	7,750,000
Trimountain Mining Co.....	1899	25	2,500,000	2,500,000	2,000,000	1,250,000
Champion Copper Co.....	1899	25	2,500,000	2,500,000	2,500,000	943,876
Atlantic Mining Co.....	1872	25	2,500,000	2,500,000	1,180,000	None.
Quincy Mining Co.....	1848	25	3,750,000	2,750,000	2,150,000	20,430,000
Mohawk Mining Co.....	1898	25	2,500,000	2,500,000	2,100,000	2,250,000
Wolverine Copper Mining Co.....	1890	25	1,500,000	1,500,000	780,000	7,440,000
Franklin Mining Co.....	1857	25	5,000,000	4,158,950	2,362,284	1,240,000
Indiana Mining Co.....	1909	25	2,500,000	2,000,000	840,000	None.
North Lake Mining Co.....	1908	25	2,500,000	2,500,000	800,000	None.
South Lake Mining Co.....	1909	25	2,500,000	1,447,975	382,265	None.
Algolah Mining Co.....	1910	25	2,500,000	1,750,000	770,000	None.
Winona Copper Co.....	1898	25	5,000,000	4,166,675	3,833,341	None.
Houghton Copper Co.....	1909	25	2,500,000	1,675,000	402,000	None.
Mass. Consolidated Mining Co.....	1899	25	2,500,000	2,500,000	2,300,000	None.
Hancock Consolidated Mining Co.....	1906	25	5,000,000	4,158,950	2,362,284	None.
Oneco Copper Mining Co.....	1899	25	2,500,000	1,750,000	385,000	None.
Lake Copper Co.....	1905	25	2,500,000	2,500,000	300,000	None.
Victoria Copper Mining Co.....	1899	25	2,500,000	2,500,000	1,400,000	None.
Total.....			133,550,000	119,040,225		196,196,225

<sup>1</sup> Not reported.

The mines of several of the companies that have not paid dividends are still in the "prospect" stage of development.

The strike of 1913 affected the mines of all the companies included in the table except the Atlantic Mining Co., which was not then in operation, the White Pine Copper Co., and the Victoria Copper Mining Co.

The following is quoted from the annual report of the Calumet & Hecla Mining Co. for the year ending December 3, 1912.

The Calumet & Hecla Mining Co. owns:

Shares.	Company.	Shares issued.
24,200	Ahmeek Mining Co.....	50,000
41,000	Allouez Mining Co.....	100,000
41,500	Centennial Copper Mining Co.....	90,000
19,400	Cliff Mining Co.....	60,000
50,100	Gratiot Mining Co.....	100,000
30,500	Isle Royale Copper Co.....	150,000
152,977	La Salle Copper Co.....	302,977
37,550	Laurium Mining Co.....	40,000
32,750	Osceola Consolidated Mining Co.....	96,150
11,207	Seneca Mining Co.....	20,000
50,100	Superior Copper Co.....	100,000
19,400	Tamarack Mining Co.....	60,000
43,202	White Pine Copper Co., common.....	85,320
6,092	White Pine Copper Co., preferred.....	6,092

Several years ago the Calumet & Hecla Mining Co. formed a plan to secure control of a number of other mining companies, and it purchased stock in 13 companies—in some cases a majority of the stock and in other cases a controlling interest in the stock issue. In 1911 the Calumet & Hecla Co. decided to consolidate these 13 companies with itself and proposed to the stockholders of these companies that they exchange their stock for Calumet & Hecla stock on a basis that was offered by the directors of the Calumet & Hecla Co. The proposed basis of stock exchange was not satisfactory to some of the stockholders of the 13 companies, as they considered that they were not offered a fair equivalent. Some of the dissatisfied stockholders attacked the consolidation in the courts, on the ground that it was a violation of the Sherman antitrust law. After these suits had been started, the directors of the Calumet & Hecla Co., by a circular dated October 6, 1911, announced the abandonment of the plan for consolidation, or rather the plan for the exchange of stock. Nevertheless, these 13 companies are now practically consolidated with the Calumet & Hecla Co., for they have the same officers, practically the same directors, and they are managed as a single corporation. Suits are now pending to prevent the Calumet & Hecla Co., or its officers, from voting the shares that company owns in the 13 other companies. Two suits started by Godfrey M. Hyams are pending in the United States Circuit Court of Appeals for the Sixth Circuit and one started by Charles M. Turner is pending in the circuit court for the county of Ingham, Mich.

The Franklin Mining Co., Indiana Mining Co., North Lake Mining Co., South Lake Mining Co., and Algolah Mining Co., are under the same management.

The Winona Copper Co. and the Houghton Copper Co. are under the same management.

The Hancock Consolidated Mining Co. and the Oneco Mining Co. are under the same management.

The Copper Range Consolidated Co. and the Isle Royale Mining Co. were incorporated under the laws of New Jersey, the Gratiot Mining Co. under the laws of Maine, and all the other companies under the laws of Michigan.

The Copper Range Consolidated Co. is a holding company, and holds the stock of the Baltic Mining Co., the Trimountain Mining Co.,

the Champion Copper Co., the Atlantic Mining Co., the Copper Range Railroad Co., and the Copper Range Co. (a land and timber company).

The Mohawk Mining Co. and the Wolverine Mining Co. are under the same management.

The mines of the Ahmeek Mining Co. and Mohawk Mining Co are in Keweenaw County; the mines of the White Pine Copper Co., Indiana Mining Co., North Lake Mining Co., South Lake Mining Co., Algoma Mining Co., Mass Consolidated Mining Co., Lake Copper Co., and Victoria Copper Mining Co. are in Ontonagon County; the mines of the other companies in Houghton County.

The head office of the Hancock Consolidated Mining Co. is at Hancock, Mich.; the head offices of the Quincy Mining Co., Mohawk Mining Co., and Wolverine Mining Co. are in New York; the head offices of all the other companies are at Boston.

The people of Michigan have for years been discussing a measure, proposed in several sessions of the legislature, to assess a tonnage tax on all copper mined in the State. Sentiment in favor of this measure is undoubtedly growing, though strongly combatted by the mining companies. The argument urged in favor of the measure is that the people of Michigan are entitled to more of the benefits derived from its natural resources than they now receive. The greater part of the stock of the copper mining companies is owned in Boston or elsewhere in the Eastern States, and probably not over 10 per cent is owned by citizens of Michigan. An official list of the stockholders of the Calumet & Hecla Mining Co., the largest company in the district, which is on file in the office of the circuit court for the county of Houghton, shows 98,109 shares outstanding on January 1, 1912, the shares having a par value of \$25 each. Of these 98,109 shares 4,550, or 4.64 per cent, were owned by citizens of Houghton County; 5,022, or 5.12 per cent, by citizens of other counties in Michigan, and 88,537, or 90.24 per cent, by persons whose residences were in other States.

Copper mining is practically the only industry in the Michigan copper district. The agricultural resources of the land have been but little developed. Originally it was a fine timber country. Most of the timber suitable for lumber has been cut, but much timber grown in the district is used in the mines.

The Great Lakes give the district cheap transportation facilities for the copper that is shipped out of the district and for the coal and other materials that are brought into the district. A ship canal, called the Portage Lake Canal, and owned by the United States, passes through Houghton County, greatly shortening the distance from one end of Lake Superior to the other. The copper district is served by the Mineral Range, the Copper Range, and the Keweenaw Central Railroads, which connect with the Chicago & North Western Railroad and the Chicago, Milwaukee & St. Paul Railroad.

## POPULATION OF THE DISTRICT.

As shown by the Thirteenth Census of the United States, the population of Houghton County in 1910 was 88,098; Keweenaw County, 7,156; and Ontonagon County, 8,650. The principal places in these counties, with their population in 1910, were as follows: Houghton County—Houghton village, the county seat, 5,113; Hancock city, 8,981; Laurium village, 8,537; Red Jacket village, 4,211; Calumet Township (including Laurium and Red Jacket villages), 32,845. Keweenaw County—Ahmeek village, 766. Ontonagon County—Ontonagon village, 1,964.<sup>1</sup> Other statistics of the population of these counties, as shown by the census of 1910, appear in the following table:<sup>2</sup>

*Population of Houghton, Keweenaw, and Ontonagon Counties, Mich.—Male and female, native and foreign born, 1910.*

Population.	Houghton County.	Keweenaw County.	Ontonagon County.	Total.
Total population.....	88,098	7,156	8,650	103,904
Male.....	47,353	4,186	4,835	56,374
Female.....	40,745	2,970	3,815	47,530
White.....	87,990	7,153	8,644	103,787
Other races.....	108	3	6	117
Native white, native parentage.....	9,446	585	1,719	11,750
Native white, foreign parentage.....	35,761	2,739	2,930	41,430
Native white, mixed parentage.....	9,450	633	1,060	11,143
Foreign-born white.....	33,333	3,196	2,935	39,464
Males of voting age.....	25,481	2,365	2,732	30,578
Foreign-born white of voting age.....	18,001	1,856	1,615	21,472
Foreign-born white, naturalized.....	7,742	821	945	9,508
Foreign-born white having first papers.....	2,875	270	122	3,267
Alien.....	6,562	671	418	7,651
Unknown.....	822	90	130	1,042

As will be seen the population of the three counties is largely of foreign birth. Of the total white population, 103,787, in the three counties combined, 39,464, or 38.02 per cent, were foreign-born white, 41,430, or 39.92 per cent, were native white of foreign parentage; 11,143, or 10.74 per cent, were native white of mixed parentage, and only 11,750, or 11.32 per cent, were native white of native parentage.

Of the 21,472 foreign-born white of voting age in the three counties, only 9,508, or 44.28 per cent, were naturalized. In addition there were 3,267 foreign-born white who had taken out first papers, but they are not eligible to vote under the laws of Michigan.

<sup>1</sup> Thirteenth Census, bulletin: Population, Michigan. Number of Inhabitants, by Counties and Minor Civil Divisions.

<sup>2</sup> Thirteenth Census, bulletin: Population, Michigan. Composition and Characteristics of the Population.

The number of residents of the three counties who were born in foreign countries, as shown by the Thirteenth Census of the United States, was as follows:<sup>1</sup>

*Number of white persons residing in Houghton, Keweenaw, and Ontonagon Counties, Mich., who were born in foreign countries, 1910.*

Foreign white.	Houghton County.	Keweenaw County.	Ontonagon County.	Total.
<b>Born in—</b>				
Austria.....	3,333	508	165	4,006
Belgium.....	26		7	33
Canada, French.....	2,616	128	199	2,943
Canada, Other.....	1,477	42	324	1,843
Denmark.....	51	9	24	84
England.....	4,459	640	163	5,262
Finland.....	11,536	1,200	1,158	13,894
France.....	146	5	8	159
Germany.....	1,723	87	195	2,005
Greece.....	65			65
Holland.....	17	1		18
Hungary.....	921	158	4	1,083
Ireland.....	799	22	91	912
Italy.....	2,634	144	33	2,811
Norway.....	1,030	120	58	1,208
Russia.....	348	32	244	624
Scotland.....	353	15	15	383
Sweden.....	1,512	73	221	1,806
Switzerland.....	85	3	12	100
Turkey.....	73		1	74
Wales.....	56		2	58
Other foreign countries.....	73	9	11	93
<b>Total.....</b>	<b>33,333</b>	<b>3,196</b>	<b>2,935</b>	<b>39,464</b>

The development of the Michigan copper range began about 1844. The first foreigners employed in the range were Cornishmen, Scotchmen, Irishmen, and Germans. They came to the district in the early years of development, and they constituted the greater proportion of the mine workers during the first 30 years. Of these the Cornishmen or their descendants are now the most numerous. Canadians began to come prior to 1870. In the seventies Finlanders, Swedes, and Norwegians began to arrive, and in the eighties Italians. About 1890 Croatians began to come, and they were followed, in the nineties, by other Austrians, and by Hungarians and Poles. The Finlanders are twice as numerous as the mine workers of any other race.

As shown by the last preceding table, 39,464 of the white persons in the three counties were born in foreign countries, and of these 13,894, or slightly over one-third, were born in Finland, 6,625 in England, Wales, Scotland, and Ireland, 5,089 in Austria and Hungary, 4,786 in Canada, 3,098 in Norway, Sweden, and Denmark, 2,811 in Italy, and 2,005 in Germany.

The number of native white residents of the three counties both of whose parents were born in foreign countries, as shown by the Thirteenth Census, was as follows.<sup>1</sup>

<sup>1</sup> Thirteenth Census, bulletin: "Population, Michigan. Composition and Character of the Population."

*Number of white persons residing in Houghton, Keweenaw, and Ontonagon Counties, Mich., whose parents were born in foreign countries—1910.*

Native white.	Houghton County.	Keweenaw County.	Ontonagon County.	Total.
<b>Both parents born in—</b>				
Austria.....	2,537	327	132	2,996
Canada—French.....	4,110	179	217	4,506
Canada—Other.....	730	25	184	939
Denmark.....	50	3	17	70
England.....	4,407	410	154	4,971
France.....	95	3	10	108
Germany.....	3,630	191	335	4,156
Holland.....	10		5	15
Hungary.....	314	50	2	366
Ireland.....	1,796	92	211	2,099
Italy.....	1,674	82	26	1,782
Norway.....	930	95	38	1,063
Russia.....	302	66	196	564
Scotland.....	245	4	12	261
Sweden.....	1,439	58	151	1,648
Switzerland.....	84	3	7	94
All others of foreign parentage <sup>1</sup> .....	13,408	1,151	1,233	15,792
<b>Total.....</b>	<b>35,761</b>	<b>2,739</b>	<b>2,930</b>	<b>41,430</b>

<sup>1</sup> Native whites having both parents born in countries other than specified, and also those having both parents of foreign birth but born in different countries.

In reporting the number of native white persons both of whose parents were born in foreign countries, the census did not enumerate separately those born in Finland, but the number is undoubtedly large.

The mining companies dominate the economic, industrial, and political situation in the district. Mining is the only big industry, and all other business is dependent upon it. The mining companies own most of the land in the district, pay most of the taxes, and in some townships pay 90 per cent of the taxes. They refuse to sell any land even with the mining rights reserved. Therefore outside of the city of Hancock and the few incorporated villages there are very few freeholders, and nearly all of the houses are owned by the companies and rented to employees, or were built by employees on land rented by ground-rent leases. The terms of these leases are explained in a section of this report headed "Stipulations in leases."

Community interests are almost entirely subject to the direction of the mine managers. Most of the churches in the district were built on land that the mining companies have given and most of the schools have been built by the companies and rented by them to the townships. The mine managers control the school boards, and their powerful influence is felt in the nomination and election of village, township, and county officers. There are 18 members of the board of supervisors in Houghton County, and they assess property and decide on all expenditures for county purposes. Following is a list of the members of the present board, with the business connection of each:

*Board of supervisors of Houghton County, April, 1913, to April, 1914.*

Adams Township: A. D. Edwards, formerly chief clerk Atlantic Mining Co.; member of Michigan House of Representatives.

Calumet Township: James MacNaughton, general manager Calumet & Hecla Mining Co.

Chassel Township: Edward Hamar, general manager Worcester Lumber Co.

Duncan Township: A. G. Johnston, represents Pricket Farming Land & Lumber Co.  
 Elm River Township: Rex R. Seeber, superintendent Winona Mining Co.  
 Franklin Township: Richard Rourke, jr., bartender.  
 Hancock Township: Patrick Sollman, farmer.  
 Laird Township: Peter Hiltunen, farmer; contractor for getting out timber for Worcester Lumber Co.  
 Osceola Township: A. L. Burgan, superintendent Osceola Tamarack Stamp Mills.  
 Portage Township: Gust. T. Hartmann, formerly superintendent Copper Range Railroad. His brother is superintendent of the Mohawk mine.  
 Quincy Township: Charles L. Lawton, general manager Quincy Mining Co.  
 Schoolcraft Township: Samuel Eddy, sawmill owner; furnishes lumber to mining companies.  
 Stanton Township: Edward Koepel, superintendent stamp mills of Copper Consolidated Co.  
 Torch Lake Township: Charles Smith, chief clerk stamp mill of Calumet & Hecla Mining Co.  
 Hancock, first ward: John L. Harris, superintendent Hancock Mining Co.  
 Hancock, second ward: Charles S. Mason, coal, brick, wood, lime, and tile dealer; used by companies.  
 Hancock, third ward: John Funkey, sr., hardware merchant; sells to mining companies.  
 Hancock, fourth ward: Richard H. Hosking, stone and brick contractor.

It will be noticed that the board is largely composed of mine officers. Most of the other members are engaged in business enterprises, such as the lumber industry, which are closely connected with the mining companies and dependent on them. Among the 18 directors there is only one, and he is a Socialist, who did not usually vote with the others on questions before the board relating to the strike.

If all the foreigners in the copper range should become naturalized and the working people should vote together, they undoubtedly could control the elections, but fear discharge from employment by the companies, and that means in most cases that they could not obtain other employment in the district, and in some cases that they would lose the homes they have built. According to the United States census there were in 1910 in Houghton, Keweenaw, and Ontonagon Counties 30,578 males of voting age; the foreign-born white of voting age numbered 21,472; the foreign-born white who were naturalized numbered 9,508, and the foreign-born white who had first papers numbered 3,267. In Michigan foreign-born males who have taken out only first papers are not eligible to vote. The foreign-born white that are naturalized are only 31.09 per cent of the number of males of voting age, but the number of foreign-born white of voting age is 70.22 per cent of the total males of voting age.

Three daily papers printed in the English language are published in Houghton County—a morning paper at Houghton, an evening paper at Hancock, and an evening paper at Calumet. These three dailies advocate the policies of the mining companies and voice the opinions of the mine managers. A number of newspapers printed in foreign languages are published in Houghton County—a daily Finnish paper at Hancock (a strong socialistic organ), a daily Finnish paper at Calumet, a triweekly Finnish paper at Hancock, a semi-weekly Finnish paper at Calumet, a daily Italian paper at Calumet, a triweekly Croatian paper at Calumet, and a weekly Slavonian paper at Calumet.

## APPENDIX I.

### AGREEMENT BETWEEN WESTERN FEDERATION OF MINERS AND BUTTE & SUPERIOR COPPER CO.

Following is a copy of a contract or agreement between the federation and one of the Montana companies, which is similar in essentials to the contracts with other companies, all of which contracts are made for three years:

This agreement, made and entered into this 3d day of July, A. D. 1912, by and between the Butte Miners Union No. 1, Western Federation of Miners, hereinafter designated as the "union" party of the first part, and the Butte & Superior Copper Co. (Ltd.), hereinafter designated as the "mining company," party of the second part, witnesseth:

Whereas, the said mining company employs a number of the members of the union at and about its mines in the vicinity of Butte, Silver Bow County, Mont., and it is the desire of each of the respective parties hereto to perpetuate friendly relations and at the same time to have a definite agreement with reference to the compensation to be paid the members of the union employed by the mining company:

Now, therefore, in consideration of the mutual promises and agreements hereinafter specified, it is agreed between the respective parties hereto as follows, to wit:

1. That 8 hours in each 24 hours shall constitute a shift or day's work.
2. That the men employed underground, belonging to said union, shall start to go down the shaft or into other mine opening at the beginning of a shift, and shall leave their places of work at the expiration of eight and one-half hours from that time, it being understood that the miners shall have one-half hour of said time in which to eat lunch, the miners to be hoisted or come from their work on their own time. It is also understood that where three consecutive shifts are employed, eight consecutive hours shall constitute a day's work.
3. Where the word "miner" is used in this agreement [sic], shall mean all underground men engaged in any of the work of mining and cage tenders at the collar of the shaft.
4. The rate or amount of wages to be paid miners for a day's work or, proportionately, for a part of a day's work shall be determined as follows:  
 The average price of electrolytic copper as given in the Engineering and Mining Journal for each calendar month shall be the basis for determining the rate of wages.
5. The Mining Company agrees that it will during the continuance of this contract, pay a minimum wage scale, which shall be equal to the amount which the members of the Union were receiving during the month of May, 1912.
6. When the average monthly price of electrolytic copper is 15 cents and over and under 17 cents, the wages of all men within the jurisdiction of the Union employed underground shall be increased 25 cents per day over and above the wages in effect during the month of May, 1912; when the price of electrolytic copper is 17 cents and over, the wages of all men employed underground belonging to the Union shall be increased an additional 25 cents per day over the scale of wages received during the month of May, 1912.

The intention of the foregoing is that when the average monthly price of electrolytic copper is under 15 cents per pound all miners other than miners employed in shafts, station cutting and winzes, and station tenders shall receive \$3.50 per day; for all miners employed in shafts, station cutting and winzes, and station tenders the wage rate shall be \$4 per day. When the average monthly price of electrolytic copper is 15 cents and under 17 cents, then the wage rate shall be \$3.75 per day for all miners other than miners employed in shafts, station cutting, and winzes and station tenders, and for all miners employed in shafts, station cutting, and winzes and station tenders the wage rate shall be \$4.25 per day. When the average monthly price of electrolytic copper is 17 cents per pound or over, the wage rate shall be \$4 per day for all miners other than miners employed in shafts, station cutting, and winzes and station tenders, and for all miners in shafts, station cutting, and winzes and station tenders the wage rate shall be \$4.50 per day.



For all men employed upon the surface at or about any of the mines of Mining Company, over whom the said Union has acquired jurisdiction from the Mill and Smelters' Union, the wage rate shall be as follows: When the average monthly price of electrolytic copper is under 15 cents, the wage rate shall be the scale formerly required by that Union when copper was under 18 cents per pound; when the average monthly price of electrolytic copper is 15 cents and over, and under 18 cents per pound, then the wage rate shall be increased 25 cents per day above that scale; and when the average monthly price of electrolytic copper is 18 cents per pound and over, then the wage rate for such employees shall be increased an additional 25 cents per day. It is understood that whenever the Company has been paying during the month of May a rate in excess of the Union wage scale the foregoing increase shall not apply, but in no case shall any employee receive less than the Union scale, as above provided.

7. Should a miner's employment terminate by reason of voluntarily quitting, discharge, or other reason before the end of any calendar month, the rate of settlement in such cases shall be as follows:

The wage rate for any settlement made for any part of a month up to and including the 15th of such month shall be based upon the previous month's price of electrolytic copper.

The wage rate for any settlement made for any part of a month extending beyond the 15th of such month shall be made for the whole time of employment in said month at a rate based upon the average price of electrolytic copper for the first 15 days of the calendar month of settlement.

8. Should the authority used in ascertaining the market price of copper appear to either party to this agreement to be false or wrong at any time, then either party shall have the right to request that a representative be appointed by each party and those two persons shall appoint a third, a majority of whom shall decide on the method or means to be used in arriving at the correct price of copper for the purpose of this agreement.

9. Nothing in this agreement shall deny or preclude the right of employees, either themselves or through the said Union, from taking up with the Mining Company the question of any grievance or unfair treatment, or any matter herein agreed upon, that may require adjustment.

10. It is agreed that this agreement and contract shall take effect from June 1, 1912, and remain in full force and effect for a period of three years from and after the date hereof, and that said agreement shall remain in full force and effect thereafter until 30 days' written notice shall be given by either party to the other of its desire to terminate the contract.

In witness whereof, the said party of the first part has caused these presents to be executed in duplicate by the following committee, thereunto duly authorized by said first party, and the party of the second part has caused these presents to be executed in duplicate by its proper officers, thereunto duly authorized, the day and year first above written.

By .....  
 .....  
*Authorized Committee of Party of the First Part.*

By .....  
 .....  
*Its General Superintendent, Party of the Second Part.*

**APPENDIX II.**

**ORGANIZATION AND PROPERTIES OF THE CALUMET & HECLA MINING CO. AND SUBSIDIARY COMPANIES.**

[From Moody's Manual, 1913.]

**CALUMET & HECLA MINING CO.**

Incorporated in 1871, in Michigan, as a consolidation of the Hecla, Calumet, Portland, and Scott Mining Cos. Charter renewed in 1901 for 30 years and amended in 1903, giving the company the right to hold securities of other companies, in addition to doing a general mining and smelting business. Owns a majority of the capital stock of the Gratiot Mining Co., La Salle Copper Co., Laurium Mining Co., Seneca Mining Co., Superior Copper Co., and White Pine Copper Co., and has substantial holdings in Centennial Copper Mining Co., Ahmeek Mining Co., Allouez Mining Co., Isle Royale Copper Co., Osceola Consolidated Mining Co., Tamarack Mining Co., and Cliff Mining Co. See appended statements of these companies.

Having acquired all the capital stocks of the Frontenac Mining Co., Manitou Mining Co., and St. Louis Copper Co., the real and personal properties of these companies, together with that of the Dana Copper Co., were taken over by the Calumet & Hecla Mining Co. during 1912. The lands formerly owned by the Manitou, Frontenac, and Dana companies are now known as the "Manitou-Frontenac branch" and the lands of the St. Louis company as the "St. Louis branch."

Owing to the opposition on the part of minority stockholders the proposed plan of consolidation with subsidiaries, which was favorably voted upon by the shareholders of companies interested in March, 1911, was abandoned.

*Properties.*—The Calumet & Hecla mine proper includes about 2,750 acres in Houghton County, Mich., being one of the largest producers in the world. Company owns also large tracts west of the Tamarack mine and the Metalline and Dover tracts, with an area of 200 acres lying immediately south of the Tecumseh, and also vast tracts of timber lands in Michigan and Wisconsin. The total landed holdings of the company, including property controlled through subsidiary corporations, mining lands under option, and miscellaneous lands in Houghton, Keweenaw, and Ontonagon Counties, approximates 75,000 acres.

The stamp mills are at Lake Linden, 4 miles from the mines, on a tract of 998 acres, having several miles of frontage on Torch Lake. These mills have been entirely rebuilt, remodeling being completed in 1907. The new power plant at Lake Linden, which when completed will have a total capacity of 18,000 kilowatts, equal to more than 24,000 horsepower, furnishes electrical energy for the mine as well as for the mills. Water for the mills is supplied by five pumps, of which the Michigan is the most powerful in the world, having a daily capacity of 60,000,000 gallons. The four other pumps have a combined capacity of 72,000,000 gallons. The Torch Lake smelter is situated at Hubbel, about a mile south of the company's stamp mills, on a 30-acre site. The smelter has four furnace buildings, each 80 feet by 130 feet, and a blister copper furnace building 50 feet by 70 feet, with 11 reverberatory furnaces. The power plant at the smelter has three 125-horsepower boilers, and a fourth boiler generates steam by the combustion of waste gases from the reverberatory furnaces. The Torch Lake smelter has deep-water shipping facilities, and in addition is served by three railways.

The Buffalo Smelting Works are situated at Black Rock, N. Y., on the Niagara River. The works include reverberatory and blast furnaces, a 30-ton electrolytic refinery, and two mineral storage houses.

Company maintains three distinct systems of water works, one at the mines in Calumet, one at the mills in Lake Linden, and one on the shore of Lake Superior, 4 miles from Calumet, the latter pumping water for domestic uses. A power line was constructed to the Lake Superior water works in 1908-9, and the company is now sending water from these works to the mill boilers at Torch Lake.

The Hecla & Torch Lake Railroad, owned by the company, connects the mines, mills, shops, and smelter at Torch Lake, by upward of 20 miles of tracks. The dock

system includes a series of coal sheds at Lake Linden, with one of 200,000 tons capacity. There is a series of docks at the mills and smelter on Torch Lake, each wharf having at least 21 feet of clear water alongside. The ship canal connecting Torch Lake with the Government waterways on Portage Lake is owned and operated by the Calumet & Hecla. The canal is 21 feet deep and accommodates the largest vessels plying on the Great Lakes. Tolls on independent cargoes entering Torch Lake through this canal are charged by the company, the charge ranging from 2 cents per ton on soft coal to 50 cents per ton on package freight. The company has saw-mills at the head of Torch Lake. Company owns extensive tracts of pine, hemlock, and hardwood timber along the southern shore of Lake Superior, these lands carrying about 500,000,000 feet of standing timber.

Securities owned, as of Dec. 31, 1912.

	Shares.	
	Number owned.	Number issued.
Ahmeek Mining Co.....	24,200	50,000
Allouez Mining Co.....	41,000	100,000
Centennial Copper Mining Co.....	41,500	90,000
Cliff Mining Co.....	19,400	60,000
Gratiot Mining Co.....	50,100	100,000
Isle Royale Copper Co.....	30,500	150,000
La Salle Copper Co.....	152,977	302,977
Laurium Mining Co.....	37,550	40,000
Osceola Consolidated Mining Co.....	32,750	96,150
Seneca Mining Co.....	11,207	20,000
Superior Copper Co.....	50,100	100,000
Tamarack Mining Co.....	19,400	60,000
White Pine Copper Co., preferred.....	6,092	6,092
White Pine Copper Co., common.....	43,202	85,320

Capital stock.—Authorized and issued, \$2,500,000; par, \$25, of which \$12 per share is paid up, so that the actual cash capital paid in is only \$1,200,000. Stock transferred at company's office, 12 Ashburton Place, Boston. Registrar: American Trust Co., Boston. Listed on Boston Stock Exchange.

Dividends have been paid in recent years as follows: 1896, \$25; 1897, \$40; 1898, \$50; 1899, \$100; 1900, \$70; 1901, \$45; 1902, \$25; 1903, \$35; 1904, \$40; 1905, \$50; 1906, \$70; 1907, \$65; 1908, \$20; 1909, \$27; 1910, \$29; 1911, \$24; 1912, \$42; March, 1913, \$10. Payments quarterly, March 20, at company's office, Boston. Total dividends paid from organization in 1871 to and including March 20, 1913, amounted to \$121,050,000.

Gold notes.—\$4,134,000 4 per cent gold coupon notes; dated February 18, 1909; due February 18, 1919; interest, February and August 18, at Old Colony Trust Co., Boston, trustee, coupon, \$1,000. Callable at par and interest after three years. This is the last of four series of notes issued early in 1909 to finance the purchase from S. A. Bigelow of stocks of various mining companies. The other series were paid March 1, 1912, September 1, 1912, and February 18, 1913, respectively.

Production, etc., years ended Dec. 31.

	Rock treated.		Refined copper produced.			Rock treated.		Refined copper produced.	
	Tons.	Pounds.	Cents.	Cents.		Tons.	Pounds.	Cents.	Cents.
1908.....	2,643,938	82,549,979	9.00	13.62	1911.....	2,909,972	74,130,977	8.52	12.82
1909.....	2,842,880	80,096,995	8.28	13.61	1912.....	2,806,510	67,856,429	9.86	16.65
1910.....	2,795,514	72,059,545	8.96	13.20					

Assets and liabilities.

	Dec. 31, 1912.	Dec. 31, 1911.	Apr. 29, 1911.	Apr. 30, 1910.	Apr. 30, 1909.	Apr. 30, 1908.
<b>ASSETS.</b>						
Cash at mine office.....	\$135,585	\$157,647	\$157,529	\$167,371	\$182,316	\$182,071
Cash at New York office.....	15,000	15,000	15,000	15,000	15,000	15,000
Cash and copper at Boston office.....	6,667,509	7,072,192	5,852,434	6,272,865	6,186,988	4,488,352
Bills receivable.....	953,212	516,293	546,257	708,255	406,001	650,017
Development and equipment fund.....				1,482	5,390	554
Insurance fund.....				983,177	967,920	959,724
Employees' aid fund.....			52,649	29,352	10,192	
Sinking fund.....	1,166,999	1,446,116	463,184	369,204		
Due from other companies.....	943,800	975,000	1,151,800			
Calumet Transportation Co.....	348,511	348,511				
Supplies.....	1,329,810	1,189,690	920,901			
<b>Total assets.....</b>	<b>11,560,426</b>	<b>11,720,449</b>	<b>9,159,754</b>	<b>8,546,706</b>	<b>7,774,107</b>	<b>6,295,720</b>
<b>LIABILITIES.</b>						
Drafts and bills payable.....	\$44,012	457,342	582,898	\$79,408	952,338	1,337,737
Keweenaw Association notes.....						250,000
Employees' aid fund.....						7,017
<b>Total liabilities.....</b>	<b>84,012</b>	<b>457,342</b>	<b>582,898</b>	<b>879,408</b>	<b>952,338</b>	<b>1,594,755</b>
<b>Balance of assets.....</b>	<b>10,716,414</b>	<b>11,263,107</b>	<b>8,576,856</b>	<b>7,667,298</b>	<b>6,821,769</b>	<b>4,700,965</b>

Officers.—Quincy A. Shaw, president; R. L. Agassiz, vice president, Boston; James MacNaughton, second vice president and general manager, Calumet, Mich.; George A. Flagg, secretary and treasurer; W. C. Smith, assistant treasurer, Boston. Directors: F. L. Higginson, Quincy A. Shaw, Walter Hunnewell, Boston; R. L. Agassiz, Newport, R. I.; James MacNaughton, Calumet, Mich.

Annual meeting, second Thursday in June.

General office, 12 Ashburton Place, Boston, Mass.

Mine office, Calumet, Mich.; mill office, Lake Linden, Houghton County, Mich.

COMPANIES CONTROLLED BY CALUMET & HECLA MINING CO.

AHMEEK MINING CO. OF MICHIGAN.

Incorporated in 1880 in Michigan. Property, located on the Kearsage lode, just west of the Mohawk mine, consists of about 920 acres in Kearsage, Keweenaw County, Mich. Development work was begun in 1902 and now includes four shafts, No. 1 being 2,472 feet deep; No. 2, 2,643 feet; No. 3, 2,136 feet; and No. 4, 2,146 feet. Rock is being stamped at the Osceola and Tamarack mills. Stamp mill at Tamarack was completed in March, 1910. The boiler house, containing six boilers, and pump and power house, which has a 40,000,000-gallon pump engine and electric generator, were also completed early in 1910, the boilers, pumps, etc., going into commission May 30, 1910.

Capital stock.—Authorized and outstanding, \$1,250,000; par, \$25; \$17 paid in. The Calumet & Hecla Mining Co. owns 24,200 of the 50,000 shares. Transfer agent: State Street Trust Co., Boston. Registrar: American Trust Co., Boston. Listed on Boston Stock Exchange. Dividends have been paid as follows: November 1, 1911, \$2; 1912, January 20, \$3; April 26, \$4; July 22, \$5; October 10, \$6; 1913: January 10, \$7; April 10, \$7.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	Pounds.	Cents.
1905.....	298,178	6,280,241	12.66
1906.....	406,045	9,198,110	15.48
1910.....	530,365	11,844,954	11.05
1911.....	598,549	15,196,127	7.17
1912.....	652,260	16,455,769	7.85

Income account, years ended Dec. 31.

	Gross income.	Expenses, construction, etc.	Net income.	Real estate purchased.	Interest paid.	Dividends.	Balance.
1908.....	\$857,649	\$795,364	\$62,285	\$84,640	.....	.....	1 \$22,355
1909.....	1,235,007	1,420,874	2 185,867	10,350	\$2,780	.....	1 198,997
1910.....	1,538,003	1,295,616	242,387	.....	13,067	.....	2 229,320
1911.....	1,960,513	1,083,186	877,327	.....	7,054	\$250,000	2 620,272
1912.....	2,757,577	1,292,180	1,465,397	.....	.....	1,100,000	3 365,397

1 Deficit.

2 Loss.

3 Surplus.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston, copper and silver unsold, \$1,759,785; cash and accounts receivable at mine, \$17,914; supplies and fuel at mine, \$123,272; total, \$1,900,972. Liabilities: Accounts payable at Boston, \$37,413; accounts payable at mine, \$134,350; dividend payable, January 10, 1913, \$350,000; total, \$521,763. Balance of assets, \$1,379,209.

Officers.—R. L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissell, assistant secretary and assistant treasurer, Boston; J. MacNaughton, general manager, Calumet, Mich. Directors: F. L. Higginson, Q. A. Shaw, R. L. Agassiz, Thos. N. Perkins, Jas. MacNaughton, W. A. Hodgson, T. L. Chadbourne, jr.

Annual meeting, second Tuesday in June.  
Office, 12 Ashburton Place, Boston.

ALLOUEZ MINING CO.

Incorporated originally in September, 1859; reincorporated in 1889 under laws of Michigan. Owns over 3,400 acres on the mineral range, mostly in Houghton and Keweenaw Counties, Mich., a large tract lying immediately to the north of the Kearsarge branch of the Osceola mine, and carrying the Kearsarge lode. Company owns a one-half interest in the Lake Milling, Smelting & Refining Co. On December 31, 1912, No. 1 shaft was 209 feet below the seventeenth level, a distance of 3,422 feet from the surface, and No. 2 shaft was 173 feet below the twenty-first level, 3,382 feet from the surface. No. 2 shaft began producing in 1910.

Capital stock.—Authorized and outstanding, \$2,500,000; par, \$25; paid in, \$22.25. Registrar: Old Colony Trust Co., Boston. Transfer agent: American Trust Co., Boston. No bonds. The Calumet & Hecla Mining Co. owns 41,000 of the 100,000 shares. Stock traded in on the Boston Stock Exchange.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	Pounds.	Cents.
1908.....	220,905	3,017,051	16.81
1909.....	253,019	4,031,532	13.39
1910.....	217,119	4,655,702	11.57
1911.....	288,610	4,780,491	13.30
1912.....	323,618	5,525,455	13.52

Income account, years ended Dec. 31.

	Total receipts.	Total expenses.	Construction and equipment at mine.	Payment stamp mill, etc.	Construction and real estate.	Interest.	Deficit for year.
1905.....	\$195,427	\$118,714	\$35,517	.....	.....	.....	\$19,143
1909.....	542,764	450,533	75,879	.....	.....	\$13,287	1 3,065
1908.....	406,753	422,509	6,571	.....	\$84,596	.....	22,328
1907.....	557,235	450,861	\$4,846	\$337,741	.....	.....	316,214
1906.....	668,455	394,796	82,630	.....	.....	.....	191,025
1910.....	609,858	521,345	.....	.....	.....	17,417	1 71,096
1911.....	629,229	574,400	42,976	.....	.....	18,232	6,379
1912.....	918,436	641,641	88,184	.....	.....	17,347	1 171,264

1 Surplus.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston and unsold metal, \$486,437; cash and accounts receivable at mine, \$2,367; supplies at mine, \$63,852; total, \$552,656. Liabilities: Notes and accounts payable at Boston, \$402,705; accounts payable at mine, \$56,387; total, \$459,091. Balance of assets, \$93,564.

Officers.—Quincy A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; G. G. Endicott, assistant secretary and assistant treasurer, Boston, Mass.; Jas. MacNaughton, general manager, Calumet, Mich. Directors: Quincy A. Shaw, H. F. Fay, G. A. Flagg, F. L. Higginson, W. L. Frost, Boston; Thos. N. Perkins, Westwood, Mass.; R. L. Agassiz, Newport, R. I.; Jas. MacNaughton, Calumet, Mich.

Annual meeting, second Wednesday in April.  
Office, 12 Ashburton Place, Boston, Mass.

CENTENNIAL COPPER MINING CO.

Incorporated 1896, under laws of Michigan, as successor to Centennial Mining Co. Owns one half of the \$500,000 capital stock of the Lake Milling, Smelting & Refining Co., the other half being owed by the Allouez Mining Co. Property comprises 640 acres, being section 12, township 56, range 33 west; also a triangular patch of about 30 acres bought to secure outcrop of the Kearsarge lode. The present management in 1897 began work on the Osceola lode, but later discontinued in order to open up and develop the Kearsarge lode, which is the only lode now being operated on the property. On December 31, 1912, No. 1 shaft was 189 feet below the thirty-fourth level, 3,821 feet from the surface; No. 2 shaft was 180 feet below the thirty-sixth level, 4,158 feet from the surface.

Capital stock.—Authorized, 100,000 shares; par, \$25; outstanding, 90,000 shares, on which \$19.50 has been paid in. The Calumet & Hecla Mining Co. owns 41,500 shares. Transfer agent: American Trust Co., Boston. Registrar: Old Colony Trust Co., Boston. Listed on Boston Stock Exchange.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	Pounds.	Cents.
1908.....	169,693	2,196,377	18.49
1909.....	196,525	2,583,793	15.61
1910.....	102,133	1,572,566	14.48
1911.....	86,543	1,493,534	12.69
1912.....	106,517	1,742,338	13.46

Income account, years ended Dec. 31.

	Balance, Jan. 1.	Sale of product.	Other receipts.	Total receipts.	Mine and other expenses.	Construction equipment, etc.	Total payments.	Surplus, Dec. 31.
1905..	\$95,951	\$230,130	\$353,982	\$680,062	\$300,384	\$47,899	\$348,283	\$331,780
1906..	331,780	439,516	11,645	782,941	366,965	75,666	442,631	340,310
1907..	340,310	438,253	235,598	1,014,161	469,983	414,193	884,176	129,985
1908..	129,985	294,165	334	424,484	389,952	406,224	796,176	18,260
1909..	18,260	343,051	2,602	363,913	397,360	5,918	403,278	139,365
1910..	139,365	204,778	2,173	167,586	222,281	5,412	227,693	160,107
1911..	160,107	192,997	2,560	195,557	189,512	-----	189,512	15,061
1912..	154,061	285,066	10	285,076	234,563	-----	234,563	13,549

<sup>1</sup> Deficit.

*Assets and liabilities, December 31, 1912.*—Assets: Cash and accounts receivable at Boston and copper unsold, \$183,263; cash and accounts receivable at mine, \$3,121; supplies at mine, \$47,501; total, \$233,886. Liabilities: Notes and accounts payable at Boston, \$209,956; accounts payable at mine, \$27,479; total, \$237,435. Balance of liabilities, December 31, 1912, \$3,549.

*Officers.*—Quincy A. Shaw, president; R. L. Agassiz, vice president; Geo. A. Flagg, secretary and treasurer; Geo. G. Endicott, assistant secretary and assistant treasurer, Boston; Jas. MacNaughton, general manager, Calumet, Mich. Directors: Quincy A. Shaw, R. L. Agassiz, H. F. Fay, Geo. A. Flagg, Jas. MacNaughton, F. L. Higginson.

Annual meeting, first Tuesday in April.

General office, 12 Ashburton Place, Boston; mine office, Calumet, Mich.

CLIFF MINING CO.

Incorporated December, 1909, in Michigan, and acquired the Cliff lands of the Tamarack Mining Co., in Keweenaw County, Mich.; through these lands runs for a distance of about 11,000 feet the Kearsarge lode. The Tamarack Mining Co. conveyed the Cliff lands, retaining, however, the timber thereon, and also placed in the treasury of the new company \$100,000 cash; and received in exchange 60,000 of the authorized 100,000 shares. As of December 31, 1912, the Calumet & Hecla owned 19,400 of the 60,000 outstanding shares of stock.

A temporary shaft was started in August, 1910, and by December 31, 1911, it had reached a depth of 217 feet; no sinking was done in 1912.

*Capital stock.*—Authorized, \$2,500,000; outstanding, \$1,500,000, of which \$780,000 paid in, consisting of 60,000 shares of \$25 each, on which \$13 paid in. Transfer agent: American Trust Co., Boston. Registrar: State Street Trust Co., Boston. Traded in on unlisted department of Boston Stock Exchange.

*Expenses, year ended December 31, 1912.*—Expended in exploration and development work, \$14,796; miscellaneous expenses, \$1,688; total, \$16,484, less balance of interest receipts, \$3,299; balance, \$13,185; add balance of assets, December 31, 1911, \$75,757; balance of assets, December 31, 1912, \$62,572.

*Assets and liabilities, December 31, 1912.*—Assets: Cash and accounts receivable in Boston, \$58,428; cash and accounts receivable at mine, \$4,646; supplies at mine, \$544; total, \$63,618. Liabilities: Accounts payable at mine, \$1,046; balance of assets, December 31, 1912, \$62,572.

*Officers.*—R. L. Agassiz, president; Quincy A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissel, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Rodolphe L. Agassiz, Francis W. Hunnewell, Francis L. Higginson, Quincy A. Shaw, Thomas N. Perkins, George A. Flagg, James MacNaughton.

Annual meeting, first Wednesday in April.

General offices, 12 Ashburton Place, Boston, Mass.

GRATIOT MINING CO.

Incorporated January 29, 1906, in Maine. Company was formed for the purpose of taking over 600 acres of land near the Mohawk mine. Shaft No. 1 had, on December 31, 1911, been sunk to a depth of 1,971 feet and Shaft No. 2 to a depth of 1,521 feet. Owing to the low grade of rock and the condition of the copper market, together with the fact that there were no suitable milling facilities for a reasonably large produc-

tion, the property was closed down on March 31, 1911; no active operations were conducted during 1912.

*Capital stock.*—Authorized and issued, \$300,000; par, \$3. Fully paid and non-assessable. A majority (50,100 shares) is owned by Calumet & Hecla Mining Co.

*Earnings and expenses, year ended December 31, 1912.*—Receipts from sales of machinery, etc., \$8,585; expenses and interest, \$21,555; excess of expenses over receipts, \$12,970; balance of liabilities, December 31, 1911, \$345,541; balance of liabilities, December 31, 1912, \$358,511.

*Assets and liabilities December 31, 1912.*—Assets: Cash at Boston, \$598; cash and accounts receivable at mine, \$8,702; supplies on hand at mine, \$639; total, \$9,939. Liabilities: Accounts payable at Boston, \$368,300; accounts payable at mine, \$149; total, \$368,449; balance of liabilities, \$358,511.

*Officers.*—Quincy A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer, Boston, Mass.; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, F. L. Higginson, Boston, Mass.; R. L. Agassiz, Newport, R. I.; J. MacNaughton, Calumet, Mich.; G. A. Flagg, Holliston, Mass.

Annual meeting, first Thursday after third Wednesday in August, at Portland, Me. Office, 12 Ashburton Place, Boston; mine office, Calumet, Mich.

ISLE ROYALE COPPER CO.

Incorporated March 14, 1899, in New Jersey, as a consolidation of the Isle Royale Consolidated Mining Co. and the Miners' Copper Co. The present company began operations on April 20, 1899, with all the property and cash assets of the old Isle Royale Consolidated Mining Co., increased by 1,400 acres of new mining property and \$1,000,000 in cash from the Miners' Copper Co. In all the company owns about 2,800 acres of valuable copper mining land in Houghton County, Mich. In 1907 purchased for \$220,000 the Hussey Howe tract of 240 acres adjoining and northeast of the Superior property, controlled by Calumet & Hecla. This tract is surrounded by Isle Royale lands, and is supposed to carry the Baltic lode. Development work on the properties was begun in August, 1896. On December 31, 1912, No. 2 shaft was 84 feet below twenty-ninth level and 3,162 feet from surface, No. 4 was 5.5 feet below fifteenth level and 1,939 feet from surface, No. 5 was 47.5 feet below ninth level and 1,206 feet from surface, No. 6 was 4.5 feet below thirteenth level and 1,553 feet from surface, "A" shaft was 18 feet below fifth level and 972 feet from surface. In September, 1912, ground was broken for No. 7 shaft.

The Isle Royale Railroad, owned by the company, connects the mine and mill with about 5 miles of main line and has a junction with the Duluth, South Shore & Atlantic Railway. Equipment includes three locomotives and forty 40-ton steel rock cars. The stamp mill is situated at the mouth of Pilgrim River, the mill site having nearly 1 mile of frontage on Portage Lake. The mill has three heads, each with recrushing rolls, the single head having a daily capacity of 500 tons, and the two compound heads a daily capacity of 750 tons each. Power for the mill is furnished by a 750-horsepower engine, taking steam from four 250-horsepower boilers in a 46 by 72 feet boiler house at the rear of the mill. There is a 32 by 600 feet wharf, with deep water, at the mill site. Water is furnished the mill by a 16,000,000-gallon pump discharging into a 32-foot steel water main running 2,200 feet from pump house to mill. Three 100-horsepower boilers furnish pumping power.

*Capital stock.*—Authorized and outstanding, \$3,750,000; par \$25. Transfer agent: Old Colony Trust Co., Boston, Mass. Registrar: State Street Trust Co., Boston, Mass. No bonds. The Calumet & Hecla Mining Co. owns \$762,500 of the stock. Initial dividend of \$1 per share paid March 31, 1913.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	Pounds.	Cents.
1908.....	218,940	3,011,664	28.99
1909.....	401,280	5,719,056	16.64
1910.....	520,860	7,567,399	11.84
1911.....	457,440	7,490,120	10.85
1912.....	531,105	8,186,957	11.89

Income account, years ended Dec. 31.

	Gross receipts.	Expenses, etc.	Net profits.
1906.....	\$588,340	\$431,372	\$156,968
1907.....	492,224	763,650	1,271,435
1908.....	427,364	878,575	1,451,211
1909.....	790,528	951,519	1,169,991
1910.....	988,233	895,920	92,313
1911.....	969,365	812,657	156,708
1912.....	1,395,637	975,870	419,767

Deficit.

*Assets and liabilities, December 31, 1912.*—Assets: Cash, accounts receivable at Boston, copper and silver unsold, \$587,564; cash and accounts receivable at mine, \$13,708; supplies and fuel at mine, \$103,385; Lake Superior Smelting Co. stock, \$32,000; total, \$736,657. Liabilities: Notes and accounts payable at Boston, \$72,914; accounts payable at mine, \$106,000; total, \$178,914. Balance of assets, December 31, 1912, \$557,743.

*Officers.*—Rodolphe L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; Clarence H. Bissell, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, R. L. Agassiz, C. N. King, F. L. Higginson, W. E. L. Dillaway, C. O. Whitten, F. L. Whitcomb.

Annual meeting, first Wednesday in April at Jersey City, N. J.  
Office, 12 Ashburton Place, Boston, Mass.

## LA SALLE COPPER CO.

Incorporated December, 1906, in Michigan, to take over control of the properties of Tecumseh Copper Co., the La Salle and Caldwell companies (under option to Calumet & Hecla), and certain lands contributed by the Calumet & Hecla and the Sheldon estate. The charter of the Tecumseh Copper Co. expired on February 3, 1910, and on May 11, 1910, the La Salle Copper Co. purchased the entire property of that company. Prior to this purchase La Salle owned all but 159 shares of the Tecumseh stock. The properties comprise the Douglas and Sheldon estates, 400 acres; La Salle (association), 840 acres; Tecumseh, 560 acres; Caldwell, 560 acres; total, 2,460 acres. The company's present mineral expectations are confined to the Kearsarge lode, which has been demonstrated both by diamond drill and by shafts. The policy is to concentrate work in developing the properties and in blocking out ore. On December 31, 1912, No. 1 shaft was 38 feet below twentieth level and 2,146 feet from surface, No. 2 was 49 feet below seventeenth level and 1,770 feet from surface, No. 5 was 128 feet below tenth level and 1,450 feet from surface, and No. 6 was 7 feet below seventh level and 882 feet from surface. Refined copper produced in 1910, 633,778 pounds; in 1911, 280,598 pounds; no production in 1912. With the higher prices for copper obtaining, it was planned to resume operations in June, 1912, but it was impossible to secure a sufficient working force until November.

*Capital stock.*—Authorized, \$10,000,000; outstanding, \$7,574,425; par, \$25. The Calumet & Hecla Co. contributed \$1,000,000 cash to the treasury and agreed to loan the company \$750,000 additional if necessary in return for which, and its contribution of 240 acres to the property, it received 161,750 shares of the 302,977 shares issued. As of December 31, 1912, Calumet & Hecla Mining Co. owned 152,977 shares of the stock. Transfer agent: Old Colony Trust Co., Boston. Registrar: State Street Trust Co., Boston. Listed on Boston Stock Exchange.

*Receipts and expenses, year ended December 31, 1912.*—Interest and miscellaneous receipts, \$10,244; expenses at mine, \$19,998; expenses at eastern office, etc., \$6,434; construction at mine, \$4,037; deficit, \$21,124.

*Assets and liabilities, December 31, 1912.*—Assets: Cash and accounts receivable at mine, \$6,085; cash and accounts receivable at Boston, \$239,400; supplies on hand, \$646; total, \$246,131. Liabilities: Accounts payable at mine, \$5,472. Balance of assets, December 31, 1912, \$240,660.

*Officers.*—Q. A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; W. C. Smith, assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, F. L. Higginson, Walter

Hunnewell, Boston; R. L. Agassiz, Newport, R. I.; G. A. Flagg, Houghton, Mass.; James MacNaughton, Calumet, Mich.; T. N. Perkins, Westwood, Mass.

Annual meeting, second Wednesday in June.

Office, 12 Ashburton Place, Boston, Mass.; mine office, Calumet, Mich.

## LAURIUM MINING CO.

Incorporated in Michigan. Lands comprise 325 acres of surface rights, with mineral rights to 575 acres, lying east of Calumet & Hecla Mine. On December 31, 1912, shaft No. 1 was 32 feet below fourteenth level and 1,444 feet from the surface. A new hoist, capable of working to a depth of 2,100 feet, and a larger compressor have been installed in place of the old equipment.

*Capital stock.*—Authorized and issued, \$1,000,000; par, \$25. The Calumet & Hecla Mining Co. owns \$938,750 of the stock.

*Receipts and expenses, year ended December 31, 1912.*—Interest received, \$1,843; expenses at mine, \$44,507; eastern office, \$1,722; construction at mine, \$5,681; excess of expenses, \$50,067.

*Assets and liabilities, December 31, 1912.*—Cash, accounts receivable, and supplies, \$22,187; accounts payable, \$3,722. Balance of assets, \$18,465.

*Officers.*—Q. A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; G. G. Endicott, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, F. L. Higginson, G. A. Flagg, Boston; R. L. Agassiz, Newport, R. I.; James MacNaughton, Calumet, Mich.

Annual meeting, second Tuesday in June.

General office, 12 Ashburton Place, Boston, Mass.; mine office, Houghton, Mich.

## OSCEOLA CONSOLIDATED MINING CO.

Incorporated in 1873, in Michigan, to acquire a copper mining property at Hancock, Houghton County, Mich., bordering on the famous Calumet & Hecla mines. Company was consolidated with the Opechee Mining Co. in 1879, and in 1897 purchased the Kearsarge Mining Co., this purchase carrying with it the control of the Iroquois Copper Co. and the Tamarack Junior Mining Co. Over 35 miles of underground work has been done. Lands, 2,120 acres, in four separate tracts; also an extensive mill site in Houghton County, Mich., and considerable holdings of timber and miscellaneous lands in Houghton and Keweenaw Counties, Mich. Property includes four mines, or "branches," known as the Osceola, North Kearsarge, South Kearsarge, and Tamarack Junior; the latter being idle.

The two stamp mills, completed in 1899 and 1902, respectively, adjoin those of the Tamarack, on the shore of Torch Lake. The original mill, built in 1886, was torn down in 1905. The boiler house, adjoining the mills and furnishing power for both, has three 250-horsepower boilers, delivering steam at 150 pounds pressure, and nine 250-horsepower boilers, operated under 105 pounds pressure. Rock is transported from the various mines to the mills by the Hancock & Calumet Railroad, a branch of the Duluth, South Shore & Atlantic Railway.

During 1912 all the real and personal property of the Hancock Chemical Co. and the Tamarack-Osceola Copper Manufacturing Co. was sold and the Osceola Consolidated Mining Co. received net for its stock holdings \$46,667.

Total depth of shafts, December 31, 1912: Osceola branch—No. 5, 110 feet below forty-sixth level, 4,623 feet from surface; No. 6, 99 feet below forty-sixth level, 4,592 feet from surface. South Kearsarge branch—No. 1, 20 feet below twenty-third level, 2,820 feet from surface; No. 2, 22 feet below sixteenth level, 1,992 feet from surface. North Kearsarge branch—No. 1, 190 feet below thirty-fourth level, 3,873 feet from surface; No. 3, 161 feet below thirty-first level, 3,251 feet from surface; No. 4, 187 feet below fifteenth level, 1,449 feet from surface.

*Capital stock.*—Authorized, \$2,500,000; outstanding, \$2,403,750; the balance, \$96,250, being held in the company's treasury; par, \$25. Transfer agent: American Trust Co., Boston. Registrar: State Street Trust Co., Boston. The Calumet & Hecla Mining Co. owns 32,750 shares of the 96,150 shares of stock outstanding. Dividends in 1899, 1900, and 1901, \$6 per share each; 1902 and 1903, none; 1904, \$2 per share; 1905, \$4; 1906, \$10; 1907, \$13; 1908, \$2; 1909, \$8; 1910, \$10; 1911, \$7.50; 1912, \$12.50; January 31, 1913, \$3; payments semiannually, January and July. Total dividends paid from 1878 to and including January 31, 1913, \$11,176,100. Listed on Boston Stock Exchange.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost of refined copper per pound.
	Tons.	Pounds.	Cents.
1908.....	1,241,400	21,250,794	10.25
1909.....	1,494,845	25,296,657	9.47
1910.....	1,217,720	19,346,566	9.37
1911.....	1,246,596	18,388,193	9.28
1912.....	1,246,557	18,413,387	10.36

Earnings, expenses, and income account, year ended Dec. 31.

	Gross earnings.	Operating expenses.	Net earnings.	Construction.	Dividends.	Surplus for year.	Previous surplus.	Total surplus.
1905..	\$2,961,971	\$1,815,119	\$1,146,251	\$207,505	\$576,900	\$361,846	\$505,929	\$867,775
1906..	3,646,811	1,868,140	1,778,671	155,482	1,153,800	469,389	867,775	1,337,164
1907..	2,481,306	1,674,177	807,129	84,374	673,050	49,705	1,337,164	1,386,869
1908..	2,914,544	2,091,823	822,721	145,615	576,900	100,205	1,386,869	1,487,074
1909..	3,465,857	2,285,401	1,180,456	109,810	961,500	109,146	1,487,074	1,596,219
1910..	2,571,865	1,746,340	825,525	66,939	769,200	10,614	1,851,220	1,840,606
1911..	2,371,373	1,615,780	755,593	90,965	673,050	8,422	1,840,606	1,832,183
1912..	3,118,604	1,734,199	1,384,405	174,331	1,153,800	56,274	1,832,184	1,888,458

<sup>1</sup> Deficit.

Assets and liabilities, Dec. 31.

Assets.	1912		1911		Liabilities.	1912		1911	
Cash accounts receivable at Boston and unsold metal.....	\$1,775,509	\$1,740,832			Accounts payable at mines.....	\$265,543	\$243,635		
Cash and accounts receivable at mines.....	12,740	15,527			Accounts payable at Boston.....	34,270	22,311		
Supplies and fuel.....	250,063	239,886			Dividends payable in January.....	288,450	336,525		
Wood and timber lands.....	37,309	37,309			Surplus.....	1,888,458	1,832,184		
Mineral Range Railroad stock.....	341,100	341,100							
Lake Superior Smelting Co. stock.....	60,000	60,000							
Total.....	2,476,721	2,434,654			Total.....	2,476,721	2,434,654		

Officers.—R. L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissell, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: F. L. Higginson, Q. A. Shaw, R. L. Agassiz, James MacNaughton, William H. Dwelly, jr., Guy W. Currier, Thomas N. Perkins.

Annual meeting, second Thursday in March.  
Office, 12 Ashburton Place, Boston, Mass.

SENECA MINING CO.

Incorporated March 23, 1860, in Michigan. Lands, originally 3,240 acres, were reduced by 1,880 acres, transferred to the Ahmeek Co. The remaining tract is located just north of the Mohawk and Ahmeek mines, and carries the Calumet, Kearsarge, and Allouez conglomerates, and the Osceola and Kearsarge amygdaloidal beds. No development work was done during 1912.

Capital stock.—Authorized and issued, \$500,000; paid in, \$201,000; par, \$25, of which \$10.05 is paid in. The Calumet & Hecla Mining Co. owns 11,207 shares of the stock.

Expenditures, year ended December 31, 1912.—Mine expenses, \$2,032; mine taxes, \$657; eastern expenses, \$1,844; interest, \$5,675; total, \$10,208.

Assets and liabilities, December 31, 1912.—Assets: Cash at Boston, etc., \$876; supplies at mine, \$1,021; total, \$1,897. Liabilities: Notes and accounts payable at Boston, \$140,721; accounts payable at mine, \$3,496; total, \$144,216. Balance of liabilities, December 31, 1912, \$142,319.

Officers.—R. L. Agassiz, president; G. A. Flagg, secretary and treasurer; A. Garceau, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: R. L. Agassiz, Newport, R. I.; G. A. Flagg, Holliston, Mass.; F. L. Higginson, Boston; James MacNaughton, Calumet, Mich.; T. L. Chadbourne, jr., New York.

Annual meeting, fourth Monday in March.

General office, 12 Ashburton Place, Boston, Mass.; mine office, Ahmeek, Mich.

SUPERIOR COPPER CO.

Incorporated July 22, 1904, in Michigan. Lands, 450 acres, between the Baltic and Isle Royale mines. Company has a two-year lease on two tracts of the Atlantic mill, giving a stamping capacity of about 700 tons daily. In order to ship rock to the Lake Milling Co.'s stamp mill at Point Mills, a line of railroad has been built to connect No. 1 shaft with the Isle Royale Railroad. On December 31, 1912, shaft No. 1 was 254 feet below 18th level and 2,014 feet from surface; No. 2 shaft was 41 feet below 14th level and 1,341 feet from surface.

Capital stock.—Authorized and issued \$2,500,000; par, \$25. The Calumet & Hecla Mining Co. owns \$1,252,500 of the stock. Transfer agent: American Trust Co., Boston. Registrar: Old Colony Trust Co., Boston.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	Pounds.	Cents.
1908.....	962	21,244	(1)
1909.....	81,641	1,789,315	(1)
1910.....	140,514	3,181,041	14.29
1911.....	162,590	3,236,233	15.31
1912.....	172,322	3,921,974	12.75

<sup>1</sup> Not reported.

Income account, years ended Dec. 31.

	Gross value of fine copper.	Silver sales and miscellaneous.	Total.	Expenses.	Construction.	Interest.	Balance.
1911.....	\$411,267	\$19,617	\$430,884	\$453,972	\$28,901	\$12,527	<sup>1</sup> \$65,516
1912.....	646,771	26,261	673,032	478,395	12,165	9,599	<sup>2</sup> 172,873

<sup>1</sup> Deficit.

<sup>2</sup> Surplus.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston and copper and silver unsold, \$290,868; cash and accounts receivable at mine, \$10,188; supplies, \$8,505; total, \$309,561. Liabilities: Accounts payable at Boston, \$184,565; accounts payable at mine, \$25,212; total, \$209,777. Balance of assets, December 31, 1912, \$99,784.

Officers.—Q. A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; A. J. Garceau, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, Boston; R. L. Agassiz, Newport, R. I.; James MacNaughton, Calumet, Mich.; G. A. Flagg, Holliston, Mass.; F. L. Higginson, Boston.

Annual meeting, second Tuesday in June.

General office, 12 Ashburton Place, Boston; mine office, Calumet, Mich.

## TAMARACK MINING CO.

Incorporated in 1882 in Michigan. Company owns over 1,110 acres in Keweenaw County, Mich., with about 7,000 additional acres of timber and other lands. The mine adjoins the Calumet & Hecla on all sides. It has been operated for a great many years and extensive development work has been done. The mine is opened by five shafts. The No. 1 shaft is 109 feet below the nineteenth level and 3,409 feet from the surface; No. 2 shaft is 23 feet below the thirtieth level and 4,355 feet from the surface; No. 3 shaft is 29.5 feet below the eighteenth level and 5,253 feet from the surface; No. 3 shaft (inclined) is 113 feet below the twenty-first level and 406 feet below the eighteenth level; No. 4 shaft is 4,450 feet from the surface; and No. 5 shaft is 147 feet below the fortieth level and 5,308.5 feet from the surface.

Company has two stamp mills on Torch Lake, with a combined daily capacity of 3,500 tons of conglomerate rock. Mill No. 1 has five heads, three of which are compounded; the boiler house has four 200-horsepower boilers. Mill No. 2 has two stamps, and the boiler house has seven 200-horsepower boilers. The pump house, owned jointly with the Osceola Co., has two 40,000,000-gallon pumps and one 15,000,000 gallon pump.

Late in 1909 the Tamarack Co. sold its Cliff lands to the Cliff Mining Co. on terms shown in Manual for 1912, page 3960.

During 1912 all the real and personal property of the Hancock Chemical Co. and the Tamarack-Osceola Copper Manufacturing Co. was sold, and the Tamarack Mining Co. received net for its stock holdings \$14,332.

## Production, etc., years ended Dec. 31.

	Stock treated.	Refined copper produced.	Total cost per pound of refined copper.
			Cents.
	Tons.	Pounds.	
1908.....	54.897	12,806,127	15.24
1909.....	80.099	13,533,207	14.30
1910.....	525.554	11,063,606	14.70
1911.....	392.338	7,491,077	15.56
1912.....	421.385	7,908,745	13.15

## Income account, years ended Dec. 31.

	Total receipts.	Total expenses.	Gross profit.	Dividends.	New construction.	Balance.
1906.....	\$1,917,232	\$1,413,084	\$504,148	\$300,000	\$90,518	\$113,630
1907.....	1,835,970	1,751,835	84,135	240,000	93,410	249,277
1908.....	1,716,974	1,870,191	153,217		82,389	235,606
1909.....	1,906,878	1,890,810	16,068		44,613	28,546
1910.....	2,230,017	1,563,717	666,300		62,667	603,633
1911.....	957,916	1,146,876	188,960		4,239	193,199
1912.....	1,309,807	1,040,194	269,613			269,613

<sup>1</sup> Surplus.

<sup>2</sup> 20 per cent.

<sup>3</sup> 16 per cent.

<sup>4</sup> Deficit.

<sup>5</sup> Includes \$49,538 for cliff exploration.

<sup>6</sup> Includes \$770,315 received from sale of cliff lands, timberlands, and other income, and \$25,000 Lake Superior Smelting Co. dividend.

Capital stock.—Authorized and issued, \$1,500,000; par, \$25. Transfer agent: Old Colony Trust Co., Boston. Registrar: State Street Trust Co., Boston. Total dividends paid to and including July, 1907, \$9,420,000; none since. The Calumet & Hecla Mining Co. owns \$485,000 of the stock. Listed on Boston Stock Exchange.

## Assets and liabilities, Dec. 31.

Assets.	1912	1911	Liabilities.	1912	1911
Cash and accounts receivable and copper unsold.....	\$541,289	\$491,748	Notes and accounts payable.....	\$379,290	\$610,914
Supplies and fuel at mine.....	210,567	231,919	Surplus.....	1,120,862	851,249
Wood and timber lands.....	184,596	171,766			
Hancock and Calumet bonds.....	99,000	99,000			
Mineral Range railroad stock.....	364,700	364,700			
Lake Superior Smelting Co. stock.....	100,000	100,000			
Total.....	1,500,152	1,462,163	Total.....	1,500,152	1,462,163

Officers.—R. L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissell, assistant secretary and assistant treasurer, Boston; Jas. MacNaughton, general manager, Calumet, Mich.; Directors: R. L. Agassiz, Q. A. Shaw, Jas. MacNaughton, F. L. Higginson, F. L. Whitcomb, R. S. Bradley, Edwin C. Lewis.

Annual meeting, first Wednesday in April.

Office, 12 Ashburton Place, Boston, Mass.

## WHITE PINE COPPER CO.

Incorporated in 1909, in Michigan, to develop 4,739<sup>8</sup>/<sub>16</sub> acres of lands which carry the Nonesuch lode, conveyed to the company by the Keweenaw Association and others. The Calumet & Hecla Mining Co., having expended \$100,000 on the property, received 43,202 shares of White Pine common stock, and in return for further sums advanced for development and equipment is entitled to receive preferred stock at par. Up to December 31, 1912, the Calumet & Hecla Co. had received 6,092 shares of preferred stock, being the entire amount issued. On December 31, 1912, No. 1 temporary shaft was 67 feet below the first level and 213 feet from the surface; No. 2 temporary shaft was 4 feet below the first level and 135 feet from the surface.

Capital stock.—Authorized, \$3,750,000 common and \$1,250,000 5 per cent cumulative preferred; outstanding, December 31, 1912, \$2,133,000 common and \$152,300 preferred; par \$25. The Calumet & Hecla Mining Co. owns \$1,080,050 common and all the preferred. The preferred stock is issued from time to time to provide funds for development, etc., and is to be retired out of earnings before dividends are paid on the common.

Receipts and expenses, year ended December 31, 1912.—Sales of 2,221 shares of preferred stock at par, \$55,525; interest, \$2; total, \$55,527. Deduct: Running expenses at mine, \$48,159; construction at mine, \$8,504; taxes, \$1,000; eastern office, \$1,037; timber purchased, \$321; total, \$59,021. Excess of expenses, \$3,494.

Assets and liabilities, December 31, 1912.—Assets: Cash, \$684; supplies at mine, \$2,413; total, \$3,097. Liabilities: Accounts payable at Boston, \$15,400; accounts payable at mine, \$4,398; total, \$19,798. Balance of liabilities, December 31, 1912, \$16,701.

Officers.—A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; G. G. Endicott, assistant treasurer, Boston; Jas. MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, R. L. Agassiz, D. S. Dean, F. L. Higginson, F. W. Hunnewell, G. A. Flagg, Jas. MacNaughton.

Annual meeting, first Tuesday in April.

General office, 12 Ashburton Place, Boston.

## COPPER RANGE CONSOLIDATED CO.

Incorporated December 2, 1901, under laws of New Jersey, as a securities holding corporation. The company's assets consist principally of securities owned in subsidiary companies, through which the Copper Range Consolidated Co. is the second largest copper producer of the Lake Superior district. Its production includes the total output of the Baltic and Trimountain mines and one-half the output of the Champion mine, the other one-half belonging to the St. Mary's Mineral Land Co., which is the joint owner, with the Copper Range Consolidated Co., of the shares of the Champion Copper Co. The company owns and controls all the stock of the Copper Range Railroad Co. Company owned as of January 1, 1913, 99,659 of the 100,000