

APPLETONS'
ANNUAL CYCLOPÆDIA

AND

REGISTER OF IMPORTANT EVENTS

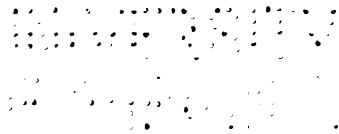
OF THE YEAR

1888.

EMBRACING POLITICAL, MILITARY, AND ECCLESIASTICAL AFFAIRS; PUBLIC DOCUMENTS; BIOGRAPHY, STATISTICS, COMMERCE, FINANCE, LITERATURE, SCIENCE, AGRICULTURE, AND MECHANICAL INDUSTRY.

NEW SERIES, VOL. XIII.

WHOLE SERIES, VOL. XXVIII.



NEW YORK:
D. APPLETON AND COMPANY,
1, 3, AND 5 BOND STREET.
1889.

where they are dependent upon the public for support, and caring for them, securing homes, and exercising guardianship over them until they become of age. During the year, 194 children were thus received into the school, and as many found homes. Since the school was established in 1874, 2,512 children have thus been cared for and educated while in the school, indentured into homes, and otherwise received the guardianship of the State during their minority.

Mineral Resources.—During the year the State produced 4,243,264 barrels of salt. The number of tons of iron shipped from the mines of Michigan during the year was 3,934,339 tons. The land-plaster produced during the year was 28,794 tons; stucco, 170,145 barrels. The amount of gold produced was \$32,338; silver, \$2,592.03. Valuable deposits of gold were discovered at and near Ishpeming, in the northern peninsula. The total number of tons of refined copper produced in the State during the year was 38,112.

Militia.—The State militia consists of 2,376 men. An encampment was held for two weeks in the summer of 1888 at Mackinac Island, with an enrollment of 2,062. The militia is supported by a tax that is levied upon the property of the State, and is equal to three and a half cents for each person in the State according to the last census.

Railroads.—Of the 85 counties in the State, only five are now without railway connections. During the year, 275 miles of road were completed and put in operation. The State now has 6,043 miles of railway, and 24,057,719 passenger fares were paid during the year, at an average rate per mile of 2.39 cents. Freight to the amount of 41,209,880 tons was moved, and the average charge for carrying a ton a mile was 1.09 cent, the rates being higher than at any time since 1875. By accidents to passengers during the year, two persons were killed and 32 injured. In accordance with the law of 1887, many of the roads have put in steam-heaters connected with the engine, and others are complying with the statute as rapidly as possible. The total tax paid by the railway companies of the State during the year was \$715,680.24. The total costs of railroads in the State, as reported to the present time, has been \$240,000,000.

Insurance.—The Legislature of 1887, by statute, prohibited the contract system of fire insurance in the State. During the year the Supreme Court declared the law constitutional. But in effect the contract system of rating remains intact, and the old rates are virtually unchanged. A commission, appointed by the Governor for the purpose, has established a uniform policy for all fire companies doing business in the State. The so-called grave-yard insurance companies were also, by the Legislature of 1887, prohibited from doing business in this State, and during the year Michigan has been freed from them.

Crops and Stock.—The principal crops in 1888 are shown by the following table:

CROPS.	Acres.	Bushels.	Average.
Wheat.....	1,504,411	28,561,504	15.67
Corn.....	889,646	24,029,026	31.00
Oats.....	868,818	81,846,674	31.50
Barley.....	40,850	1,168,810	28.40
Hay.....	1,350,000

The number of horses was 365,300; milch cows, 889,405; other cattle, 410,611; hogs, 456,436; sheep, 1,975,562; pounds of wool, 11,898,047.

The average rainfall in the State during the year was 28.68 inches.

MINING LAW. Under the common law of England, the owner of the surface of land under which minerals existed was entitled, *ex jure natura*, to everything beneath it, down to the center of the earth, except the minerals of gold and silver. In the case of mines under high-ways and non-navigable streams, the minerals belonged, as a matter of right, to the owner of the adjacent soil. All mines subjacent to navigable streams, and all gold and silver mines, belonged, by *prima-facie* right, to the crown. Where the precious metals were intermingled with a baser metal, if the gold and silver were worth more than the cost of extracting them, the mine belonged to the crown. But in certain cases the owner was permitted to work the mine on payment of a royalty. The thirteen States that formed the original Federal Union adopted the English common law, as a body, as a part of their inorganic law. But the greater part of the lands in all of the Eastern States were patented to settlers at an early period, and all minerals passed as a matter of right to the owners of the surface or soil, as the doctrine of crown reservations did not obtain in this country except in the State of New York. Such questions as have arisen in the various Eastern States in relation to mines and mining concern chiefly title-deeds, rights of support, drainage, administration, transfer of mining properties, etc., and have nothing to do with what is technically known as mining law. By virtue of title xi, chapter 9, of Part I of the Revised Statutes of New York, certain mines of gold and silver are, under certain conditions, reserved to the people of the State. In the States and Territories that are of Spanish origin the law is different. At the time of the cession to the United States of the territory originally Spanish or Mexican the Spanish or Mexican law as to mines was in force with the same, and became a part of the inorganic law of the United States, so far as that territory was concerned. The Mexican law was naturally of Spanish origin, and found its root in the code of Francisco Gamboa (1761). This code was modified in 1783, by the so-called code of Galvez, entitled "Mining Ordinance of New Spain," which left all parts of the code of Gamboa still in force, except where it was expressly repealed. These codes

were elaborate and voluminous. The code of Gamboa allowed to the discoverer of mineral lands a length of 160 varas or yards, and 80 varas in width on the vein, and upon relocation of a previously discovered mine, 120 varas in length and 60 varas in width on the vein. In the case of mines or "streamworks" of gold, original locators were allowed 80 varas in length and 40 varas in width; and in case of a second location 60 varas in length and 30 in width on the vein. This code required denunciation, working, and registry of the claim, in order to perfect title. The code of Galvez treated, among other subjects, judges and deputies of mining districts, jurisdiction of mining causes, ownership of mines, drainage, laborers, and mining generally. It created a fund and bank of supplies, and provided for the establishment of mining-schools. It contained many curious provisions, among others the privilege of nobility to the scientific profession of mining, relieved mine-owners and many of their subordinates from imprisonment for debt, and created a preference in favor of mining laborers as against other persons for their wages. It allowed the original discoverer 200 varas or yards in length on the length of the vein, and a hundred level yards measured on either side of or divided on both sides of the vein. Where the vein was inclined, an increase in width was allowed, in proportion to the degree of inclination. Under this code, minerals of every sort belonged to the crown, but could be acquired by any person other than aliens, members of religious orders, and certain high civic dignitaries, upon discovery followed by location, denunciation, and working in the manner prescribed.

The Mexican statutes modified certain provisions of the code of Galvez, and extended certain privileges to miners of quicksilver, and by decree of Oct. 7, 1823, the disabilities of foreigners were removed so far as to enable them to contract with mine-owners needing capital, and as a consequence to hold shares in such mines.

On March 16, 1848, the treaty of Guadalupe Hidalgo was ratified, by virtue of which California, Arizona, New Mexico, Texas, and a part of Colorado were ceded to the United States. That year gold was discovered in California, and the law that sprang up and grew to be the inorganic law of the self-constituted mining districts of these newly acquired Territories was a fusion of the old Spanish law as modified by Mexican decrees, and the common law of England as it existed in the Eastern United States. For a review of the mining law of foreign countries, see article by R. W. Raymond in Williams's "Mineral Resources of the United States, 1883 and 1884" (Washington, 1885.)

Federal Legislation.—From 1795 to 1865 the United States Government adhered to the policy of reserving the public mineral lands from sale. In 1805 an act was passed author-

izing the President to lease lead-mines for a limited period. Throughout the East there were, even at the time of the Federal Union, practically no public lands, and in the West few or no lands had been occupied by miners. Nevertheless, at an early period Congress discussed the question of the undivided public lands, and even in 1785 it passed an act by which it reserved one third of all gold, silver, lead, and copper mines. In many instances thereafter, lead-mines were reserved from the sale of certain portions of the public domain, and the general pre-emption law excludes from its provisions "all lands on which are situated any known salines or minerals." In the various acts admitting the later States to the Union, mineral lands were not expressly reserved, except so far as they were included in what are termed "lands generally reserved." The reservation of lead-mines under certain local acts relating to pre-emption has led to at least one important case in the Supreme Court.

In the Eastern States the English doctrine of royal mines has never been established, with the single exception of the State of New York. The States granted their public lands to settlers at an early date, and there never was any reservation of the minerals; hence the title to all mines became inseparably vested in the owner of the soil, and the ordinary rules of the law of real property have always applied to them. No record is found of litigation on any questions growing out of location of mines in the Eastern States, by virtue of any State or Federal laws, except in so far as the cases are found in Morrison's "Mining Reports."

From 1849 until 1866 Congress did practically nothing toward the promotion of mines and mining, and the seekers for precious metals in the new West were left to their own devices. The result was a rapid encroachment upon the public domain, and the passage of a vast number of statutes and regulations by the local legislatures and tribunals of the mining districts of the Territories, based upon the local mining code of old Spain, if the Territory was of Spanish origin, or upon the common law of England if it was of British origin.

Recent Legislation.—After the civil war it was proposed to promote the sale of the public domain then undisposed of, with a view to diminishing the public debt. In 1865 a joint resolution of Congress was passed, reserving all mineral lands from any grants made by them in the previous sessions to States or corporations. On July 26, 1866, Congress passed the first federal mining law which conceded to first discoverers of mineral deposits most of the privileges granted by the Spanish codes, and by the earlier district laws. This act was the first attempt of Congress to deal practically with the question of mining-titles on the public domain. It recognized many of the local mining customs to an extent that made it full of uncertainties. Under it the discovery of any part of the lode was made a basis for a claim.

The lode was what was claimed and subsequently acquired by patent. The locator was entitled to claim along the lode the number of feet that the local laws permitted. The surface was not conveyed to the locator; he merely acquired an easement to occupy it with structures necessary for the working of his mine.

On July 9, 1870 a new act was passed relating more particularly to water-rights and placer claims; and on March 3, 1873, one relating to coal-lands. On May 10, 1872, the general mining act was passed, which repealed sections 1, 2, 3, 4, and 6 of the act of 1866, and was subsequently codified as title xxxii, chapter 6, of the Revised Statutes of the United States. But a single act of any importance has been passed since then, and this is the act of Feb. 11, 1875, relating to tunnels on mining-claims.

The Existing Law.—The act of 1872 is now a part of the organic law of the United States, and is the only specific mining law existing therein. It supersedes all local customs, rules, and regulations, and all State or Territorial laws in conflict with it, but is expressly limited to claims located after May 10, 1872, and makes no attempt to interfere with any mining claims theretofore granted. It ingrafted upon the jurisprudence of the country the so-called "doctrine of the apex," which is totally foreign to all known systems of jurisprudence and of doubtful expediency. This innovation has led to much litigation and uncertainty and has made the working of the law generally unsatisfactory. The following are some of the more important provisions of the law:

Title xxxii of chapter 6 of the Revised Statutes of the United States contains twenty-eight sections, and embodies parts of the acts of 1866 and 1872, chiefly the latter. The first section expressly reserves mineral lands from sale under pre-emption, and the second gives all citizens of the United States, or those intending to become citizens, full privilege of free and open exploration and purchase of mineral lands belonging to the Federal Government under the rules prescribed by law and the local rules and customs of the mining districts not inconsistent with the laws of the United States. The third section limits the size of the claim to 1,500 feet along the vein or lode, and prohibits the location until a "discovery" of the vein or lode is made within the limits of the claim located, and it limits the width to 300 feet on each side of the middle of the vein at the surface. It also provides that no mining regulation shall so limit any claim as to be less than twenty-five feet on each side of the middle of the vein at the surface except where adverse rights existing at that date render such limitation necessary. The fourth section defines what is proper proof of citizenship. The fifth provides that locators shall have the right of possession and enjoyment "of all the surface included between the lines of their location, and of all veins, lodes, and ledges, throughout their entire depth, the top or apex of which lies inside of such surface lines extended downward vertically, although such veins, lodes, or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side-lines of such surface locations." It confines the right of possession of such extra-lateral portions to such parts of the vein or lode as lie between vertical lines drawn downward through the end-lines of the location so continued in their own direction that such planes will intersect such exterior parts of such veins or ledges. This is the famous

"apex" section, and is a departure from the rule of the common law and of the Spanish codes. By it the lode is made the principal thing; hence, as the location seldom covers the apex from one end-line to the other, and as deposits constantly vary in character, and are seldom or never continuous, the uncertainty of this section is obvious. For a full discussion of the legal aspect of this section, see Dr. Raymond's "Law of the Apex" ("Transactions: American Institute of Mining Engineers," vol. xii), various articles by the author of this article, in the "School of Mines Quarterly," vols. vii and viii, and Morrison's "Mining Rights in Colorado" (Denver, 1887). The sixth section regulates the location of tunnels, and the seventh provides for the location of mining claims and the annual labor necessary to hold them, defining certain specific prerequisites, such as distinctly marking the location on the ground, what the record shall contain, reference to some natural object or permanent monument, etc. It provides that one hundred dollars' worth of annual labor must be expended upon each claim for each 100 feet along the vein until the patent is issued. It allows the various mining districts to make further rules and regulations not in conflict therewith, and it gives a remedy to one co-owner for the failure of another to contribute his proportion of the expenses required by the act.

The eighth section concerns the formalities necessary for obtaining a patent, and vests the administration of the law, so far as the granting of patents is concerned, in the hands of the General Land-Office. An appeal lies therefrom to the Secretary of the Interior (see LANDS, PUBLIC).

The ninth section relates to adverse claims to a particular location, and defines what proceedings are necessary for an adverse claimant to take, in order to determine his claim. It requires the adverse claimant, within thirty days after filing his claim with the register of the particular mining-district in which it is situated, to begin proceedings in a court of competent jurisdiction to determine the right of possession. Failure to do this works a forfeiture of the adverse right. After judgment, the law provides for the issue of the patent or patents to the proper party (or parties, if there be such who are entitled to separate and different portions of the claim), on their filing with the register of the Land Office a certified copy of the judgment-roll of the court, and a certificate of the Surveyor-General, that the requisite amount of work has been done upon the claim, and upon payment of five dollars per acre, as required by law. The tenth and eleventh sections refer respectively to the way in which vein or lode claims shall be described, and to the prosecution to final decisions of applications made prior to the act, provided no adverse rights then existed. The next five sections, taken partly from the act of July 9, 1870, and partly from that of May 10, 1872, relate solely to placer mines. The first of these sections, No. 2,329, defines placers, and subjects them to entry and patent as other mineral lands. The next, No. 2,330, limits all placer claims to 160 acres, to two or more persons or associations of persons, and provides for subdivision of legal subdivisions of forty acres, into ten-acre tracts, and permits joint entry to two or more persons or associations having contiguous claims of any size, reserving all rights of *bona-fide* pre-emption or homestead claims upon agricultural lands. The next section, No. 2,331, requires that, where placer claims are located upon unsurveyed lands, they shall be located as nearly as possible in conformity with the general system of public lands, and shall not include more than 20 acres for each individual claim, and provides also certain limitations in cases where the claim can not be laid out to conform to the legal surveys. Section 2,332 is in effect a statute of limitations in favor of such persons or associations as have held and worked their claims prior to the act, and gives them the benefit of the local statute of limitation of the State or Territory where the claim is situated on giving evidence of their posses-

sion, but without prejudice to any liens that have already attached prior to the issue of the patent. The last of the five sections, No. 2,333, refers to the patenting of placer claims where a lode or vein is found within the boundaries. If the application for the patent includes this vein or lode, then the applicant must pay five dollars an acre for such vein or lode claim, and twenty-five feet of surface on each side thereof; the remainder of the placer claim to be paid for at the rate of two dollars and a half an acre, together with all costs of the proceeding. It also provides, that, where a vein or lode is known to exist within the bounds of a placer claim, an application for a patent not including the vein or lode claim is construed to amount to a waiver of all right to possession of the lode claim. The rule is otherwise if the lode claim is not known to exist. In such case, the placer claim carries with it all subsequently discovered valuable mineral deposits. The remaining sections of the title other than sections 2,326, 2,337, and 2,338 refer to the appointment, duties, and fees of deputy surveyors, the form of affidavits and proofs, reservation of homesteads, segregation of agricultural lands, creation of land districts by the President, and exemption of minerals from all State and railroad grants, and all vested rights then existing. Section 2,336 provides that priority of title shall govern when two or more veins intersect or cross each other, and gives the prior locator all ore or mineral contained within the space of intersection, but grants sublocators a right of way for exploitation, and where two veins unite, the vein below the point of union is given to the prior locator. Section 2,337 provides for the acquisition by the owner of a claim in a manner similar to that provided for the location of the claim of adjacent lands not to exceed five acres for the purposes of a mill-site, at the same price per acre that was paid for his claim, and gives owners of quartz-mills or reduction-works not owning mine in connection therewith, a similar privilege. Section 2,338 provides that the local legislatures, in the absence of Federal legislation, may provide suitable regulations for working-mines, involving easements, drainage, and other means for their development to be fully expressed in the patent.

State Legislation.—After the incorporation of the mining laws into the Revised Statutes, various States and Territories, in conformity with the privilege granted them by section 2,338, passed laws relating to the working and drainage of mines, and also to such matters as are necessary to their complete development and preservation. Laws were also passed relating to the management of mines, transfer and mortgage of mining rights, formation of mining companies, etc. So far as the location of mines is concerned, most of the acts are mere re-enactments of the Federal statutes. Among the States and Territories that possess such local legislation are Arizona, California, Colorado, Dakota, Idaho, Minnesota, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. A convenient compilation of these laws is found in Copp's "American Mining Lode" (Washington, 1886) and in Wade's "American Mining Law" (St. Louis, 1882). A complete compilation, by Clarence King, is found in vol. xiv of the tenth census (Washington, 1885). Certain of the States have appointed executive officers or commissioners to look after the mining interests in those States, and the Constitutions and revised statutes of certain States provide for the exercise of the general police power of the

State over all mines. Pennsylvania has a general regulative act, passed in 1870. But all acts of Congress are of paramount authority, supersede local laws and regulations upon the same subject, and abrogate all those in conflict therewith, so far as they concern mineral lands upon the public domain. This has been distinctly held by the United States Supreme Court, in *Basey vs. Gallagher*, 20 Wallace's Reports, 670. Miners' customs and regulations, once adopted, are presumed to be in force until the contrary is proved. A compilation of the various laws of eastern States relative to mines and mining is found in Day's "Mineral Resources of the United States for 1886," published by the U. S. Geological Survey (Washington, 1887).

Construction of the Law.—The principal sections of the existing laws under which controversies have arisen, calling for a construction of the same by the courts, are as follow: 1. Section 2,320, relating to the dimensions of claims. 2. Section 2,322, the apex section. 3. Section 2,324, relating to location and annual labor. 4. Section 2,338, relating to placer claims containing veins or lodes within their boundaries. The remaining sections have received judicial interpretation.

Location and Discovery.—The status of locators and patentees of lodes, as far as their rights of possession and enjoyment are concerned, is practically the same that it was formerly, with all claims other than placer claims. The law requires locations to be made along the lode or vein lengthwise of its course, at or near the surface. Each locator is entitled to follow the dip of the lode or vein to an infinite depth, within the planes passing vertically downward through his end-lines, provided his claim contain the apex of the lode or vein. These end-lines must necessarily be parallel to each other.

A location of a mining claim can not be made by a discovery shaft upon another claim that has been previously located and is a valid location. The weight of Federal and State authority is in favor of the validity of locations where the work required by statute has been performed, even if there are irregularities in the location papers, and actual possession is not essential to the validity of the title obtained by a valid location; and until such location is terminated by abandonment and forfeiture, no right or claim to the property can be acquired by an adverse entry thereon with a view to the relocation thereof. Mere possession, however, not based upon a valid location is valueless as against a subsequent valid location. Where a location notice fails to state the number of feet claimed on each side of the lode, the location is limited to an equal number of feet on each side of the discovery, and to an equal number of feet on the course of the lode or vein in each direction from that point. A failure to record a certificate of location of a mining claim within the time prescribed by law will not render the location invalid, provided the other necessary

steps be complied with. The tendency of the decisions of the Federal courts has been to support, as far as possible, locations made in good faith, notwithstanding existing informalities; and hence claims for more than the statutory length upon the lode have been held good to the extent of the number of feet allowed by law, but void as to the remainder; but the location of a mining claim upon a lode or vein of ore should always be made lengthwise of the course of the apex, at or near the surface; otherwise, it will only secure so much of the lode or vein as it actually covers. Thus, where a location is laid crosswise of a lode or vein, so that its greatest length crosses the lode, instead of following the course thereof, it will secure only such surface as lies within it, and its side-lines will become its end-lines for the purposes of defining the rights of the owner.

The Apex Section and Rights under It.—The law of 1872 grafted upon the old common-law right, which included primarily the surface and everything beneath it, the additional right of following certain veins, under certain conditions and limitations, into adjacent territory. This is the so-called right of "extra-lateral pursuit," which is met with only in American jurisprudence. This right carried with it the liability of being intruded upon by an adjoining owner in the exercise of the same right. The old right of discovery, which was originally the foundation of the miner's title, is no longer of importance; for the right to follow a vein outside of the side-lines of the claim depends solely upon the possession of the apex within the surface survey. Thus the original discovery may prove valueless; but the right of extra-lateral pursuit may make a claim of extreme value. This has several times occurred in the mining-camps of the West. For full explanation of this, see "The Emma-Durant Case," "School of Mines Quarterly," vol. viii. The terms "veins," "lode," and "ledge," and the expressions, "top of the vein," and "apex of the vein," appear to be synonymous, but they have not yet been judicially settled. A vein or lode, in order to be followed outside of the side-lines of the claim, must be continuous. Continuity is a question of fact, but as yet there is no case that squarely defines the evidence of continuity. In one case, however, it has been held that a vein or lode must be a continuous body of mineralized rock, lying within any well-defined boundaries on the earth's surface or under it. Each locator is entitled to follow the dip of the lode or vein to an indefinite depth, though it carries him beyond the side-line of his claim, provided that these side-lines substantially correspond with the course of the vein at the surface. A locator working subterraneously into the dip of the vein belonging to another who is in possession of his location, is a trespasser; and, as between two locators, the boundaries of whose respective claims include common territories, priority of location confers the better title, provided a vein

in place was discovered in the discovery shaft, and provided also that it extended to the ground in controversy. No location can be made upon the middle part of a vein, or otherwise than at the top or apex, which will enable the locator to go beyond his line. While the common law never recognized extra-lateral rights as they exist to-day, it did provide, under certain conditions, for the separation of the minerals from the surface under which they lay.

Annual Labor.—The law requires, as above stated, a certain amount of work to be done annually upon each claim, in order to preserve the location. As a rule, the law in this particular has been strictly construed, and financial embarrassment and threats to deter resumption of labor, have been held not to be sufficient excuses for non-performance of the work. It has also been held that, where work was done upon one of several adjoining claims held in common, it could only count for the other claims within the meaning of the statute where it actually inured to the benefit of all of them, and was of equal beneficial value to all.

Placer Claims.—In the case of placer claims, the owner of the claim holds everything covered by his patent, except such lodes as were known to exist within the placer claim, prior to the granting of the patent. In this respect, placer claims differ from lode claims. The courts have held that by "known to exist" is meant a vein duly located or recorded and owned by a third party before the placer claimant applied for the patent, and that the mere existence of the lode by geological inference, general rumor, or belief, did not serve to exempt it from the placer claim. The requirements of the Federal statute in regard to labor performed have been held to apply to placer claims also. There are no extra-lateral rights in connection with placer claims.

Bibliography.—The literature of mining law is not large. All mining cases of general importance, both English and American, are reported in Morrison's "Mining Reports" (Chicago, fourteen volumes). This series contains reports of many cases that in no wise form a part of the general body of the American mining law. Morrison's "Digest of American and English Decisions," found in the reports from the earliest times to the year 1875 (San Francisco, 1875) is of great value to the practitioner and is the best book for the practical wants of attorneys. For definitions of technical terms, see Rossier W. Raymond's "Glossary of Mining Terms," in vol. ix of "Transactions of the American Institute of Mining Engineers." Rockwell's "Spanish and Mexican Mining Law" (New York, 1851) is a most learned and valuable treatise, but is now antiquated. Blanchard and Weekes on "Mines, Minerals, and Mining Water Rights" (1887) is valuable, but is no longer up to date. So are also Sickles's "United States Mining Laws and Decisions" (1881), and Wade's "American Mining Law" (Denver, 1882). A convenient work is Harris's "Titles to Mines in

the United States" (London, 1877), which is to be particularly recommended to laymen on account of its briefness and thoroughness. The principle English text-book is MacSwinney's "Mines and Minerals," and the American is Bainbridge, on the "Law of Mines and Minerals" (First American Edition from Third London Edition, 1878).

MINNESOTA. State Government.—The following were the State officers during the year: Governor, Andrew R. McGill, Republican; Lieutenant-Governor, Albert E. Rice; Secretary of State, Hans Mattson; Auditor, W. W. Braden; Treasurer, Joseph Bobleter; Attorney-General, Moses E. Clapp; Superintendent of Public Instruction, D. L. Kiehle; Railroad and Warehouse Commissioners, Horace Austin, John L. Gibbs, George L. Becker; Chief-Justice of the Supreme Court, James Gilfillan; Associate Justices, John M. Berry, William Mitchell, Daniel A. Dickenson, and Charles E. Vanderburgh.

Finances.—The report of the State Treasurer for 1888 gives the following statement of finances for the year ending July 31, 1888: Receipts, \$8,097,610.25; balance in treasury Aug. 1, 1887, \$648,860.66; total, \$3,746,470.91. Disbursements, \$2,404,108.42; balance in treasury July 31, 1888, \$1,342,362.67; total, \$3,746,470.91. Of this balance, only \$189,990.72 stands to the credit of the revenue fund available for general expenses. The estimated receipts and disbursements for such expenses for the ensuing three years are as follow:

FISCAL YEAR.	Receipts.	Disbursements.
1888	\$1,554,690 72	\$2,175,249 66
1889	1,747,500 00	1,813,350 00
1891	1,813,000 00	1,614,850 00
Total	\$5,115,190 72	\$5,603,449 66
Estimated surplus		\$816,741 06

The deficiency for 1889 is thus \$320,558.94. The State debt consists of but one class of bonds, viz., Minnesota, 4½ per cent. adjustment bonds, bearing date July 1, 1881, due in twenty years, and redeemable at the State's option after ten years. The amount outstanding is \$3,965,000; the State holds of her own bonds as follows: Invested school fund, \$1,981,000; invested university fund, \$288,000; total, \$2,269,000. It will be noted that the total debt is \$3,965,000; from this should be deducted \$1,994,209, which represents the accumulation in the internal improvement land fund, which is by law set apart as a sinking-fund. The State debt, less the available sinking-fund, is then reduced to \$1,970,791.

Education.—The permanent school fund now amounts to \$3,258,096.70, having increased from sales of land \$954,930.56 during 1887 and 1888. It is expected that this fund will eventually amount to \$18,000,000 or \$20,000,000. The whole amount expended on the public schools for the year ending June 30, 1888, in-

cluding new buildings, was \$4,388,695.41. The number of enrolled pupils, high and normal schools included, for the year 1888, was 259,335, and the number of persons in the State between the ages of five and twenty-one is estimated at 416,550. The average daily attendance has been 126,468, and the average length of school during the year has been 6.1 months. There have been 1,884 male teachers employed at an average monthly salary of \$40.10, and 5,671 female teachers at an average monthly salary of \$30.52. The number of teachers that have taught in the same district three or more years is 727 for 1888, which is an increase of 46 per cent. over 1887, and 120 per cent. over 1886. The number of normal graduates teaching in 1888 was 571, an increase of 60 per cent. over 1886; while that of teachers attending normal school in 1888 was 1,427, an increase of 40 per cent. over 1886. The amount paid to teachers in wages for the year was \$1,942,665.73, and \$1,121,304.83 was paid for new school houses and sites. The law requiring the teaching of temperance hygiene in the public schools has been generally complied with. Under a recent law granting aid to schools in purchasing libraries, there have been furnished by the State 311 of these libraries. "The growth of the schools has been further enhanced," says the Governor, "by the recent amendment to the State Constitution permitting the State school funds to be loaned to school districts for building purposes in providing new and better school-houses. The amount so loaned in the twenty-one months the law has been in operation is \$291,124.91. One of the greatest stimulants and benefits ever received by our common schools comes through the law of 1887, which levies a straight one-mill tax annually on the taxable property of the State and devotes the proceeds, based on the enrollments of the schools, to the various school districts of the State. This levy, as extended on the tax rolls of 1888, amounted to \$486,670.08."

Through an appropriation made by the last Legislature, a handsome new building has been erected at Moorhead for the fourth normal school, which is now in operation. The establishment of this school probably supplies the last demand in the State, in the way of new normal schools, for many years to come.

During the year schools of law and medicine have been organized in the State university. The school of medicine embraces a college of medicine, a college of homœopathic medicine, and a college of dentistry. The course of instruction covers three years. The schools will use the medical college building in St. Paul, and the hospital college building in Minneapolis. A school of agriculture with a two-years' course has also been opened for practical instruction in farming. The president of the university reports that the large science hall and museum, which were begun in 1887, are nearly completed.