GEOLOGICAL MAP OF MICHIGAN

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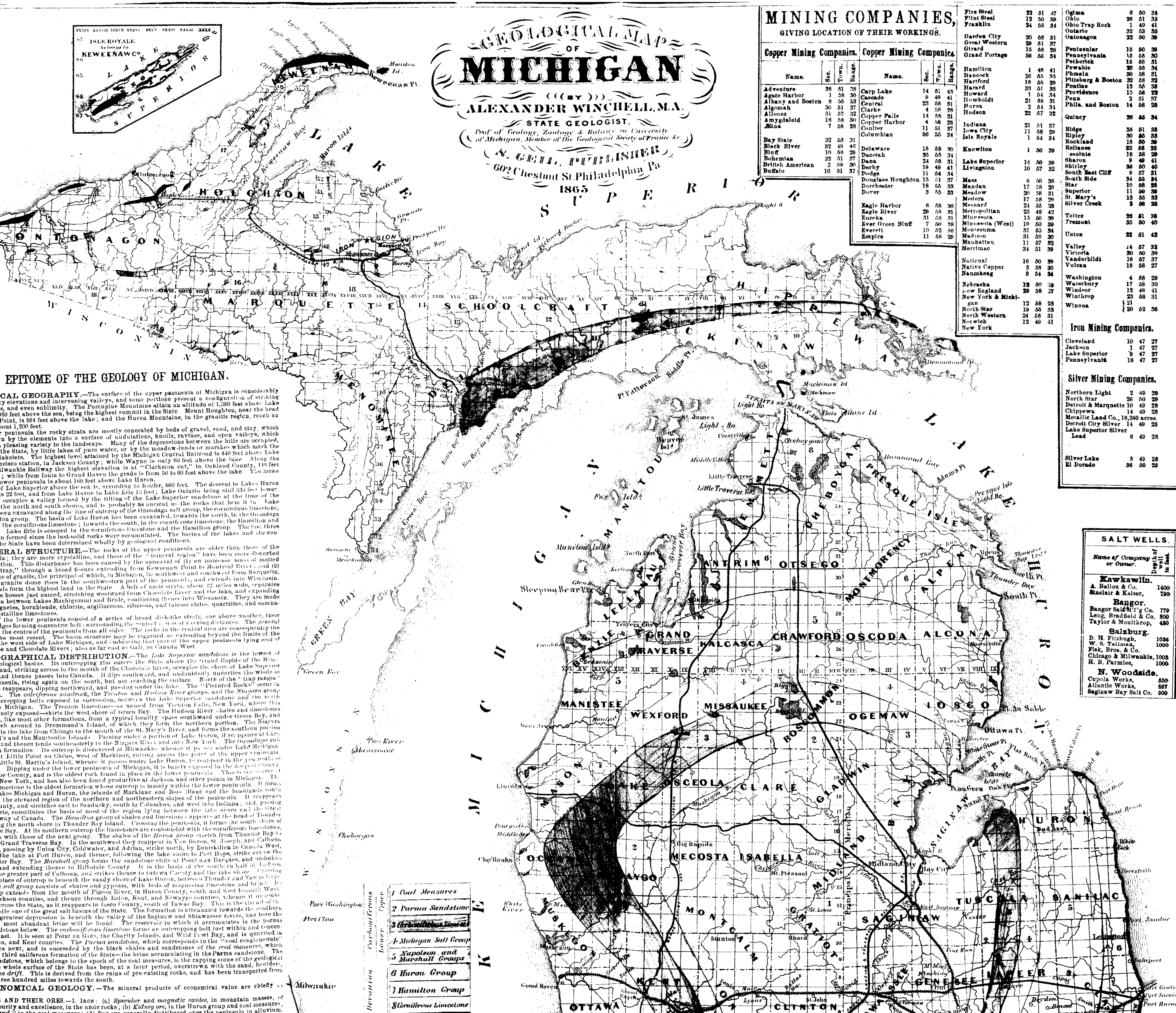

EPITOME OF THE GEOLOGY OF MICHIGAN.

I. PHYSICAL GEOGRAPHY.—The surface of the upper peninsula of Michigan is considerably broken by rocky elevations and intervening valleys, and some portions present a configuration of striking picturesqueness, and even sublimity. The Porcupine Mountains attain an altitude of 1,380 feet above Lake Superior, or 1,980 feet above the sea, being the highest summit in the State. Mount Houghton, near the head of Keweenaw Point, is 884 feet above the lake; and the Huron Mountains, in the granitic region, reach an elevation of about 1,200 feet.

In the lower peninsula the rocky strata are mostly concealed by beds of gravel, sand, and clay, which have been worn by the elements into a surface of undulations, knolls, ravines, and open valleys, which communicate a pleasing variety to the landscape. Many of the depressions between the hills are occupied, in all parts of the State, by little lakes of pure water, or by the meadow-lands or marshes which mark the site of former lakelets. The highest level attained by the Michigan Central Railroad is 440 feet above Lake Huron, at Francisco station, in Jackson County; while Wayne is only 80 feet above the lake. Along the Detroit and Milwaukie Railway the highest elevation is at "Clarkston cut," in Oakland County, 410 feet above the lake; while from Ionia to Grand Haven the grade is from 50 to 60 feet above the lake. The mean height of the lower peninsula is about 160 feet above Lake Huron.

The height of Lake Superior above the sea is, according to Keefer, 600 feet. The descent to Lakes Huron and Michigan is 22 feet, and from Lake Huron to Lake Erie 13 feet; Lake Ontario being still 333 feet lower. Lake Superior occupies a valley formed by the tilting of the Lake Superior sandstone at the time of the upheavals on the north and south shores, and is probably as ancient as the rocks that hem it in. Lake Michigan has been excavated along the line of outcrop of the Onondaga salt group, the corniferous limestone, and the Hamilton group. The basin of Lake Huron has been excavated, towards the north, in the Onondaga salt group and the corniferous limestone; towards the south, in the corniferous limestone, the Hamilton and Huron groups. Lake Erie is scooped in the corniferous limestone and the Hamilton group. The last three lakes have been formed since the last solid rocks were accumulated. The basins of the lakes and the configuration of the State have been determined wholly by geological conditions.

II. GENERAL STRUCTURE.—The rocks of the upper peninsula are older than those of the lower peninsula; they are more crystalline, and those of the "mineral region" have been more disturbed by volcanic action. This disturbance has been caused by the upheaval of (1) an immense mass of melted rock, called "trap," through a broad fissure extending from Keweenaw Point to Montreal River; and (2) immense bosses of granite, the principal of which, in Michigan, lie northwest and southwest from Marquette, while another granite dome rises in the southwestern part of the peninsula, and extends into Wisconsin. These upheavals form the highest land in the State. A belt of azoic strata, about 12 miles wide, separates the two granite bosses just named, stretching westward from Chocolate River and the lake, and expanding into a vast area between Lakes Machigummi and Brulé, continuing thence into Wisconsin. They are made up of beds of gneiss, hornblende, chlorite, argillaceous, silicious, and talcose slates, quartzites, and saccharoidal and crystalline limestones.

The rocks of the lower peninsula consist of a series of broad dish-like strata, one above another, their outcropping edges forming concentric belts surrounding the central region at varying distances. The general dip is towards the centre of the peninsula from all sides. The rocks in the central area are consequently the highest and the most recent. The basin structure may be regarded as extending beyond the limits of the peninsula, to the west side of Lake Michigan, and embracing that part of the upper peninsula lying east of the Menomonee and Chocolate Rivers; also as far east as Galt, in Canada West.

III. GEOGRAPHICAL DISTRIBUTION.—The *Lake Superior sandstone* is the lowest of this pile of geological basins. Its outcropping rim enters the State above the Grand Rapids of the Menomonee River, and, striking across to the mouth of the Chocolate River, occupies the shore of Lake Superior to the Sault, and thence passes into Canada. It dips southward, and undoubtedly underlies the whole of the lower peninsula, rising again on the south, but not reaching the surface. North of the "trap ranges" this sandstone reappears, dipping northward, and passing under the lake. The "Pictured Rocks" occur in this formation. The *calciferous sandrock*, the *Trenton* and *Hudson River* groups, and the *Niagara* group have their outcropping belts exposed in succession, between the Lake Superior sandstone and the north shore of Lake Michigan. The Trenton limestone—so named from Trenton Falls, New York, where this formation is finely exposed—skirts the west shore of Green Bay. The Hudson River shales and limestones—named, also, like most other formations, from a typical locality—pass southward under Green Bay, and northward arch around to Drummond's Island, of which they form the northern portion. The Niagara limestone skirts the lake from Chicago to the mouth of the St. Mary's River, and forms the southern portion of Drummond's and the Manitoulin Islands. Passing under a portion of Lake Huron, it reappears at Cape Hurd (C. W.), and thence tends southeasterly to the Niagara River and into New York. The *Onondaga salt* group is a thin formation. Its outcrop is discovered at Milwaukie, whence it passes under Lake Michigan, reappearing at Little Point au Chêne, west of Mackinac, cutting across the point of the upper peninsula, and forming Little St. Martin's Island, whence it passes under Lake Huron, to reappear in the peninsula of Canada West. Dipping under the lower peninsula of Michigan, it is barely exposed in the deepest excavations of Monroe County, and is the oldest rock found in place in the lower peninsula. This is the source of the brines of New York, and has also been found productive at Jackson and other points in Michigan. The *corniferous* limestone is the oldest formation whose outcrop is mainly within the lower peninsula. It forms the beds of Lakes Michigan and Huron, the islands of Mackinac and Bois Blanc and the headlands south and west, and the elevated region of the northern and northeastern slopes of the peninsula. It reappears in Monroe County, and stretches east to Sandusky, south to Columbus, and west into Indiana; and, passing under Lake Erie, constitutes the basis of most of the region lying between the lake shore and the Great Western Railway of Canada. The *Hamilton* group of shales and limestones appears at the head of Thunder Bay, and along the north shore to Thunder Bay Island. Crossing the peninsula, it forms the south shore of Little Traverse Bay. At its southern outcrop the limestones are confounded with the corniferous limestones, and the shales with those of the next group. The shales of the *Huron* group stretch from Thunder Bay to the mouth of Grand Traverse Bay. In the southwest they reappear in Van Buren, St. Joseph, and Calhoun counties, and, passing by Union City, Coldwater, and Adrian, strike north, by Enniskillen in Canada West, to the bed of the lake at Port Huron, and thence, following the lake shore to Port Hope, strike across the lake to Thunder Bay. The *Marshall* group forms the sandstone cliffs at Point aux Barques, and underlies the ridge of land extending thence to Hillsdale County. It is the basis of the southern half of Jackson County and the greater part of Calhoun, and strikes thence to Ottawa County and the lake shore. Crossing the State, its place of outcrop is beneath the sandy shore of Lake Huron, between Thunder and Tawas Bays. The *Michigan salt* group consists of shales and gypsum, with beds of magnesian limestone and brine. Its belt of outcrop extends from the mouth of Pigeon River, in Huron County, south and west beneath Washtenaw and Jackson counties, and thence through Eaton, Kent, and Newaygo counties, whence it undoubtedly arches across the State, as it reappears in Iosco County, south of Tawas Bay. This is the circuit of the second or middle one of the great salt basins of the State. The formation is attenuated towards the southern outcrop. Its greatest depression is beneath the valley of the Saginaw and Shiawassee rivers, and here the strongest and most abundant brine will be found. The reservoir in which it accumulates is the porous *Napoleon* sandstone below. The *carboniferous limestone* forms an outcropping belt just within and concentric with the last. It is seen at Point au Gres, the Charity Islands, and Wild Fowl Bay, and is quarried in Jackson, Eaton, and Kent counties. The *Parma sandstone*, which corresponds to the "coal conglomerate" of Ohio, comes next, and is succeeded by the black shales and sandstones of the *coal measures*, which constitute the third saliferous formation of the State—the brine accumulating in the Parma sandstone. The *Woodville sandstone*, which belongs to the epoch of the coal measures, is the capping stone of the geological column. The whole surface of the State has been, at a later period, overstrewn with the sand, boulders, and clay of the *drift*. This is derived from the ruins of pre-existing rocks, and has been transported from one mile to three hundred miles towards the south.

IV. ECONOMICAL GEOLOGY.—The mineral products of economical value are chiefly as follows:—

I. METALS AND THEIR ORES.—1. IRON: (a) *Specular* and *magnetic oxides*, in mountain masses, of unsurpassed purity and excellence, in the azoic rocks; (b) *Kidney ore*, in the Huron group and coal measures; (c) "*Black Band*," in the coal measures; (d) *Bog ore*, generally distributed over the peninsula in alluvium.

MINING COMPANIES,

GIVING LOCATION OF THEIR WORKINGS.

Copper Mining Companies.

Name.	Sec.	Town.	Range.
Adventure	36	51	38
Agate Harbor	1	58	30
Albany and Boston	8	55	53
Algomah	30	51	37
Allouez	31	57	32
Amygdaloid	16	58	30
Ætna	7	58	28
Bay State	32	53	31
Black River	32	49	46
Bluff	10	58	29
Bohemian	33	51	37
British American	2	58	30
Buffalo	10	51	37

Copper Mining Companies.

Name.	Sec.	Town.	Range.
Carp Lake	14	51	43
Cascade	9	49	41
Central	23	58	31
Clarke	4	58	28
Copper Falls	14	58	31
Copper Harbor	4	58	28
Coulter	11	51	37
Columbian	36	55	34
Delaware	15	58	30
Dacotah	35	55	34
Dana	24	58	31
Derby	19	49	41
Dodge	11	54	34
Douglass Houghton	15	51	37
Dorchester	18	55	33
Dover	3	55	33
Eagle Harbor	6	58	30
Eagle River	29	58	31
Eureka	31	58	31
Ever Green Bluff	7	50	38
Everett	10	52	36
Empire	11	58	29
Fire Steel	22	51	37
Flint Steel	12	50	39
Franklin	24	55	34
Garden City	20	58	31
Great Western	29	51	37
Girard	15	58	28
Grand Portage	36	55	34
Hamilton	1	49	41
Hancock	26	55	35
Hartford	18	58	29
Hazard	33	51	38
Howard	1	54	34
Humboldt	21	58	31
Huron	2	54	34
Hudson	22	57	32
Indiana	21	51	37
Iowa City	11	58	29
Isle Royale	1	54	34
Knowlton	1	50	39
Lake Superior	14	50	39
Livingston	10	57	32
Mass	6	50	38
Mandan	17	58	29
Meadow	20	58	31
Medora	17	58	29
Mesnard	24	55	33
Metropolitan	25	49	42
Minnesota	15	50	39
Minnesota (West)	19	50	39
Montezuma	31	55	34
Madison	31	58	30
Manhattan	11	57	32
Merrimac	34	51	39
National	16	50	39
Native Copper	3	58	30
Naumkeag	8	54	34
Nebraska	12	50	39
New England	29	58	27
New York & Michigan	12	58	28
North Star	19	55	33
North Western	24	58	31
Norwich	12	49	41
New York			
Ogima	6	50	38
Ohio	36	51	33
Ohio Trap Rock	1	49	41
Ontario	32	53	35
Ontonagon	22	50	39
Peninsular	15	50	39
Pennsylvania	15	58	30
Petherick	15	58	31
Pewabic	25	55	34
Phœnix	30	58	31
Pittsburg & Boston	32	58	32
Pontiac	13	56	38
Providence	10	56	22
Penn	2	51	37
Phila. and Boston	14	58	28
Quincy	26	55	34
Ridge	35	51	38
Ripley	30	55	33
Rockland	15	50	39
Reliance	22	58	23
Resolute	18	58	29
Sharon	9	49	41
Shirley	36	50	40
South East Cliff	9	57	31
South Side	34	55	34
Star	10	58	28
Superior	11	50	39
St. Mary's	18	55	33
Silver Creek	2	58	28
Toltec	26	51	38
Tremont	35	50	40
Union	22	51	42
Valley	14	57	32
Victoria	30	50	39
Vanderbildt	16	57	37
Vulcan	18	58	27
Washington	4	58	29
Waterbury	17	58	30
Windsor	12	49	41
Winthrop	23	58	31
Winona	21 20	52	36

Iron Mining Companies.

Name	Sec.	Town.	Range.
Cleveland	10	47	27
Jackson	1	47	27
Lake Superior	9	47	27
Pennsylvania	18	47	27

Silver Mining Companies.

Name	Sec.	Town.	Range.
Northern Light	2	49	29
North Star	26	50	29
Detroit & Marquette	10	49	28
Chippewa	14	49	28
Metallic Land Co., 16,240 acres.			
Detroit City Silver	14	49	28
Lake Superior Silver Lead	6	49	28
Silver Lake	8	49	28
El Dorado	36	50	29

SALT WELLS.

Name of Company or Owner.	Depth of well in feet.
Kawkawlin.	
A. Ballou & Co.	1400
Sinclair & Kaiser,	790
Bangor.	
Bangor Salt M'f'g Co.	779
Leng, Bradfield & Co.	800
Taylor & Moulthrop,	480
Salzburg.	
D. H. Fitzhugh,	1036
W. S. Tallman,	1000
Fisk, Bros. & Co.	
Chicago & Milwaukie,	1003
H. B. Parmlee,	1000
N. Woodside.	
Cupola Works,	650
Atlantic Works,	687
Saginaw Bay Salt Co.	500
Woodside.	
Saratoga Salt Co.	885
Bay City.	
Fowler & Tucker,	904
Dolson & Walker,	1016
Lower Saginaw Salt M'f'g Co.	890
Bay City Salt M'f'g Co.	550
" " "	950
S. Pitts,	950
Portsmouth.	
A. Stevens & Co.	
Hayden & Co.	1003
N. Y. Salt Co.	1016
Portsmouth Salt Co.	700
Zilwaukie.	
Zilwaukie	856
Driggs & Co.	
Davis, Webster & Co.	
New York	
J. H. Hill.	
Carrollton.	
Orange County Salt M'f'g Co.	800
Saginaw Valley	770
Chicago Salt Works,	779
Carrollton Mill Salt Co.	753
Empire Salt Co.	750
Pontiac Salt Co.	
E. T. Throop.	
Florence.	
Chicago Salt & Lumber M'f'g Co.	700
Saginaw City.	
Pain, Wheelock & Co.	740
Mack, Schmid & Kull,	800
Williams & Co.	
J. B. White & Co.	
Boothroyd, Gooding & Co.	
Saginaw Salt M'f'g Co.	806
Forest Valley Salt M'f'g Co.	630
N. Chapman	830
Hale & Stillson.	
Wayne Co. Salt Co	
Johnson & Co.	
Salina.	
E. Rust & Co.	830
Medina Salt Co.	
Flagler & York,	832
C. G. Fox,	830
S. V. Harkness.	
W. K. Harkness.	
Allen & Sutherland.	
Ann Arbor Salt & Lumber Co.	835
J. F. Rust & Co.	817
Curtis & King,	
Braley, Eaton & Co.	785
Eureka Salt & Lumber M'f'g Co.	740
C. Sutherland & Co.	
Smith, Thompson & Co.	
Chapin Salt Co.	
Pain & Briggs.	
Gilbert & Co.	
Sutton & Sears.	
D. H. Hill.	
East Saginaw.	
A. B. Paine,	735
Buffalo Salt Co.	724
East Saginaw Salt M'f'g Co.	725
East Saginaw Salt M'f'g Co.	806
Bridgeport Center.	
Union Salt Co.	650
Cass River.	
Gordon, Penny & Co.	774
Port Austin.	
Ayres, Larned & Wisnall	1185
Grand Rapids.	
State Salt Well	471
Lucius Lyon	659
Jas. Scribner,	380
Powers & Martin	156
R. E. Butterworth,	490
Indian Mill Creek Salt Co.	434
J. W. Windsor,	446
Jackson.	
Jackson City Salt Well	
Saline.	
Salt Well.	
Newport.	
Salt Well,	836
Lansing.	
Salt Well.	
Midland.	
Salt Well.	

POPULATION OF THE STATE OF MICHIGAN,

Compiled from the Census of 1864.

Allegan	18,849
Alpena	674
Antrim	382
Barry	14,483
Bay	5,307
Berrien	25,720
Branch	22,458
Calhoun	30,488
Cass	17,776
Cheboygan	483
Chippewa	1,158
Clinton	14,739
Delta	561
Eaton	16,497
Emmet	1,325
Genesee	22,043
Grand Travers	2,017
Gratiot	5,831
Hillsdale	27,324
Houghton*	8.225
Huson*	3,961
Ingham	17,123
Ionia	17,984
Iosco	395
Isabella	1,844
Jackson	25,905
Kalamazoo	25,842
Kent	33,458
Kewenaw	5,180
Lapeer	15,247
Leelenau	2,389
Lenawee	40,202
Livingston	16,186
Mackinaw	1,335
Macomb	22,044
Manistee	1,673
Manitou†	
Marquette	3,760

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II. MINERALS USED IN CERTAIN CHEMICAL MANUFACTURES.—1. IRON PYRITES, in abundance, in the argillaceous strata of the Huron and Michigan salt groups. 2. LIMESTONE FOR FLUXING, in the Trenton and azoic rocks.

III. MINERALS USED IN AGRICULTURE.—1. GYPSUM, in remarkable purity, abundance, and beauty, in the Michigan salt group at Grand Rapids and on the shore of Tawas Bay; also in the Onondaga salt group at Little Point au Chene, and perhaps in Monroe County. 2. MARL, generally distributed in the bottoms of small lakes and beneath peat bogs. 3. PEAT.

IV. MINERALS USED AS PIGMENTS.—1. IRON and MANGANESE OCHRES, in bogs throughout the lower peninsula. 2. FERRUGINOUS SHALES.

V. COMBUSTIBLE AND CARBONACEOUS MINERALS.—1. COAL, underlying 6,000 square miles of the central part of the peninsula. 2. BITUMINOUS SHALE, in the Huron group, capable of furnishing oil, gas, stearine, &c. 3. PETROLEUM, in the Huron shales. 4. PEAT, in bogs throughout the State.

VI. REFRACTORY MATERIALS.—1. SANDSTONE. 2. FIRE CLAY, of superior quality, in the coal measures. 3. MOULDING SAND: (a) *White*, in the cornuferous limestone of Monroe County; (b) *Colored*, in the drift.

VII. MATERIALS FOR BRICKS, ETC.—1. CLAY, in the Huron group and in the drift, for (a) *Common bricks* and pottery; (b) *Light-colored bricks* and pottery. 2. WHITE SAND, of superior quality, for glass, in Monroe County, and the Woodville sandstone of Jackson County.

VIII. MATERIALS FOR CEMENTS AND MORTARS.—1. HYDRAULIC LIMESTONE, in the Onondaga salt group in Monroe County; also in the Michigan salt group at Grand Rapids and Tawas Bay. 2. STONE FOR QUICKLIME, in abundance. 3. PLASTER, in the Onondaga and Michigan salt groups.

IX. GRINDING AND POLISHING MATERIALS.—1. GRITSTONES, of superior quality, at Point aux Barques, and coarser ones at Napoleon. 2. HONESTONES, in the azoic, near Marquette. 3. POLISHING POWDER, in the drift, in Livingston County.

X. BUILDING MATERIALS.—1. GRANITE and GNEISS, in the upper peninsula. 2. SANDSTONE, in the Marshall group at Point aux Barques, the same as the Cleveland stone; also at Napoleon, Jonesville, Marshall, and other localities; also in the Parma sandstone at Parma; also the Woodville sandstone in Ionia County. 3. LIMESTONE, in the cornuferous, in Monroe and Presqu' Isle counties, the same as at Sandusky; also in the Niagara group on Drummond's Island, same as at Lockport, N. Y. 4. SAND and GRAVEL, from the drift. 5. BOULDERS, from the drift.

XI. MATERIALS FOR ORNAMENTAL PURPOSES.—1. MARBLE, in the cornuferous limestone in Presqu' Isle County, the Hamilton limestone of Thunder Bay Island, and the azoic of the upper peninsula. 2. ALABASTER, in the Michigan salt group at Grand Rapids and Tawas Bay. 3. PRECIOUS STONES, as agates, jasper, chalcedony, chrysocola, chlorastrolites, feldspar, &c. &c., in the upper peninsula.

XII. MISCELLANEOUS.—1. LITHOGRAPHIC STONES, in the Clinton limestone and Onondaga salt group. 2. STRATIFIER'S SAND, on the beaches of the lakes. 3. BRINE, in unequalled strength and abundance: (a) In the Onondaga salt group, as at Jackson; (b) In the Michigan salt group, as at East Saginaw and all the deep wells in the Saginaw valley; (c) In the coal measures, as at Bay City. 4. PAVING STONES, from the drift.

Iron Mining Companies.			
Cleveland	10	47	27
Jackson	1	47	27
Lake Superior	9	47	27
Pennsylvania	18	47	27

Silver Mining Companies.			
Northern Light	2	49	29
North Star	26	50	29
Detroit & Marquette	10	49	28
Chippewa	14	49	28
Metallic Land Co., 16,240 acres.			
Detroit City Silver Lead	14	49	28
Lake Superior Silver Lead	6	49	28
Silver Lake	8	49	28
El Dorado	36	50	29

SALT WELLS.		
Name of Company or Owner.		*Depth of well in feet.*
Kawkawlin.		
A. Ballou & Co.		1400
Sinclair & Kaiser,		790
Bangor.		
Bangor Salt M'f'g Co.		779
Lang, Bradfield & Co.		800
Taylor & Moulthrop,		480
Salzburg.		
D. H. Fitzhugh,		1036
W. S. Tallman,		1000
Fisk, Bros. & Co.		
Chicago & Milwaukie,		1003
H. B. Parmlee,		1000
N. Woodside.		
Cupola Works,		550
Atlantic Works,		667
Saginaw Bay Salt Co.		600

Waterbury	17	58	30
Windsor	12	49	41
Winthrop	23	58	31
Winona	21	20	52 36
Nebraska	12	50	39
New England	28	58	27
New York & Michigan	21	12	58 28
North Star	19	55	33
North Western	24	58	31
Norwich	12	49	41
New York			

Saginaw Salt M'f'g Co.			806
Forest Valley Salt M'f'g Co.			830
N. Chapman			830
Hale & Stillson.			
Wayne Co. Salt Co			
Johnson & Co.			
Salina.			
E. Rust & Co.			830
Medina Salt Co.			
Flagler & York,			832
C. G. Fox,			830
E. V. Harkness.			
W. K. Harkness.			
Allen & Sutherland.			
Ann Arbor Salt & Lumber Co.			835
J. F. Rust & Co.			817
Curtis & Klug,			
Braley, Foxton & Co.			755
Eureka Salt & Lumber M'f'g Co.			740
C. Sutherland & Co.			
Smith, Thompson & Co.			
Chapin Salt Co.			
Pain & Briggs.			
Gilbert & Co.			
Sutton & Sears.			
D. H. Hill.			
East Saginaw.			
A. B. Paine,			735
Buffalo Salt Co.			724
East Saginaw Salt M'f'g Co.			728
East Saginaw Salt M'f'g Co.			806
Bridgeport Center.			
Union Salt Co.			650
Cass River.			
Gordon, Penny & Co.			774
Port Austin.			
Ayres, Learned & Wismall			1135
Grand Rapids.			
State Salt Well			471
Lucius Lyon			659
Jas. Scribner,			380
Powers & Martin			166
R. E. Butterworth,			490
Indian Mill Creek Salt Co.			434
J. W. Windsor,			446
Jackson.			
Jackson City Salt Well			
Saline.			
Salt Well.			
Newport.			
Salt Well,			836
Lansing.			
Salt Well.			
Midland.			
Salt Well.			

POPULATION
OF THE
STATE OF MICHIGAN,
Compiled from the Census of 1864.

Allegan	18,849
Alpena	674
Antrim	382
Barry	14,483
Bay	5,307
Berrien	25,720
Branch	22,458
Calhoun	30,488
Cass	17,776
Cheboygan	483
Chippewa	1,158
Clinton	14,739
Delta	561
Eaton	16,497
Emmet	1,325
Genesee	22,042
Grand Traverse	2,017
Gratiot	8,331
Hillsdale	27,324
Houghton*	8,225
Huson*	3,961
Ingham	17,123
Ionia	17,984
Iosco	396
Isabella	1,844
Jackson	25,905
Kalamazoo	25,842
Kent	33,458
Keweenaw	5,180
Lapeer	15,247
Leelenau	2,389
Lenawee	40,202
Livingston	16,186
Mackinaw	1,338
Macomb	22,044
Manistee	1,673
Manitou†	
Marquette	3,760
Mason	844
Mecosta	1,332
Menominee	496
Midland	1,244
Monroe	24,221
Montcalm	5,619
Muskegon	5,810
Newaygo	3,481
Oakland	33,725
Oceana	2,379
Ontonagan	5,406
Ottawa	15,156
Saginaw	19,675
Sanilac	8,853
Shiawassee	13,165
St. Clair	27,591
St. Joseph	21,796
Tuscola	6,983
Van Buren	
Washten:	
Wayne	

UNO

Alcona	
Benzi	
†Crav	
Glady	
Rosco	
Kalk	
†Mis	
Osce	
†Ots	
Pres	
Scho	
Wex	

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