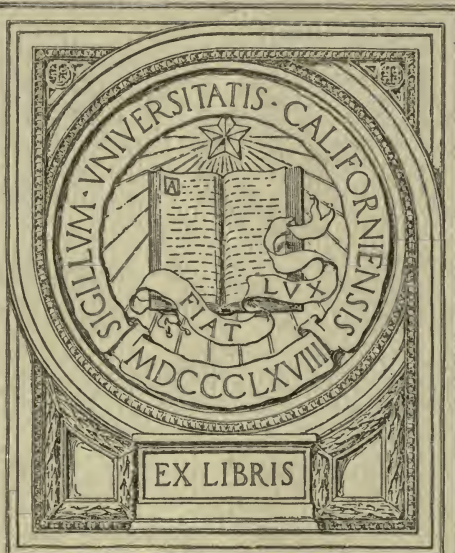


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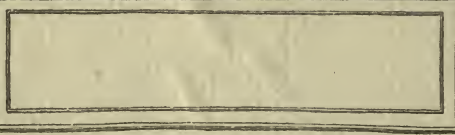
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THE TAXATION OF MINES IN MONTANA

BY

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TO VINDI
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PREFACE.

The author of this essay on mine taxation has endeavored to bring within the compass of an accessible and readable volume the facts and principles which may be considered the accepted and standard ideas on the subject. There are many phases of the subject, such as the relation of mine taxation to conservation, the theories of the single tax, etc., which the author has intentionally avoided because of the purpose which this volume is expected to serve. In brief, the purpose is to give to the citizens of Montana the available information on the situation in the state as well as the elementary and generally undisputed economic principles involved. The essay is intentionally informative. It is not to be interpreted as an expression of the author's ideas on the subject. In general, it may be said to point the way to the solution of the problem in Montana along the moderately progressive lines followed by other states.

The author is indebted to many persons for assistance in the preparation of this monograph. He wishes particularly to acknowledge his obligations to Professor E. R. A. Seligman and to Dr. Murray Haig of Columbia University for reading the manuscript and to Professor J. H. Underwood of the University of Montana for many helpful suggestions. The author also takes this occasion to express his sincerest appreciation of the many kindnesses and of the generous assistance given him by the state officials at Helena, by members of the State Temporary Tax and License Commission, by the county and city officials of Missoula, Butte, and Helena, and by many others.

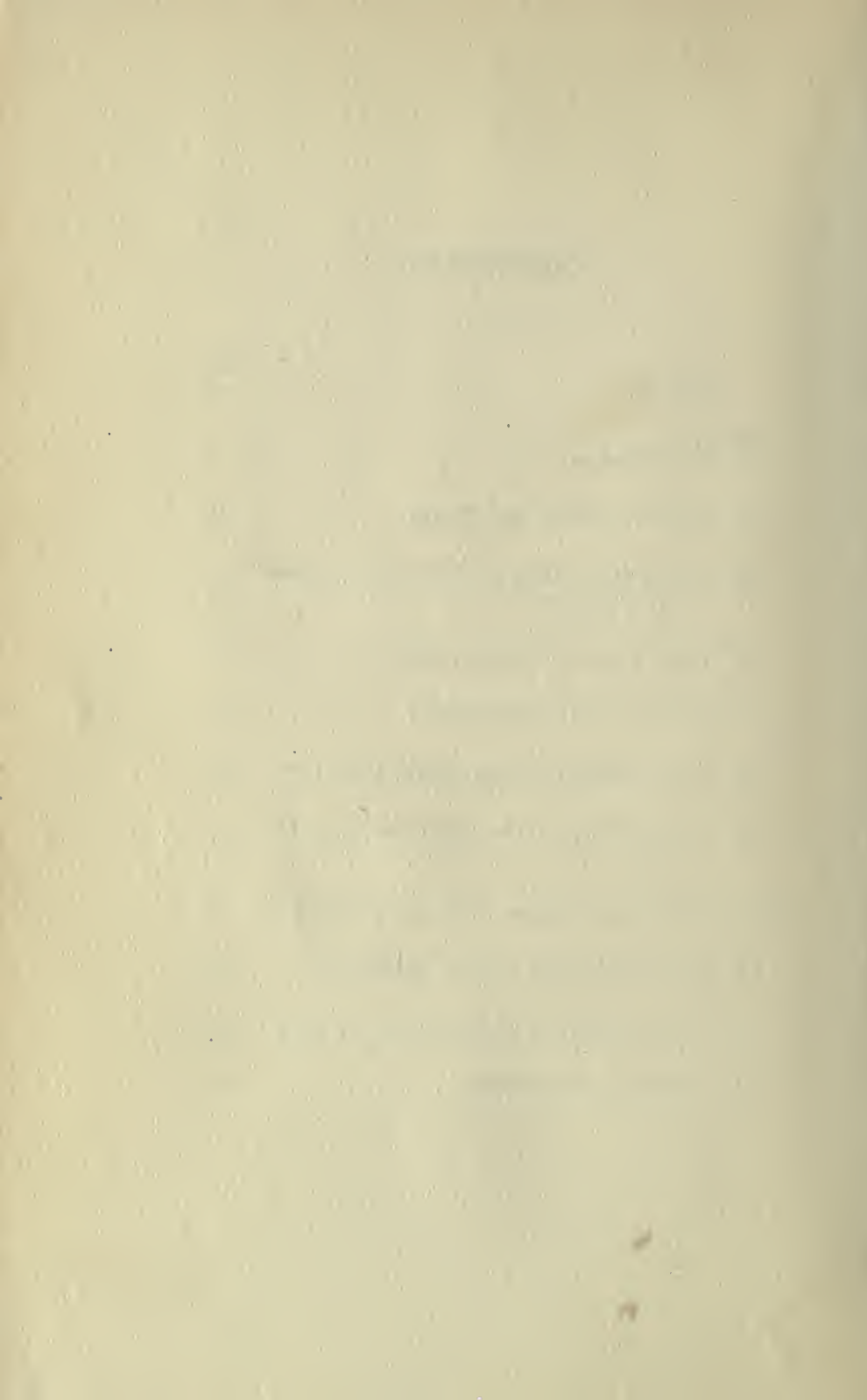
Missoula, December 24, 1918.



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CHAPTER I.

THE PROBLEM.

The tax system of Montana has been the subject of continued criticism for many years. In January, 1889, ten months before Montana was admitted to statehood, Governor Preston H. Leslie, in his message to the last territorial legislature, penned the following words: "If you will take the pains to study the assessed values fixed upon the same class of property in different parts of this territory, there will be seen such a glaring difference as to shock all sense of fairness and every principle of justice."

Governor Leslie recommended that boards of equalization be organized "with the power to revise, harmonize and equalize the values for assessable purposes all over the territory." In July, 1889, the Constitutional Convention met and framed the Constitution which, with minor amendments, has been the supreme law of Montana since. During the following few years the legislative bodies of the state laid the foundation of the political and legal structure of the state. The Constitution and the laws of the state made provision for boards of equalization. But regardless of these boards, inequalities of taxation did not disappear. On the contrary, as time went on, the inequalities became more "glaring," and called forth more critical comments. In 1899, ten years after Governor Leslie's sharp words, Governor Robert B. Smith, in his biennial message to the legislature, made a sweeping indictment of the entire tax system of the state. It is interesting to quote from his message at some length because the accusations have not become entirely antiquated.

"Under the present system for the assessment of bank stocks, notes and solvent credits [wrote Governor Smith], and for the levy and assessment of cash on hand, the attempt to make an assessment has so far proven only a farce. . . . There are several express companies doing a large and lucrative busi-

ness in the state of Montana that pay taxes simply upon a horse and wagon in the several cities of the state."

And further :

"Under the present system of taxation the only person who bears his full share and proportion of taxes is the farmer with a few acres of land or the citizen who owns a humble home in town or city. These people pay taxes upon the full value of their property. The corporations and the wealthy classes of our people evade taxation upon fully one-half of all they possess."

Governor Smith was a Populist. But his successor, Governor J. K. Toole, who was a Democrat and who was called three times to the highest office in the state, was no less explicit in his condemnation of the tax situation in the state. Speaking to the legislature in 1903, he said: "The burdens of taxation are most unequally distributed now. Millions of dollars of money and property escape taxation in this state year after year." In 1904, the Democratic party demanded in its platform "a constitutional amendment empowering the State Board of Equalization to equalize property assessments in the state," and thereby implicitly admitted that the assessment and taxation of property in the state resulted in inequalities. The attack of the Democratic party was directed chiefly against the railroads of the state. In their platform of 1908, the Democrats congratulated themselves on the fact that "every material advance in the assessment of railroad property from the sum of \$3,000 per mile to the present rate of assessment has been accomplished during Democratic ascendancy," and they renewed their demand made in the platform of 1906 "that the property of railway companies be assessed for taxation at its full cash value as the law requires."

The declarations of the Democratic party, so explicit in relation to the railroads, made no reference to the other corporations of the state. But in 1912 the Progressive party of the state, under the leadership of Senator J. M. Dixon, changed the line of attack and fixed its guns on the Amalgamated Copper Mining Co. and on the corporations of the state in general. In his keynote speech to the state convention of the Progressive party, Senator Dixon referred to the Amalgamated Copper Company in the following words: "These gentle-

men are paying on a basis of about one-eighteenth of their real valuation. . . . They should be paying about one-half of the taxes of the state, on our present total assessment. Then your taxes would be reduced to just one-third of what they are now." The Progressive party adopted a platform which read:

"We declare ourselves as being unalterably in favor of a complete reform of taxation laws and methods in Montana, to the end that there shall be a fair and equitable assessment of all classes of property. We believe that under present conditions railroads, the Amalgamated Copper Company, and other corporations are avoiding the payment of their just proportion of the taxes. . . ."

In the face of this violent attack on the tax system of the state the Democrats again formulated their demand for "commissions with full power to adjust and equalize the assessment of property for taxation purposes." The platform of the Republican party had nothing at all to say about taxation.

The Democrats were successful in the state elections of 1912, and the Thirteenth Legislative Assembly passed a law creating a State Tax Commission which was to consist of the Governor, Secretary of State, Attorney General, State Auditor, State Treasurer, and one other member to be appointed by the Governor and known as State Tax Commissioner. In 1914 the State Tax Commissioner published his first and last biennial report in which many defects of the tax procedure in the state were discussed. The Tax Commissioner pointed out especially that considerable tracts of land in various counties were escaping taxation, and that lands of the same quality were most unequally assessed. The Commissioner confirmed in his report the opinion prevalent throughout the state "that the great fundamental defect in our system is the lack of state equalization," and urged the necessity of central supervision over the assessment of property in the state. His idea seemingly had the support of the Democratic party which declared in its platform of 1914 for "the extension of the powers of the State Tax Commission and the State Board of Equalization, so as to bring about a more equitable system of taxation in this state." The Fourteenth Legislative Assembly, however, which consisted of a Dem-

ocratic House and a Republican Senate, abolished the State Tax Commission.

During the campaign of 1916, the question of taxation was again a serious issue. The Republicans, now reunited with the Progressives, declared in their platform for "an equitable and just distribution of the burdens of taxation" and pledged their candidates "to secure that condition either by legislation or constitutional amendment." The Republicans also declared specifically in favor of "a license tax upon the net profits of mines," and thus helped to center attention once more upon the question of mine taxation. The Democrats declared themselves in favor of a "non-partisan commission to make a study of present methods of taxation and to draft such constitutional and statutory amendments as may be adequate to equalize taxation."

The discussion of the tax situation in the state reached its climax during the session of the Fifteenth Legislative Assembly. Governor Sam V. Stewart started the discussion by calling attention in his message to the legislature to the inadequate condition of state finances, to the large deficit, and to the necessity of finding new sources of state revenue. Both the House and the Senate appointed "Tax Investigation Committees." The report of the "Tax Investigation Committee of the Senate," though brief, summed up the situation in the state in a manner which deserves especial attention.

"We find [wrote the Committee] that there is great inequality in the assessment in the several counties of the same class of property, such as land, livestock, banks, etc., which are assessed on a much higher percentage in some counties than in others. . . . That the large mining companies, the hydro-electric companies, the express companies, and the Pullman Car companies are not paying their proportionate share of the State's taxes. . . . A great quantity of wealth within the State escapes all burden of taxation, such as wholesale implement houses, moving picture films, and private fortunes not represented by tangible, real or personal property. . . ."

The Committee continued:

"After a comparison of the foregoing figures your committee has reached the conclusion that suitable legislation

should be enacted to reach those business enterprises which are shown herein to pay little or no taxes, also that some method should be employed to equalize the great disproportion herein shown between the value and income of the mining industry and the hydro-electric companies and the value and income of the other principal industries of the State."

Though the reports of the legislative committees arraigned the inequalities of taxation in the state in general, their emphasis was clearly on the disproportionate share of taxation borne by the large corporations, especially by the mining companies, and by the other industries of the state. At any rate in the minds of the people of the state, the issue became crystallized as one between the large mining companies and the small property owners, especially the farmers. In the House, Representative Dodds introduced a bill to impose a tax of six per cent on the net proceeds of mines, and it was said that this proposal had the approval of some dozen members from the eastern part of the state who represented the interests of the farmers. All radical measures which had as their purpose the imposition of heavier taxes on the mining companies, were fully supported by the *Daily Missoulian*, then edited and published by former Senator Joseph M. Dixon. On the other hand, the *Butte Miner*, the *Anaconda Standard*, and other large dailies of the state, opposed all legislation of this character on the ground that the mining companies were paying their full share. "From remarks which have often been dropped in Helena within the past week," wrote the *Anaconda Standard* in an editorial of January 15, 1917, "the natural inference would be that mining companies are at present paying little, if any, taxes, and are not beginning to bear their just proportion of the cost of conducting the state's government. . . ." In reply to this inference, the editorial asserts that the Anaconda Company and all other mining companies "are already paying their fair and just proportion of the taxes of the state." In an article entitled "Sheep and Mines and Taxes," the *Butte Post* of January 15, 1917, hinted at the evasion of taxes by the agricultural and other interests of the state. And the *Butte Miner* wrote in its editorial of January 20, 1917, that "agitators have made it a business to go

through the agricultural sections of the state for years past peddling misinformation concerning this subject [i. e., mine taxation],” that in reality the mining industry was bearing “an extraordinary tax . . . not levied against any other industry in Montana,” and that “the miner has become so accustomed to paying his extra assessment that he no longer thinks of objecting to this discrimination against him.” The *Butte Miner* warned the people that there was “a limit to the good nature and patience” of the miner.

At the same time the *Butte Miner* and the *Anaconda Standard* approved the steps taken by the mine owners and other business men to organize for the purpose of opposing “all bills discriminating against the mining industry in the matter of taxation.” The newspapers reported that a state-wide association of mine owners, mine operators, leasers, and prospectors had been organized. The Committee, appointed by the association and composed of leading mining men and lawyers, sent out circular letters and telegrams to commercial bodies, rotary clubs, mining men, and others “in related industries,” all over the state, inviting them to form local branches of the association and to “assist in the protest to the legislature against the imposition of the proposed special license tax.” Mass meetings were held in Butte and other cities to arouse the people to a realization that this was “a critical time for the mining industry,” and special speakers were sent to the principal cities of the state to create sentiment against the proposed measures of mine taxation. Mr. C. F. Kelly, then vice-president of the Anaconda Copper Mining Co., Mr. L. O. Evans, Mr. Bruce Kremer, and others appeared before the joint session of the Tax Investigating Committees of the Senate and House to present the case of the copper companies and other corporations.

The result of all this agitation was the defeat of the Dodds bill and of other bills which aimed specifically at the mining companies. To insure the necessary additional revenue, the legislature passed a corporation license tax law imposing a tax of one per cent on the net income of all corporations in the state, except those specifically exempted. In opposing this bill, Mr. Ronald Higgins, leader of the Republican minority, made the following remarks:

"The question of taxation is a burning issue in this state at the present time. I think it is incumbent on this Legislature to save the mining interests in spite of themselves because two years from now the people of the state will put a tax on them which will be confiscatory. . . . We know that the mine representatives say that the mines are paying their share, but an overwhelming majority of the people of Montana know that the mines do not pay their just share. . . ."

The Fifteenth Legislature also passed a law creating a temporary Tax and License Commission of three members to be appointed by the Governor for the purpose of making a thorough investigation of the tax situation and of reporting to the legislature in 1919. During the fall and winter of 1917-18, this Commission composed of Mr. C. R. Leonard of Butte, Mr. David Hilger of Lewistown and Mr. William Lindsay of Carbon County held several public hearings. But the public interest in taxation was maintained chiefly by the farmers of the state. The *Montana Equity News*, published by the Montana Equity Society, devoted considerable space to articles on taxation. An article which appeared in the issue of the *News* for September 29, 1917, with the headline "Farmers Can't Dodge Taxes in Montana Like Corporations," is characteristic of the style and point of view of the paper. During the annual convention of the Montana Equity Society held at Great Falls in February, 1918, an entire day was devoted to the subject of taxation. All references to the inequalities of taxation in the state, and especially to the evasion of taxes by the corporations, were met with enthusiastic approval by the several hundred delegates to the convention and their friends. To illustrate the spirit of the convention, it is sufficient to quote from the speech delivered by Mr. Carl W. Riddick, then assessor of Fergus County and now representative in Congress from eastern Montana. Said Mr. Riddick:

"Just as surely as I stand before you today, the tax laws of Montana are going to be revised by the next session of the Legislature. Unless we are on the job, they will not be revised in the interests of the farmers. . . . The mining interests wrote the tax laws in an early day, and they favored themselves. The mining interests own two-tenths of the property of the state,

and they pay but one-tenth of the taxes , and the only reason for this is that we sit idly by and permit the mining interests to run our state house and our Legislature.”

A few weeks before the meeting of the Equity Society, a committee of five had been formed by citizens of Fergus County for the purpose of calling a state tax conference. This conference, the first ever held in the State of Montana, was called at Lewistown, and lasted three days beginning March 12, 1918. The stormiest sessions of the conference were those devoted to the discussion of mine taxation. The mining interests of the state were well represented. Mr. L. O. Evans, chief counsel of the Anaconda Copper Company, delivered an elaborate address in which he presented an array of figures to prove that the mines were bearing their full share of the tax burden.

✓ In the spring of 1918 there were rumors that the question of mine taxation would be the principal issue in the fall campaign. It was expected that the Non-Partisan League would initiate a bill amending the article of the constitution on the taxation of mines and imposing a special tax on the mining industry. There can be no doubt that if such a bill had been initiated, the question of mine taxation would have been placed before the voters of Montana as the principal issue of state politics. The Non-Partisan League did not act upon the suggestion to initiate such a bill, but the platform of the League formulated two planks on taxation. ✓ ✓ One was in favor of exempting farm improvements from taxation; the other demanded the “equal taxation of railroads, mines, telegraph, telephone, electric light and power companies, and all public utility corporations.” The other two parties, though less specific, expressed themselves in favor of improving the tax system of the state. The plank on the “Revision of Montana Tax Laws” of the Republican party reads as follows:

“The Republican members of the Legislature will give most careful consideration to such recommendations as will be made by the Montana State Tax Commission. Our tax laws should be revised to better fit the present day condition of Montana, with a view of distributing the tax burden more equitably between all industries and all people,

in order that each shall be required to contribute no more and no less than a just share. Jealous care will be exercised that large estates, large private fortunes and largest vested interests shall contribute their full share of the revenues required to maintain our state government."

The platform adopted by the Democratic State Convention was similar in spirit. It read in part:

"Awaiting the report and recommendations of the tax commission created by the last legislative session with confidence that it will point a way for more equal distribution of tax burdens within the state, the Democratic members of the Legislature are pledged to legislation or constitutional amendment to carry out such recommendations as will bring about equal taxation of mines, public utilities, farms, and all other classes of property."

The historical survey sketched in the preceding pages shows clearly that for at least a decade the necessity of reforming the tax system of the state has been fully recognized. Nevertheless, with the exception of an amendment increasing the powers of the State Board of Equalization, little has been done in the matter. There has been too much politics in the handling of taxation in Montana, and too much fear, on the part of corporations and of individuals, of frank and scientific discussion of tax problems. As a result, the problem of taxation is still before the people of the state in its most rudimentary form. It is still a question of eliminating gross inequalities as between counties and between classes of property. There are several phases of the problem which must be clearly distinguished. There are inequalities of taxation in Montana with which other states have wrestled in the past and are wrestling still. Such inequalities are inherent in the system of the general property tax and can be eliminated to some extent only by modifications in that system. There are other inequalities which are the result of an inadequate tax administration. They can and should be remedied by reforms in methods of assessment and by the establishment of a permanent tax commission with adequate powers of supervision and control. But Montana suffers also from inequalities of taxation between classes of property and industries which are the result of antiquated or one-sided laws. The method

of taxing corporations in Montana was adopted about thirty years ago. While most states in the country have studied the problem of corporate taxation and have made necessary changes in their laws, Montana has held on to the past. The problems arising out of this situation are the most serious and complex ones.

The number of corporations in Montana is large, and they cover the entire field of industry, trade, and finance. To devise an adequate system of corporate taxation will require the best efforts of a permanent tax commission for a considerable time. But there is one phase of corporate taxation which is of immediate interest in Montana. That is the taxation of mines. Rightly or wrongly, there is a wide-spread impression throughout the state that the mining industry has not paid and is not now paying its proper share of taxes. This impression is the cause of the feeling prevalent throughout the state that the small farmer, or business man, is the victim of injustice sanctioned by the constitution and laws of the state. This feeling is responsible for the recurrent outbursts against the mining companies and for the periodical attempts to tax the mines in some special and drastic way. It is also the cause of much of the political ferment in the state and of the friction between the farmers and other groups of the population.

The keen feeling on the subject notwithstanding, there is very little exact understanding of the problem in the state. Discussion on both sides has been partisan and has generated much heat, shedding little, if any, light. Representatives of the mining companies have been inclined to pile up arrays of figures and to present impressive statistics of taxes paid by their companies. The opponents of the mining companies, on the other hand, have pointed an accusing finger at the large profits made by the mining companies from year to year. Both sides have permitted temporary partisan considerations to overshadow the real problems involved.

The supreme task, therefore, is to spread enlightenment on the subject and to place within reach of all the true facts and the generally recognized principles which are involved in the issue. The presentation of such facts and principles is attempted in the following pages. It is an effort to contribute to the in-

telligent discussion of the problem in the state. The author has the sincere hope that this study may help to form an enlightened public opinion on the subject and thereby to advance the solution of one of the most difficult problems of the state.

CHAPTER II.

HOW THE MINES ARE TAXED.

The method of mine taxation which is in force in the state of Montana is known as the "net proceeds" method. The so-called net proceeds of the mines are taxed as personal property. In addition, the surface of the mines and the improvements are taxed to a limited extent. This method is provided for in Section 3 of Article 12 of the Constitution. Sections 2563 to 2571 inclusive of the Revised Codes of 1907 merely lay down the regulations by means of which the purpose and provisions of the Constitution may be carried out. In the following pages the provisions of the Constitution and of the statutes are summarized in a non-technical way.

The assessment of mines is under the jurisdiction of the local assessor. The assessor of each county is responsible for the assessment of all the mines within his county, and makes the assessment in accordance with the law. The State Board of Equalization furnishes to every local assessor a special book called the "Assessment List of the Net Proceeds of Mines." This book specifies the questions which are to be answered by the owners of mines and which are required by statute. In this way the assessment of mines is made uniform throughout the state. According to the reports of the Geological Survey, there are at least twenty counties in Montana in which mining operations are carried on. There are thus twenty county assessors upon whom it devolves to make an assessment of the mines within their counties. Each one of these twenty county assessors is guided in the performance of his duties by the form of the assessment book prepared by the State Board of Equalization. But aside from this, the local assessor is entirely independent in the performance of his task.

It is the duty of the county assessor to obtain a statement from every person, corporation, or association engaged in mining in his county. The statement must be made out annually between

the first and tenth day of June for the year preceding the first day in June. The statement must be verified by the oath of the owner, or of the superintendent or manager, of the mine or mining corporation. The owner or managing agent is required by law to deliver the statement to the assessor of the county in which the mine or mines are situated.

Each statement made by the owner or managing agent of the mine must contain the name of the owner of the mine and a description of the mine and of its location. This description includes a statement of the number of acres which the surface of the mine occupies. The Constitution provides that such surface should be taxed "at the price paid the United States therefor." This means five dollars per acre for quartz mines, and two and a half dollars per acre for placer claims. This valuation is a fixed one, regardless of the value of the mine.

However, in case "the surface ground, or some part thereof, of such mine or claim is used for other than mining purposes, then said surface ground, or any part thereof, so used for other than mining purposes, shall be taxed at its value for such other purposes, as provided by law." The meaning of this provision is clear. In case the surface of a mining claim is used as any other piece of ground for the erection of dwellings or stores or factories or other buildings not used for mining, then that surface acquires a value which is entirely independent of mining. It is then no longer a mining claim. It is real estate and must be taxed as such. The importance of this provision may be grasped when it is remembered that a very large part of the city of Butte is built upon the surface of mining claims. To tax such land at the price of mining claims, that is at five or two and a half dollars per acre, would be preposterous. But when such surface ground is taxed at the value acquired by its use for other than mining purposes, such taxation has no relation to the mine. If an owner of a mine uses several acres of the surface ground of his mine to build homes for his workers or a store or a hotel, such surface ground is put to a use which has a value of its own and is in no relation to his mine for purposes of taxation. Taxes paid on

such surface ground cannot be credited to the mine. In so far as the claim is used exclusively for mining purposes, the rate of taxation remains five or two and a half dollars per acre, or "the price paid the United States therefor."

Besides the tax on the surface ground, the owners of mines are also assessed for "all machinery used in mining, and all property and surface improvements upon or appurtenant to mines and mining claims which have a value separate and independent of such mines or mining claims." Such is the provision of the Constitution which is also embodied in Section 2500 of the Revised Codes of 1907. Section 2570 of the Revised Codes makes this provision more emphatic by declaring that "nothing in this chapter contained must be construed so as to exempt from taxation the improvements, buildings, erections, structures, or machinery placed upon any mining claim, or used in connection therewith, or supplies used either in the mills, reduction works or mines." This means that machinery, such as compressed air turbines, engines, etc., is assessed as machinery in factories would be; that supplies, such as powder, dynamite, timber, etc., are assessed as merchandise and supplies would be in any other business; and that buildings, such as office buildings, power houses, smelters, accommodations for workers, etc., are assessed as improvements in accordance with the value they would have apart from mining operations. All such supplies and buildings and machinery, together with the surface ground, make up the real and personal property for which the mining industry is assessed, outside the net proceeds of the mines.

The net proceeds form the most important item in the assessment of the mining industry in Montana. The Constitution does not specify how the net proceeds should be taxed. The Constitution merely provides that "the annual net proceeds of all mines and mining claims shall be taxed as provided by law." The method of taxing the net proceeds is laid down in the Statute (Section 2500 of the Revised Codes of 1907) which provides that "the annual net proceeds of all mines and mining claims shall be taxed as other personal property." This means that the rate of taxation applied to personal property in the county and in the state is imposed also upon the net proceeds of the mines.

The net proceeds are regarded for purposes of taxation as personal property.

The statute also specifies the method of determining the net proceeds of a mine. "The Assessment Book," prepared by the State Board of Equalization and used by the county assessor, contains special columns with headings for such data as should help the assessor to determine the net proceeds. The owner or manager of the mine is required to state the total number of tons of ore extracted during the year and the gross yield or value in dollars and cents per ton of the ore. These two items furnish the gross value of all the ore extracted during the year. From this gross value certain expenditures are deducted: first, the cost of extracting the ore from the mines; secondly, the cost of transporting the ore and mineral to the mill or reduction works; thirdly, the cost of reducing the ore and of converting it into money. The expenditures allowed for deduction include all money expended for labor, machinery, and supplies needed and used for mining operations, for transportation, for reduction, and for the "extraction of the metals and minerals." They also include all moneys expended during the year for improvements in and about the mine, and for the construction of mills and reduction works used and operated in connection with the mine. The only items of expenditure incurred during the year which are not to be deducted from the gross value are "the salaries or any portion thereof, of any persons or officers not actually engaged in the working of the mine or personally superintending the management thereof." The net proceeds are thus derived by subtracting from the gross value of the ore extracted during the year the cost of extracting, reducing, refining, and selling the ore, and the cost of improvements made during the year, with the exception of such salaries as are paid to persons not actually engaged in the working or superintending of the mine.

It is clear that the preparation of the statement of the net proceeds of a mine is a complex process. Experience in many states has shown that the amount of net proceeds may be materially reduced either by understating the gross value or by including improper items of expenditure. The statute gives the county assessor the right "at any time to exam-

ine the books and accounts of any person, corporation, or association engaged in mining in order to verify the statement made by such person, corporation, or association, and if from such examination, he finds such statement false, he must assess the net proceeds in the same manner as if no statement had been made or delivered." That is, the assessor must list and assess the property, according to his knowledge and information. In practice, however, the assessors seldom, if ever, avail themselves of this right. As a rule they merely receive and record the statements prepared for them by the mine owners or mining companies.

Such is the law by which the assessment and taxation of the mining industry is regulated in the state of Montana. For those who wish to familiarize themselves with the wording of the law the article of the Constitution and the sections of the Code relating to the taxation of mines are reproduced.

Constitution: Article XII, sec. 3:

All mines and mining claims, both placer and rock in place, containing or bearing gold, silver, copper, lead, coal, or other valuable mineral deposits, after purchase thereof from the United States, shall be taxed at the price paid the United States therefor, unless the surface ground, or some part thereof, of such mine or claim is used for other than mining purposes, and has a separate and independent value for such other purposes, in which case said surface ground, or any part thereof, so used for other than mining purposes, shall be taxed at its value for such other purposes, as provided by law; and all machinery used in mining, and all property and surface improvements upon or appurtenant to mines and mining claims which have a value separate and independent of such mines or mining claims, and the annual net proceeds of all mines and mining claims shall be taxed as provided by law.

Section 2500. Taxation of Mines:

All mines and mining claims, both placer and rock in place, containing or bearing gold, silver, copper, lead, coal or other valuable mineral deposits, after purchase thereof from the United States, shall be taxed at the price paid the United States therefor, unless the surface ground, or some part thereof, of such mine or claim is used for other than mining purposes, and has a separate and independent value for such other purposes, in which case said surface ground,

or any part thereof, so used for other than mining purposes shall be taxed at its full value for such other purposes; and all machinery used in mining and all property and surface improvements upon or appurtenant to mines and mining claims which have a value separate and independent of such mines or mining claims, and the annual net proceeds of all mines and mining claims shall be taxed as other personal property.

ASSESSMENT OF NET PROCEEDS OF MINES.

- Section 2563. Owners of mines must make statement.
- Section 2564. Statement, what to contain.
- Section 2565. What deductions are to be made.
- Section 2566. Assessment book of the net proceeds of mines, what to contain.
- Section 2567. Duties of the assessor and other officers.
- Section 2568. Failure to make statement; duty of assessor.
- Section 2569. Right of assessor to examine books, etc.
- Section 2570. Improvements, etc., not exempt.
- Section 2571. Tax, how collected, and tax a lien.

2563. (#3760) Owners of mines must make statement.

Every person, corporation or association engaged in mining upon any quartz vein or lode, or placer mining claim, containing gold, silver, copper, coal, lead or other valuable mineral deposits, must, between the first and tenth days of June in each year, make out a statement of the gross yield of the above named metals or minerals from each mine owned or worked by such persons, corporation or association during the year preceding the first day of June, and the value thereof. Such statement must be verified by the oath of such person, or the superintendent or managing agent of such corporation or association, who must deliver the same to the assessor of the county in which such mine or mines are situated.

2564. (#3761) Statement, what to contain.

The statement mentioned in the preceding section must contain a true and correct account of the actual expenditures of money and labor in and about extracting the ore and mineral from the mine and transporting the same to the mill or reducing works and the reduction of the ore and the conversion of the same into money, or its equivalent, during the year.

2565. (#3762) What deductions are to be made.

In making the statement of the expenditures mentioned in the preceding section, there must be allowed all moneys expended for necessary labor, machinery and supplies needed and used in the mining operation, for improvements necessary in and about the working of the mine, for reducing the ores, for the construction of mills and reduction works used and operated in connection with the mine, for transporting the ore and for extracting the metals and minerals therefrom; but money invested in the mines or improvements during any year except the year immediately preceding the statement, must not be included therein. Such expenditures do not include the salaries, or any portion thereof, of any persons or officers not actually engaged in the working of the mine, or personally superintending the management thereof.

2566. (#3763) Assessment book of the net proceeds of mines, what to contain.

The assessor must prepare, at the same time he prepares the general assessment book, another assessment book, called "The Assessment Book of the Net Proceeds of the Mines" alphabetically arranged, unless otherwise directed by the State Board of Equalization, in which must be listed the net proceeds of all the mines in his county, and in which must be specified, in separate columns and under the appropriate head:

1. The name of the owner of the mine.
2. Description and location of the mine.
3. Number of tons extracted during the year.
4. Gross yield or value in dollars and cents.
5. Actual cost of extracting same from mine.
6. Actual cost of transportation to place of reduction or sale.
7. Actual cost of reduction or sale.
8. Cost of construction and repair of mines and reduction works during the year.
9. Net proceeds, or value in dollars.
10. Total amount of tax.

2567. (#3764) Duties of the assessor and other officers.

The duties of the assessor, county clerk, state board of equalization, and board of county commissioners, as to the assessment of the net proceeds of mines, the statements and returns to be made, the equalization thereof, and other

official acts, are the same as those mentioned in Chapter III of this title, in regard to the assessment of other property.

2568. (#3765) Failure to make a statement; duty of assessor.

If any person, corporation, or association engaged in mining as mentioned in this chapter, refuses or neglects to make and deliver to the assessor of the county where the mines are located, the statement mentioned in this chapter, such assessor must list the property and assess, according to his knowledge and information, the amount of such tax in the manner provided by law for the assessment of other property where no statement is furnished.

2569. (#3766). Right of assessor to examine books, etc.

The assessor, at any time, has the right to examine the books and accounts of any person, corporation or association engaged in mining, as mentioned in this chapter, in order to verify the statement made by such person, corporation, or association, and if from such examination, he finds such statement false, he must assess the net proceeds in the same manner as if no statement had been made and delivered.

2570. (#3767) Improvements, etc., not exempt.

Nothing in this chapter contained must be construed so as to exempt from taxation the improvements, buildings, erections, structures, or machinery placed upon any mining claim, or used in connection therewith, or supplies used either in the mills, reduction works or mines.

2571. (#3768) Tax, how collected, and tax a lien.

The tax mentioned in the preceding sections must be collected and the payment thereof enforced as the collection and enforcement of other taxes are provided for, and every such tax is a lien upon the mines or mining claims from which the ores and minerals are extracted, which lien attaches on the first Monday of March in each year, and the sale thereof for delinquent taxes may be made as provided for the sale of real estate for delinquent taxes.

CHAPTER III.

DO THE MINES BEAR AN ADDITIONAL BURDEN OF TAXATION?

The method of taxing mines described in the preceding chapter has given rise to two views on the subject. One is that the mines of the state are especially favored by the law in comparison with other forms of property. The other is that the mining industry has from the very beginning been singled out by the law for revenue purposes and that it has been made to bear, and does still bear, an additional burden of taxation, as compared with other classes of property in the state.

The latter view was ably presented by Mr. C. F. Kelly, vice-president of the Anaconda Copper Company, in an address delivered before the Joint Legislative Committees on tax investigation on January 18, 1917, and since republished in pamphlet form under the title of *Mining Taxation in Montana*. In that address Mr. Kelly claimed that "so far from having in mind the proposition of exempting mines from taxation, the purpose, on the contrary, was to impose additional burdens of taxation upon mines over and above that imposed upon any other form or species of land." Mr. Kelly asserted that such was the evident intention of the law, because in addition to taxes on the surface of mines and on improvements and machinery, the law imposes a special tax on the net proceeds of mines. Mr. Kelly's argument may be best summarized by the following quotations from his address:

"So far as the surface of mining property is concerned, it is precisely in the same situation as is any other real estate, taxed at a price commensurate with its value for purposes incidental to the working of the mine. . . . Beyond the surface . . . every dollar's worth of property that is placed upon the surface of a mining claim, whether it is machinery, a mining improvement, a building, or what not, is under the law taxable as is all of the property in the state. Now [and this is Mr. Kelley's most significant statement] I submit as a fundamental proposition that when

you have taxed the surface of a mining claim at its full value for the purpose for which it is used, or is capable of being used, and when you have taxed the improvements that have been made upon that surface, you have gone as far in the matter of taxation as the law reaches any other class of property in this state.”¹

From this point of view, the tax upon net proceeds, which is levied in addition to the taxes on the surface and the improvements, is a special tax imposed upon mines only and not levied upon crops or any other form of property, and therefore represents an additional burden upon the mining industry of the state.

Mr. Kelly explains this discrimination against mining property in Montana by the fact that the mines were originally the only source of revenue in the state and had to be drawn upon to furnish the necessary means of government. Writes Mr. Kelly:

“It never occurred to the framers of the constitution that they were putting mines in a specially favored class. . . . On the contrary, they were taxing what was then the valuable property in the state of Montana,—the only property which furnished a source of revenue, and constructing a revenue measure, they penalized it to the extent of making it primarily responsible for the burdens of government.”²

To prove that his view is the true interpretation of the law, Mr. Kelly quotes from the decision of the Supreme Court in the case of the Northern Pacific Railway Company versus Mjeld, 48 Montana, page 287 at page 296. The important sentence in this decision, which Mr. Kelly italicizes, is as follows:

“The problem before the constitutional convention was, not how to exempt mining property from taxation, but rather how to compel it to respond to the reasonable demands of the state for revenue and at the same time protect it against such exactions as would or might discourage prospecting or development.”

Upon the basis of this quotation and of his general interpretation of the law, Mr. Kelly reaches the following conclusion:

¹ C. F. Kelly, *Mining Taxation in Montana*, pp. 9-10.

² *Ibidem*, pp. 10-13.

"Upon the successful mining venture there was levied, in addition to the taxes which all other property bears, a net proceeds tax in other words a license tax so that today, and every day since the formation of the constitution of this state, the mining industry is, and has been, the only great industry of the state, which has been upon a substantial license basis."¹

Such is the argument of those who claim that the mining industry in the State of Montana not only bears, and always has borne, its share of taxes, but more than its share. According to the newspapers of the state, Mr. Kelly's address made a profound impression upon the members of the legislative committee and influenced subsequent legislation. The argument was repeated by Mr. L. O. Evans, counsel for the Anaconda Copper Company, at the State Tax Conference held at Lewistown March 12-14, 1918. This argument may, therefore, be considered as the best and strongest expression of those who believe that the mines of the state bear an extra burden of taxation. The men quoted above are undoubtedly, by their position and legal training, the best qualified and most authentic spokesmen of the mining interests in the state.

Nevertheless, it cannot be too strongly emphasized that their argument is completely at variance with the generally recognized principles and methods of taxation. The fallacy of the argument is evident as soon as one analyzes the purpose of taxation and the methods by which our public revenue is raised. Mr. Kelly, in his address quoted above, realized that it was essential to examine his general statements in the light of fundamental principles. In two places in his address, he made an attempt to do so. These passages of his address are interesting and introduce us to the heart of the problem. Said Mr. Kelly:

"It is a basic principle of all government that as each citizen enjoys the benefits derived from becoming a constituent member of the state in the protection of his life, his liberty and his property, so also should each citizen of the state contribute proportionately to the support and maintenance of that government. Upon this principle is founded all justice in taxation. . . ."

¹ *Ibidem*, pp. 10-13.

And further:

"An authority whose word is final has defined taxes as 'the enforced proportional contributions from persons and property levied by the state by virtue of its sovereignty for the support of government and for all public needs.' I wish to emphasize the word 'proportional,' for the pillar upon which the entire superstructure rests is the fundamental requirement that taxes shall be levied by some rule of proportion which is intended to insure uniformity of contribution and a just apportionment of the burdens of government."¹

Such are the principles which Mr. Kelly cites in substantiation of his general argument. One may accept the definition of a tax quoted by Mr. Kelly. One may also agree with Mr. Kelly in laying the emphasis on the word "proportional." The question, however, is, what is "the rule of proportion" by which taxes should be levied. Mr. Kelly has nothing more to say on the subject throughout his address. From the passages quoted above it would seem that, in his view, each citizen should pay in proportion to "the benefits derived from becoming a constituent member of the state in the protection of his life, his liberty and his property."

If this is correct, Mr. Kelly holds what is known as "the benefit theory of taxation," that is, the view that each citizen should pay taxes in proportion to the benefits derived by him from government. There are many "authorities" who could be quoted in support of this view. However, their word is not "final." The whole trend of thought in public finance has been away from the "benefit theory" in the direction of the "faculty theory." The "benefit theory" has been abandoned by most students of public finance because of its inherent difficulties and contradictions. It is impossible to measure the advantages conferred upon any one individual by any of the activities of the state. Many of the most essential functions of the state, such as education, sanitation, etc., are of the greatest benefit to those who are least able to pay for them. In general, the "benefit theory" is based upon an individualistic conception of government which

¹ *Ibidem*, pp. 5-6.

has become entirely inadequate under the new conditions of our social life.

The "faculty theory of taxation" is based on the idea that all members of society have common interests for the realization of which they must contribute in proportion to their ability to pay. Adam Smith long ago expressed the idea that "the subjects of every state ought to contribute towards the support of the government as nearly as possible in proportion to their respective abilities." At the present time, the weight of authoritative opinion in the field of public finance is on the side of the "faculty" or "ability" theory. It is recognized as being in greater harmony with the modern conception of the state, with the interests of society, and with the ethics of Christianity.

But aside from theories, the idea that all persons should pay taxes in proportion to their ability is at the basis of the tax system prevailing in the United States. As is well known, the foundation of our tax system is the general property tax. It is used in every city, county, and district. There are only a few states in which it is not used to supply revenue for the state or central government. It is, in short, as one writer has said, "the structural iron which holds the building together the largest single source of revenue universally regarded as *the tax* for all purposes."¹ In the State of Montana, the general property tax contributes by far the largest part of all taxes collected for all purposes. Now, the general property tax is based upon the theory that "every man should pay taxes according to his ability and that his ability is approximately measured by a valuation of all property owned by him on a given date," or as another writer puts it, the "popular and plausible" assumption which is at the basis of our state and local taxation is that as all property is protected by the state and as all persons owe allegiance to the state, all persons and property "must contribute to the requirements of the state for revenue in proportion to their ability."² The idea is very old in the United States. Mr. Wells quotes from the general laws of Massachusetts of 1660 the following lines: "The court considering the necessity of an equal contribution to all common charges in town, doth order, etc. . . .

¹ Carl C. Plehn, *Introduction to Public Finance* (1916), p. 248.

² D. A. Wells, *The Theory and Practice of Taxation*, p. 394.

And every such inhabitant, who shall not contribute, *proportionally to his ability* to all common charges, etc.”¹ The Constitution of Montana lays down the rule of uniformity and equality which, in accordance with the spirit of all American state constitutions, means that taxes should be paid in proportion to ability.

This discussion of the theory of taxation must necessarily be brief, but it is important to make clear that Mr. Kelly and his associates cannot claim “finality” for their views. But in so far as the general argument of this chapter is concerned, it makes little difference which theory of taxation one holds. Whether taxes should be paid according to benefits derived or to ability, the supreme question is, how should benefits or ability be measured. This is a very complex and difficult problem which cannot be fully discussed here. Besides, the question before us is, not what is the true theory of the subject, but what is the actual practice; not what should be, but what really is. And this is a question which can be more readily answered.

Whatever the theory of taxation implied in the laws of Montana, their undoubted intent and purpose is to secure uniformity and equality. Furthermore, there can be no doubt that according to the laws of Montana, the means of securing equality is to levy taxes in proportion to the value of property. Whether the framers of the Constitution and the law-makers of Montana believed that taxes should be paid in proportion to benefit or in accordance with ability, they undoubtedly felt sure that a person's ability to pay or the benefits derived by him from the state are measured by the amount and value of property owned by him. This then is “the rule of proportion” which is clearly expressed in the law. Equality of taxation is attained when each class or kind of property pays taxes in proportion to its value. Individuals or corporations can claim to have paid a proportionate share of taxes only when they have paid in proportion to the value of their property.

The law of Montana requires that taxable property should be assessed at its full cash value (section 2502 of the Revised Codes). Section 2501 of the Revised Codes specifies that the terms “value” and “full cash value” mean “the amount at which the property would be taken in payment of a just debt due from a

¹ *Ibidem*, p. 244.

solvent debtor." In other words, the value of any piece or form of property for purposes of taxation is the selling or market value. This is clear from all the references made in the Code to value and valuation. The only problem which the law-makers had to wrestle with was how and by what methods could the value of various forms of property be determined.

The answer to this problem is embodied in those articles of the Code which relate to the assessment of property. The methods of assessment laid down in these articles are as different as the kinds of property to be assessed. Banking corporations, for instance, are assessed, not only on their real estate, but also on the capital stock. In the case of railroads, the assessment covers not only the roadbed, rolling stock, rails, roadway, but also the right of way and the franchises. Private bankers are assessed for "the amount of capital invested either in real estate or cash, the amount of surplus, and undivided profits." Some corporations are assessed on their real and personal property, including capital stock and franchises. Land is assessed on the basis of its use, such as hay lands, irrigated land, grain lands of first and second class, and so on.

It cannot be claimed that the methods of assessment laid down in the Code are the best that could be devised. On the contrary, they are in many ways antiquated. They have not been changed in a generation and fall far below the new methods that have been developed in other states. But that is another question which has no bearing on the subject considered in this chapter. The important point which should be clear from the above analysis of the Code is that different ways of assessing property were adopted by the law-makers of the state because they knew that the true value of different classes of property was made up of different elements. What they strove for in every case was "the true cash value." What they tried to do was to devise a special method of assessment which would get at "the true value" of each class of property.

It is from this point of view that the assessment of mines must be considered. The method prescribed by the Constitution and the statutes consists in obtaining the value of a mine by summing up the price paid the United States for the surface, the value of the improvements, and the net proceeds for one year. This may

be illustrated by the assessment of the mining industry in Silver Bow county for the year 1917. In that year, the total assessment of mining claims in the county was \$149,850; the assessment of improvements was \$1,098,120; mining and manufacturing machinery amounted to \$2,021,600; while the net proceeds in the county were \$44,282,500; that is, the total assessment of mining in Silver Bow county in 1917 was \$47,552,070. If the net proceeds had been deducted, the assessment of mining property in the county would have amounted to \$3,269,570. That is, the assessment of mining claims, lands, improvements, and all machinery in and about the Silver Bow mines in 1917, was a little over three million dollars.

According to Mr. Kelly's statement quoted above, when the mines have been assessed for their surface at a fixed price and for their improvements, they have been fully assessed as compared with all other forms of property. In other words, three million dollars in his opinion was the real value of the great mining industry of the Butte district in 1917, and the taxes paid on every dollar over and above the three million was an extra burden placed on the mines in a spirit of discrimination. The statute declares that the true value of property means the amount at which the property would be taken in payment of a just debt due to a solvent debtor. Do Mr. Kelly and his associates mean to say that they would be willing to dispose of all the mining property in Silver Bow for three million dollars?

It is evident that by fixing the value of a mining claim at the price "paid the United States therefor," the Constitution once for all stopped that economic process by which the value of property is determined. When a homesteader has improved his land by means of careful tillage and scientific farming and proper fertilization, the increased income producing capacity of his land is reflected in the value placed upon it by the market. The homesteader is taxed on this new value created by him. He is not taxed on the price "paid the United States therefor." The new value of his land is in the surface, the possession of which makes possible the utilization of all the potentialities of the soil. The same is true of a mine. The surface of a mine may be rough and mountainous and unattractive in every way, but the possession of that surface is essential to reach the wealth stored under-

ground. When ore is discovered, the value of that claim, as a claim, rises proportionately. The balance sheet of any mining company clearly shows it. But the Constitution of the State of Montana forbids the assessor from incorporating that increased value in the assessment of the mine. Regardless of the immense treasures to which the surface of a claim may lead, the assessment must remain five or two and a half dollars per acre.

This is a fundamental difference between the assessment of mines and other property. To make up for this, the Constitution and the laws of Montana provide for the assessment of net proceeds. The tax on net proceeds is *not in addition* to the taxes on surface and improvements. It is merely a device for obtaining as nearly as possible the true value of a mine. The law simply implies that a mine is a form of property, totally different from other kinds of property; that it is impossible to assess it in the manner in which land or banks or gas companies are assessed; and that it is necessary, therefore, to have recourse to a different device which should be as well adapted to this form of property as possible. The device is to assume that the true value of a mine equals approximately the net proceeds of the year plus the nominal price paid for the surface and the value of the improvements.

The real issue between those who defend and those who criticize the system of mine taxation in Montana is just this: is the method prescribed by the Constitution and the laws the best method possible for obtaining the true value of the mines? It cannot be too emphatically stated that no other issue is involved in the discussion of mine taxation. It is not a question at all whether the mines are exempt from taxation. They are not, and there is no reason why they should be. But is the assessment of the mines based on sound principles, and does it achieve its purpose? This is the question which demands an answer and which will be discussed in a subsequent chapter.

Whatever answer may be given to this question, it is necessary to dispel the impression, if such exists anywhere, that the mining interests have at any time been subject to unfavorable discrimination in the State of Montana. That statements to that effect, such as were quoted above, should be made by responsible and intelligent persons is an illustration of the manner in which the

question has been discussed in the state. An impartial consideration of the evidence leads to quite the opposite conclusion. In territorial days, with the exception of the period from 1872 to 1879, mines and mining claims were entirely exempt from taxation. The territorial legislatures showed their solicitude for the mining industry, not only by exempting it from taxation, but by repeated memorials to Congress for legislation which would favor its development. Even the last territorial legislature in 1889 sent a memorial to Congress which is worth quoting, because it illustrates so well the spirit of solicitude referred to above. The memorial reads as follows:

“That the mining of minerals being the chief industry of our territory, and notwithstanding the fact that last year our mineral product approximated forty millions of dollars, we consider the industry practically in its infancy, and such being the facts it will be readily seen that we offer an almost unlimited field for the profitable investment of capital, and to that end we most respectfully urge favorable action by your honorable body upon Senate Bill 1176, and thus open the field to the free and untrammelled introduction of foreign capital for the purpose of further developing our mining industry.”

The above memorial was sent to Congress in 1889. The Constitutional Convention was held a few months later. A few of the men who sat in the last territorial legislature were delegates to the Constitutional Convention. The Committee on Taxation had among its members men whose loyalty to the mining interests cannot be questioned. It is inconceivable that such a Constitutional Convention should have been inspired by a desire to “penalize” the mining industry and to impose on it the whole burden of taxation. No evidence can be adduced to support such an interpretation. On the contrary, even the decision of the Supreme Court, quoted by Mr. Kelly in support of his contention, proves just the opposite. The Supreme Court specifically says that the problem before the Constitutional Convention was how to compel the mining industry to respond *to the reasonable demands* of the state for revenue, “and at the same time protect it against such exactions as would or might discourage prospecting or development.” The Court further says that the framers of the Constitution acted deliberately with the purpose of subjecting mines

and mining claims to what in their judgment was the "equitable proportion of the burden of governmental expense."

There is not the slightest reference in this decision to any desire to "penalize" the mining industry. The words of this decision are as clear as they can be. But there is on record another decision of the Supreme Court which throws additional light on the subject. In the case of the State versus Sing, 18 Montana, page 139, Justice De Witt of the Supreme Court of Montana said: "Mines and mining claims in the state are liberally protected from what might be deemed excessive taxation."

The opinions of the Supreme Court are sufficient proof of the real meaning and intent of the law on mine taxation. But it may not be amiss to quote the opinions of two citizens, of whom Montana is justly proud, and who on account of their intimate connection with all phases of Montana political life were in a peculiarly favorable position to know. The first quotation is from the message to the legislature delivered on January 7, 1901, by Governor J. K. Toole, and is as follows:

"It was the purpose of the framers of the State Constitution to stimulate the explorations and developments of our mineral resources, and to that end they exempted mining claims from taxation beyond the price paid to the United States for the same, and in lieu thereof subjected their net proceeds to taxation."¹

Governor Toole thought that the provision was "wise and salutary" contributing largely to the creation of great properties within the state. But another citizen of the state, one who is justly regarded among its founders and whose name and memory are cherished, took a different view on the subject. In his dedication speech on the completion of the new State Capitol, Colonel W. F. Sanders took occasion to make the following statement:

"Claiming for these founders of our Commonwealth all that is their due, it were too much to affirm that they were not subject to the infirmities of human nature and made no mistakes. To the end that they might be corrected, they would choose that the more important of them be mentioned even on a congratulatory occasion like this. *With the cour-*

¹ Italics mine.

*age which was a conspicuous trait in their character to assist a hazardous, hopeful infant industry, they took upon themselves a portion of its burdens by absolving it from its share of taxation.*¹ When thus delivered the interest and amount was small, but it has now grown to colossal proportions and is one of our chiefest and most remunerative resources. But the advantage thus given has not been relinquished, and *what in its nature and purpose was designed to be temporary, by the forethought and adroitness of greed, has been taken from the domain of legislation and become inwoven in constitutional enactment as a permanent policy of the state.*¹ It does not require a wide knowledge of human nature to discern that when the ownership of private property does not carry with it the equal burden which that ownership implies, a disregard of the sanctities of title is begotten, which may wreak abounding mischief. Absolute equality of taxation of property is the primal essential of justice unless it is desired to cultivate a superior class to own the property and a proletariat or peasantry to become their serfs. The irony of the situation is not belittled by the fact that the property so absolved from taxation in the nature of things makes disproportionate and increasing demands on the money and solicitude of the Commonwealth. Matters will not assume a normal condition until a Constitutional provision ordains that every piece of property not of Public Ownership shall according to its value bear its equal burden of taxation. This seems too plain to admit of discussion.”²

Governor Toole and Colonel Sanders are not to be classed among “the agitators.” Their opinion corroborates the interpretation placed upon the law by the courts. Their statements are additional evidence that the intent of the Constitution was not to “penalize” the mining industry but to encourage it.

¹ Italics mine.

² *Historical Society of Montana*, Vol. IV, pp. 141-2.

CHAPTER IV.

TAXES PAID BY MONTANA MINES.

The representatives of the mining interests maintain that "the mining industry in this state has heretofore borne its proportionate share of the taxes of the state."¹ Others deny it. The question cannot be answered by mere quotations of opinion on either side. To reach a definite conclusion, the known facts in the case must be summoned to furnish the evidence.

The basis of taxation is the assessment of property. Under the general property tax all property, real and personal, pays a uniform rate on its assessment. Under the laws of Montana, the net proceeds of mines are personal property and are taxed at the same rate as other personal property in the state. A comparison of the assessment of different classes of property may serve as an indication of the burden of taxation borne by the respective kinds of property.

The abstracts published by the State Board of Equalization on the basis of the reports sent in by the county assessors do not classify the data in sufficient detail. In many counties all or a large part of the land is unclassified, and improvements are lumped under one heading. To obtain an exact classification of the total assessment of the state by kinds of property or industries is therefore impossible. But the official figures which are at present available and the statistics collected by the present Temporary Tax and License Commission enable one to calculate the assessment of certain industries closely enough to make some valid comparisons. The following tables are based on such figures obtained from the State Board of Equalization, from reports of assessors, and from the data collected by the Temporary Tax Commission. In these tables, the assessment of mining includes the assessment of mining claims and improvements thereon, coal lands and improvements thereon wherever separately stated, mining ditches, smelters and smelter lands, stored ore and bullion, all mining and

¹ C. F. Kelly, *Mining Taxation in Montana*, p. 4.

manufacturing machinery, and net proceeds. It is true that here and there a county assessor may not report separately the improvements on mining claims. But this is offset by the items included in the above classification which credits mining with all the assessed manufacturing machinery in the state and with a part of the farming machinery which some assessors neglect to enter separately. On the basis of these data it is possible to compare the assessment of the chief classes of property in Montana for various years. Table I presents the assessment of farming and grazing lands and of mining in relation to the total valuation of the state for the years 1917-1918.

TABLE I

Kind of property	1918		1917	
	Total assessment	Per cent of total	Total assessment	Per cent of total
All property in state.....	\$589,304,187	100.	\$582,286,529	100.
Farm and grazing lands and improvements	191,792,730*	32.5	178,033,237*	30.6
Mining inclusive of net proceeds	36,162,436†	6.2	62,012,058†	10.6

* These figures were obtained by adding the following items: (a) the assessment of farm and grazing lands as reported by the State Tax Commission; (b) 50 per cent of the assessed improvements on all such lands; this is a very conservative estimate of the assessed value of improvements which may unqualifiedly be credited to farming and grazing lands, and (c) the assessed value of improvements on lands title to which is vested in another than person so listing it.

† The totals for mining include the assessed valuation of the smelters at Anaconda and Great Falls which were reported to the State Tax Commission as equal to \$6,680,000 and to \$8,795,000 in 1917 and 1918 respectively. These figures probably include other improvements owned by the mining companies and therefore offset omissions of some mining properties not properly listed by the assessors. Though the figures in Table I contain such estimates, they have a comparative value.

It is difficult to separate farm and grazing lands from all other real estate for the years preceding 1917. But the assessment of several other classes of property is ascertainable and is presented in Table II.

MINE TAXATION IN MONTANA

TABLE II

Year	Total valuation of state	City and town lots and improvements	Railroads	Livestock	Mining inclusive of net proceeds†
1917	\$582,286,529	\$89,586,247	\$87,651,336	\$65,685,652	\$62,012,058
1916	487,898,353	81,297,786	85,816,429	52,384,484	43,710,854
1915	439,785,918	79,237,366	84,740,925	46,236,493	24,759,863
1914	412,361,919	76,201,650	80,386,550	40,009,275	26,178,435
1913	382,807,277	72,314,101	77,965,590	38,377,221	27,759,234
1912	346,550,585	68,632,991	68,481,299	33,900,269	26,405,702
1911	331,670,418	66,957,014	66,975,126	35,139,271	20,341,953
1910	309,673,699	62,250,560	65,696,246	37,123,378	21,147,666
1909	280,401,064	58,537,087	58,422,849	36,864,680	19,663,386
1908	248,774,792	53,899,318	45,942,989	33,013,809	16,802,228
1907	251,882,437	52,228,494	43,816,035 *	32,531,152	30,644,620
1906	233,953,571	48,043,382	41,914,936 *	32,137,547	29,903,724
1905	209,912,340	46,161,301	37,826,193 *	31,333,144	20,776,069
1904	201,748,063	45,940,426	37,714,176 *	28,892,629	18,567,813
1903	201,333,315	45,213,051	36,327,585 *	35,812,871	17,909,233
1902	185,725,657	44,290,131	32,772,594 *	32,561,515	15,775,938
1901	166,787,593	42,138,515	16,259,424 *	28,264,217	24,381,382
1900	153,401,594	39,895,823	15,612,936 *	26,281,473	22,002,224
1899	142,117,655	38,700,114	15,584,453 *	23,705,794	16,255,197
1898	133,969,519	36,947,697	14,398,881 *	22,229,761	14,987,525

† It was possible to obtain the assessed value of the smelters at Anaconda and Great Falls for 1913 and 1914, which was \$5,379,000 and \$5,483,000 respectively and for 1917-1918 as indicated in Table I. For the years 1898-1906, the value of the smelters in this table was taken as equal to the reported value of improvements on real estate (other than city and town lots) in Cascade and Deer Lodge counties which rose from \$2,717,000 in 1898 to \$4,429,000 in 1906. For the years 1907-1912 for which such figures are not available the assessed value of the smelters was taken as equal to \$5,000,000, and for the years 1915-1916 as equal to \$6,000,000 and \$6,500,000 respectively. In all these estimates the mining industry is given the benefit of the doubt in order to offset any underestimation which may have resulted from inadequate classification by assessors. On the whole the figures are believed to give a comparative view of the situation.

* Includes depots, but does not include railroad lands or other railroad property.

These figures may be more easily grasped when reduced to five year averages which are given in Table III.

TABLE III.

Period	Average annual assessment of state	Average annual assessment of city and town lots and improvements	Average annual assessment of railroads	Average annual assessment of livestock	Average annual assessment of mining inclusive of net proceeds
1913-1917	\$461,027,999	\$79,727,430	\$83,312,166	\$48,538,625	\$36,884,089
1908-1912	303,414,111	62,055,394	61,103,722	35,208,281	20,872,187
1903-1907	219,765,944	47,517,331	39,539,785	32,141,468	23,560,292
1898-1902	156,400,402	40,394,456	18,925,657	26,608,552	18,680,453

The above table shows that during the twenty years under consideration the average valuation of the state increased about three times; that the assessment of railroads was over four times larger during 1913-1917 than during 1898-1902, but that the greatest increase in the assessment of railroads occurred between 1901 and 1903; and that city realty, livestock and mining were assessed about twice as high during 1913-1917 as during 1898-1902. Confining the comparison to the fifteen years 1903-1917, one finds that while the assessment of railroads increased as rapidly as the total valuation of the state, such classes of property as livestock, mining, and city realty did not quite keep pace with the general movement. As the one other large class of property in the state is farming and grazing lands and improvements thereon, it would seem that the increase in the assessment of such lands must have been more rapid than the average increase in the total assessment of the state. This can be explained in considerable measure by the steady growth of agriculture in the state since 1900. But there can be little doubt that this disproportionate increase is to some extent the result of inadequate tax administration. For instance, in the case of livestock, a comparison of the assessments in Montana with the true valuations calculated by the U. S. Department of Agriculture shows that in 1906 the assessment of livestock was over 60 per cent of reported true value, and that from 1910 to 1915 the assessment decreased from 49 to 44 per cent of reported true value. There was some increase in 1916 and 1917, but the trend for the fifteen years, 1903-1917, was in the direction of relatively smaller assessments of livestock which were not warranted by any corresponding decrease in the true value of livestock reported by the Department of Agriculture. It is probable that if figures were available for other classes of property, a similar condition would be revealed.

The facts shown in Table III may be made clearer by reducing the figures to a percentage basis as is shown in Table IV on the following page.

TABLE IV.

Class of property	Percentage of total assessment of state			
	1913-1917	1908-1912	1903-1907	1898-1902
Total assessment of state.....	100.	100.	100.	100.
City and town lots and improvements	17.3	20.5	21.6	25.8
Railroads	18.7	20.1	17.9	12.1
Livestock	10.5	11.6	14.6	17.0
Mining inclusive of net proceeds	8.0	6.9	10.7	11.9

Table IV shows that the assessment of railroads formed an ever larger percentage of the total assessment of the state from 1898 to 1912; but that during 1913-1917 the proportion decreased. On the other hand, the assessment of city real estate and livestock formed a constantly decreasing proportion of the total assessment of the state. This is in accord with the conclusions reached above.

The figures presented above show that no definite tendency can be discerned in the assessment of the mining industry. It varies from year to year and from period to period. This is the result of the method of assessing mines which makes the net proceeds the most important item in the valuation of a mine. The wide range of the fluctuations to which the assessment of the net proceeds of mining is subject may be seen from the fact that in 1918 the total net proceeds of the state were equal to \$17,355,196 as against \$45,519,461 in 1917. The decrease thus amounted to \$28,164,265 or about 62 per cent. A more detailed statement of the fluctuations in the assessment of net proceeds is presented in Table V which follows.

TABLE V.

Year	Total assessment of state	Mining claims filed or patented	Improvements on same	Net proceeds	Per cent of net proceeds of total assessment of state
1917	\$582,286,529	\$720,998	\$1,709,134	\$45,519,461	7.8
1916	487,898,353	725,778	1,462,475	28,605,355	5.9
1915	439,785,918	669,843	1,478,295	10,855,342	2.5
1914	412,361,919	655,625	1,409,546	11,517,166	2.8
1913	382,807,277	634,072	1,287,905	14,509,695	3.8
1912	346,550,585	590,634	1,285,423	12,116,283	3.5
1911	331,670,418	650,807	1,354,320	6,203,590	1.9
1910	309,673,699	641,682	1,389,990	8,117,602	2.6
1909	280,401,064	594,329	1,323,805	6,983,713	2.5
1908	248,774,792	515,801	1,216,717	4,731,884	1.9
1907	251,882,437	632,496	1,139,977	20,358,119	8.1
1906	233,953,571	600,432	1,315,360	19,264,423	8.2
1905	209,912,340	528,679	1,231,377	10,532,425	5.1
1904	201,748,063	444,863	1,411,327	7,861,624	3.9
1903	201,333,310	402,137	1,381,927	8,056,355	4.0
1902	185,725,657	407,440	1,908,928	5,948,558	3.2
1901	166,787,588	407,325	1,918,014	16,281,271	9.8
1900	153,401,594	411,690	2,140,466	14,168,708	9.2

The fluctuations in net proceeds are chiefly the result of general market conditions, prices, cost of production, labor troubles, etc. But the total amount of net proceeds in any one year may also be affected by the amount of development work and improvements carried out by the mining companies. As the law allows the deduction of all sums spent in this way from gross proceeds, it may happen that even during a prosperous year the amount of net proceeds should be considerably reduced by such work of development and expansion. This is clear from Table VI which shows the manner in which the proportion of net to gross proceeds fluctuates.

TABLE VI.

	1916	1915	1914	1913	1912
Gross proceeds of mines in Montana*.....	\$145,325,000	\$87,000,000	\$47,849,747	\$61,900,546	\$64,754,613
Net proceeds assessed	28,605,355	10,855,342	11,517,166	14,509,695	12,116,283
Per cent.....	19.6	12.4	24.07	23.4	18.7

* Includes gold, silver, copper, lead and zinc mines.

It is also clear from the above tables that the assessment of the surface and improvements of mines is largely nominal. It amounted to \$2,552,156 in 1900 and to \$2,188,253 in 1916. Even the assessment of the surface, improvements, smelters, mining ditches, and all machinery (including that in manufacturing establishments) yields a small total indeed: \$13,249,539 for 1913; \$14,661,269 for 1914; \$13,904,521 for 1915; \$15,105,499 for 1916; and \$16,492,597 for 1917. These figures refute the claim that the mining industry would be adequately taxed if only the surface and the improvements were assessed. On the contrary, these figures show that the assessment of the mines, exclusive of net proceeds, is not comprehensive and does not represent the real value of the mining industry. This becomes clearer when it is remembered that the surface and improvements, including machinery, of all mines in Silver Bow County, which produces all but a small part of the mineral output of the state, were assessed at \$2,512,390 in 1913; \$2,546,905 in 1914; \$2,670,765 in 1915; \$2,701,990 in 1916; and at \$3,269,570 in 1917.

The figures for 1918 confirm the statements made above. The assessment of the mining industry is again below that of the preceding two years, 1917 and 1916. The decrease is the result of a sharp decline in the net proceeds which in 1918 amount to \$17,355,196 as against \$45,519,461 in 1917 and \$28,605,355 in 1916. As a result, the proportion of mining assessment to the total assessment of the state is much lower than in 1917 and 1916, and the percentage of the total assessment borne by other classes of property is increased proportionately.

The assessment of different classes of property is the only available index of the comparative burden of taxation borne by such property. No data are accessible which would show either the amount of taxes paid by different classes of property or their respective earnings. The Tax Investigation Committee appointed by the legislature in 1917 attempted such a comparison for the year 1916 and prepared a table for that purpose, which appears on the following page.

TABLE VII.

Property or industry	Assessed valuation	Per cent of total assessment of state	Gross proceeds	Net proceeds	Total taxes paid for all purposes
Railway industry (2 counties missing)	\$ 83,939,723	15.29	\$ 60,199,998	\$28,270,875	\$2,335,047
Other railroad property.....	13,229,672	2.71	none	none	288,019
Mining industry (including net proceeds)	41,856,095	8.57	146,500,000	28,605,355	1,292,296
All mining property	42,918,260	8.79	.....	.....	1,325,792
Livestock and wool Farm lands and improvements.....	52,384,484	10.73	54,187,960	.....	.....
Banks	156,818,411	32.14	81,154,190	.....	.....
Telephone Co.'s.....	11,412,391	2.33	.....	.....	.....
Telegraph Co.'s.....	1,364,319	0.279	.....	.....	50,471
Express Co.'s.....	570,113	0.117	.....	.....	14,722
Power Co.'s.....	157,784	0.032	.....	174,853	5,446
	10,140,412	2.078	.....	.....	287,523

On the basis of these figures obtained by the Tax Investigation Committee it is possible to make a few comparisons as is shown in Table VIII.

TABLE VIII.

Property or industry	Amount of taxes paid on		
	\$100 of assessed valuation	\$100 of gross proceeds	\$100 of net proceeds
Railway industry (2 counties missing)	\$2.70	\$3.88	\$8.25
Telephone companies	3.69	.....	.....
Express companies	3.45	.....	3.11
Power companies	2.83	.....	.....
Mining industry (inclusive of net proceeds)	3.08	.882	4.51

The only valid comparison which may be made on the basis of the above table is that of the amount of taxes paid on every hundred dollars of net proceeds. Table VIII shows that the mining industry compares well in this respect with the express companies, but that it lags behind the railroads. This table

confirms in another way the conclusions reached above by comparing the assessments of these industries. The data at hand do not permit comparisons with other classes of property within the state.

The relative tax burden borne by the mining industry in Montana may also be gauged by comparing conditions in the principal mining states of the country. As all mines must compete in the same market, the comparison is entirely justified. The figures presented in the following tables are taken from L. E. Young's *Mine Taxation in the United States* and are for the year 1909. In view of the predominance of one or the other mineral in various states, the figures are compared for different classes of mines separately as follows:

TABLE IX. COPPER MINES.

State	Value of product	Expenses not including taxes	Surplus before taxes are paid	Taxes paid	Per cent of surplus paid in taxes
Michigan	\$30,165,443	\$23,508,650	\$6,656,793	\$950,821	14.28
Idaho	416,086	300,866	115,220	9,674	8.42
Arizona	31,614,116	24,979,482	6,634,634	404,046	6.09
Montana	45,960,517	37,678,032	8,282,485	395,577	4.78
Utah	8,843,099	.....	2,082,984	66,190	3.18

TABLE X. GOLD AND SILVER MINES.

State and class of mines	Value of product	Expenses not including taxes	Surplus before taxes are paid	Taxes paid	Per cent of surplus paid in taxes
DEEP MINES—					
Montana	\$ 3,002,328	\$ 2,978,814	\$ 23,514	\$ 17,309	73.63
California	9,690,956	9,344,688	346,268	122,656	35.43
Idaho	7,926,602	6,439,546	1,487,058	143,237	9.63
Nevada	17,807,945	11,391,815	6,416,130	212,663	3.32
Utah	8,541,522	5,980,378	2,661,144	84,125	3.16
GOLD PLACERS—					
Oregon	159,002	117,559	41,443	3,238	7.81
Colorado	448,586	248,521	200,065	13,111	6.56
Montana	502,653	398,296	104,357	4,988	4.78
California	8,751,032	5,517,855	3,233,177	91,000	2.82

The above tables show that at least in the year 1909 the tax burden borne by the mining industry as a whole was lighter in Montana than in Michigan, Arizona, Colorado, and in a number of other states which are inferior to Montana in the amount of either gross or net earnings from mines. The statistics also reveal the fact that the tax burden in 1909 fell most heavily on gold and silver deep mines, while it was much lower for copper mines than for the mineral industry of the state as a whole.

Several of the states which show a relatively low percentage of taxes paid to surplus in the above tables have since recognized that their mines were not bearing their share of the tax burden. The Utah Board of Equalization in its biennial report for 1915-16 wrote that the producing mines in the state were "paying less taxes, according to their values, than are the mines of any other state in the Union, far less than their fair share of the public burden."¹ The Colorado State Tax Commission in its report for 1916 demanded that mines be assessed as all other property at their "true cost value."² The greatest step forward, however, has been made in Arizona where the State Tax Commission has for the past five or six years applied its greatest efforts to the problem of mine taxation. The assessment of mines in Arizona increased from \$45,145,084 in 1912 to \$216,879,796 in 1916; it formed 31.7 per cent of the total valuation of the state in 1912, and 44.2 per cent in 1916. The relative assessment of the industry in the two states in 1916 may be presented in the following table.

TABLE XI.

	Montana	Arizona
Gross proceeds from mines.....	\$146,500,000	\$ 82,036,342
Net proceeds reported.....	28,605,355	41,845,604
Assessed valuation of mining.....	43,710,854	171,888,616*
Assessment per \$100 of gross proceeds.....	29.8	209.5
Assessment per \$100 of net proceeds.....	152.8	410.8

* Producing mines only.

¹ *Boards of Equalization of Utah, Report for 1915-16*, p. 73.

² *State Tax Commission of Colorado, Reports for 1916*, p. 13.

Comparing the proportion of the assessed valuation to net proceeds only, one finds that in 1916 the mines of Arizona were assessed about three times as heavily as the mines of Montana. The significance of this comparison is enhanced by the fact that some of the mines in Arizona and Montana are under the same ownership and control.

CHAPTER V.

WHAT IS "NET PROCEEDS"?

Net proceeds form the most important single item in the total assessment of the mining industry in Montana. This condition makes it imperative to form a clear idea as to the meaning and nature of "net proceeds." Some use the term in the sense of net profits. The representatives of the mining industry are vigorous in drawing a distinction between net proceeds and net profits, but they give no definition of the former.¹ It is necessary to attempt an elucidation of the term in order to free the discussion of obscure elements.

The modern science of accounting does not use the term "net proceeds." In any profit and loss account, which a well conducted firm or corporation would prepare, the items would include gross earnings, cost of manufacture or operation, gross profits, net profits, fixed charges, etc. Of course the form of accounting is usually adjusted to each particular business in order to express the essential facts. Accountants strive to maintain flexibility in their systems, and the forms used by them vary from business to business.² But there is a general scheme which underlies all accounting forms. An idea of the essential elements of an income account may be obtained from an examination of the statements reproduced below. Statement I is the income account of the Westinghouse Electric and Manufacturing Company for the fiscal year ending March 31, 1911.

Gross Earnings (shipments billed).....	\$38,119,312.01
Cost of Shipments (factory costs including all expenditures for patterns, dies, new small tools, and other betterments and extensions; also inventory adjustments and all selling, administrative, general and development expenses)	32,510,546.87
<i>Net Manufacturing Profits</i>	<u>\$ 5,608,765.14</u>

¹ L. O. Evans, *Butte Miner*, March 14, 1918.

² H. R. Hatfield, *Modern Accounting*, p. 278.

Other Income:

Interest and Discount.....	272,055.25
Dividends and Interest on Sundry Stocks and Bonds Owned	615,299.40
Miscellaneous Royalties, etc.	628,177.13
	\$ 1,515,531.81
Total Income	\$ 7,124,296.95

Deductions from Income:

Interest on Bonds and Debentures.....	\$ 1,076,553.71
Interest on Collateral Notes.....	416,000.00
Miscellaneous Interest	92,933.04
Property and Plant Depreciations Charged Against the Income	531,668.19
Proportion of Expenses Incidental to Bond and Note Issues	76,666.66
Miscellaneous	209,369.37
	\$ 2,243,190.97
Net Income—Surplus for the Year.....	\$ 4,881,105.98 ¹

Statement II is a recent income statement of the Union Pacific Railroad Company which follows the form prescribed by the Interstate Commerce Commission.

Freight Revenue	\$59,253,344
Passenger Revenue	18,817,047
Mail, Express and all other Transportation Revenue.....	6,726,317
Incidental Revenue	2,161,587
Total Revenue	\$86,958,295
Maintenance of Way and Structures.....	\$10,900,925
Maintenance of Equipment.....	12,101,212
Total Maintenance	\$23,002,137
Traffic Expenses	2,061,971
Transportation Expenses	23,108,140
Miscellaneous Operations Expenses.....	1,313,189
General Expenses	2,811,421
Transportation for Investment-credit.....	160,143
Total Operating Expenses.....	\$52,136,715
Taxes	4,641,474
Total Operating Expenses and Taxes.....	\$56,778,474
Revenues over Operating Expenses and Taxes.....	\$30,180,106
Other Operating Income.....	1,296,138

¹ Ch. W. Gerstenberg, *Materials of Corporation Finance*, pp. 629-30.

Total Operating Income.....	\$31,456,244
Fixed and Other Charges.....	15,028,285
<hr/>	
Surplus from Transportation Operations after deducting all Fixed and Other Charges.....	\$16,427,959
Income from Investment and Other Sources.....	11,964,064
<hr/>	
Total Surplus	\$28,392,023
Less Dividends on Preferred Stock at 4% per Annum.....	3,981,740
<hr/>	
Surplus after Deducting Dividend on Preferred Stock.....	\$24,410,283
Equivalent on Common Stock to.....	10.98%
Amount Required to pay Dividend on Common Stock at rate of 8% per Annum.....	17,783,328
<hr/>	
Surplus after Deducting all Fixed and Other Charges and Dividends on Preferred and Common Stock.....	\$ 6,626,955

An analysis of the above two statements shows the essential elements of any profit and loss account. A well known writer on corporation finance has presented them in the following abstract form:

1. State gross earnings.
2. Deduct operating or manufacturing expenses including selling, administrative, maintenance, and depreciation.
3. The result is net earnings from operation.
4. Add income from other sources.
5. The result is total net income.
6. Deduct taxes, interest, rentals, sinking fund charges, and other fixed charges.
7. The result is surplus for the year applicable as earnings on shareholdings.
8. Deduct preferred dividends.
9. Deduct common dividends.
10. The result is surplus from the year's operation to be credited to surplus account.¹

Necessarily, the character of the statement will depend upon what is included in each item. The Westinghouse Company, for instance, includes betterments and extensions in its manufacturing costs. Accountants generally agree that betterments and extensions which are of a "substantial and permanent character"

¹ William H. Lough, *Business Finance*, pp. 417-8.

should be included in capital account.¹ This is an item which varies frequently. The other items are more or less alike in all statements.

Regardless of the differences in the nature of the mining industry, the income statements of the principal mining corporations of the country differ but slightly, if at all, from the general form outlined above. For purposes of illustration it is desirable to present statements of several mining companies.

RAY CONSOLIDATED COPPER COMPANY.

Statement of Operations for the year ended December 31, 1917.

Operating Revenue:

Copper produced	\$21,246,999.16
Silver produced	6,518.46
Gold produced	24,553.28
	<hr/>
	\$21,278,070.90

Operating Expenses:

Mining and Milling.....	\$ 7,053,242.72
Treatment, Refining, and Freight.....	3,586,419.08
Selling Commission	214,312.92
Mine Development Extinguishment.....	445,440.50
	<hr/>
	\$11,299,415.22

Net Income from Operation plus Depletion.....\$ 9,978,655.28

Miscellaneous Income:

From Investments	\$ 572,481.46
Sundry Income	65,165.68
	<hr/>
	\$ 437,647.14

\$10,416,302.82

Other Charges:

For Plant Alterations, Replacements and Abandonments \$	521,081.68
For Adjustment of Charges to Development Account....	194,051.20
	<hr/>
	\$ 715,133.08

Balance to Surplus Account.....\$ 9,701,169.74

Surplus from Operations.

Balance December 31, 1916.....	\$13,813,177.68
Net Income and Proceeds of Depletion.....	9,701,169.74
	<hr/>
	\$23,514,347.42

¹ Hatfield, *op. cit.*, p. 73.

WHAT IS "NET PROCEEDS"

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Dividends	\$ 5,835,562.30
Capital Distribution	788,589.50
	<hr/>
	\$ 6,624,151.80
	<hr/>
Balance December 31, 1917.....	\$16,890,195.62

NEVADA CONSOLIDATED COPPER COMPANY.

Statement of Operations for the year ended December 31, 1917.

Operating Revenue:

Copper produced	\$18,484,271.24
Silver produced	767,750.41
Net Proceeds from Sale of Carbonate Ore.....	27,691.06
	<hr/>
	\$20,279,722.71

Operating Expenses:

Mining including Proportion of Shipping Expense.....	\$ 3,374,254.87
Freight on Ore.....	1,101,810.20
Milling	3,039,442.35
Smelting	2,161,279.67
Depreciation on Steptoe Plant.....	650,255.20
Freight and Refining.....	1,112,222.49
Selling Commission	196,110.55
	<hr/>
	\$11,635,375.33

Net Income from Operations plus Depletion.....\$ 8,644,347.38

Miscellaneous Income:

Dividends on Investments.....	\$ 825,000.00
Interest on Bonds.....	33,874.99
Interest	140,249.77
Cash Discounts on Purchases.....	11,978.58
Rents, Miscellaneous Income, etc.	281,147.95
	<hr/>
	\$ 1,293,251.29

Total from all sources—to surplus account.....\$ 9,937,598.67

Surplus from Operations.

Balance December 31, 1916.....	\$12,353,643.04
Net Income and Proceeds of Depletion.....	9,937,598.67
	<hr/>
	\$22,291,241.71

Ore Extinguishment—12 Months ended December 31, 1917..	\$12,353,643.04
Depreciation of Mine Equipment.....	39,597.34
Plant Alterations, Replacements, and Abandonments.....	528,705.95
Dividends	7,298,018.05
Capital Distribution	999,728.10
	<hr/>
	\$ 9,110,715.00

Balance December 31, 1917.....\$13,180,525.00

MINE TAXATION IN MONTANA

BUTTE AND SUPERIOR MINING COMPANY

*Comparative Income Account for 1917.**Income:*

Spelter, Zinc and Lead Concentrates and Residues.....	\$ 7,817,674.25
Less Freight	1,100,237.11
	<hr/>
	\$ 6,716,437.14

Operating Costs and Expenses:

Mining	\$ 2,537,575.70
Milling	1,265,312.27
Other Charges, Shut Down Expenses, etc.....	566,053.29
	<hr/>
Total Operating Costs and Expenses.....	\$ 4,368,941.26

<i>Gross Profits on Operations</i>	\$ 2,347,495.88
<i>Reserves for Depreciation and Depletion</i>	\$ 1,941,129.65

Net Profits on Operation.....	\$ 406,366.22
Other Income	103,191.03

Total Income	\$ 509,557.25
Reserve for Excess Profits and Income Taxes, Contingencies, etc.	236,646.72

Net Income	\$ 272,910.53
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The above statements agree in essentials. None of them contain the term "net proceeds." It is not merely a matter of terminology. There is in fact no single item in any of the above income accounts which exactly corresponds to what is termed "net proceeds" in the Montana law. This can be made clearer by presenting in outline form the statement of net proceeds which the owner of a Montana mine is required to make. It is as follows:

Statement of Net Proceeds:

State gross yield or value (number of tons at.....per ton of ore).

- Deduct:*
1. Total cost of extracting and milling;
 2. Total cost of transportation to place of reduction or sale;
 3. Total cost of reduction;
 4. Cost of selling;
 5. Total cost of improvements on buildings and in the workings of the mine.
 6. Total cost of construction of mills for mines and of reduction works used and operated in connection with mines (which were built during the year).

Add: Salaries of persons or officers not actually engaged in the working of the mine;

The result is—Net Proceeds.

It is clear that the "net proceeds" in the above statement are computed in a manner which is not followed by any mining company in its ordinary accounting. The Montana law allows a full deduction of all improvements and extensions made in any one year, but it does not include in operating expenses salaries of officers not engaged in the workings of the mine. Net proceeds cannot, therefore, correspond to net operating profits. For the same reason, net proceeds cannot agree in any one year with "net income." The Montana law provides for the extinguishment of all capital expenses made in any one year. The general method of accounting consists in deducting depreciation and depletion charges gradually during a number of years.

In the long run, however, it would seem that the effect of the Montana law is to make net proceeds correspond more or less to net income. An examination of the income statements of the various mining companies presented above shows, that if one should sum up the "net income from operations" for the entire life-period of a mine and then deduct from that sum the total of all depreciation and development charges, the result would be approximately the total "net proceeds" of the mine during its entire life. The difference would be the amount paid out in salaries to officers not actually engaged in the working of the mine and the total amount of depletion charges which the Montana law does not provide for.

Even in the long run, however, "net proceeds" would not necessarily equal total income. If a mining company should invest part of its surplus for one or more years in some other business, in railroad securities for instance, the income from such investments, though originally derived from mining operations, would swell the dividends, but would have no effect on net proceeds. The latter would, therefore, tend to fall below the total income. On the other hand, for reasons indicated above, net proceeds would tend to be above the net operating income. If properly and accurately accounted for, net proceeds would, therefore, fall between operating and total income without quite being equal to either.

The peculiar method used for the computation of net proceeds is responsible for the divergent views on the subject quoted at the beginning of this chapter. Strictly speaking, net proceeds are not net income. As a matter of fact, in the long run they approach net income from operation so closely as to justify their identification with such net income.

CHAPTER VI.

THE ANACONDA COPPER MINING COMPANY.

No discussion of mine taxation in Montana would be complete without special consideration of the case of the Anaconda Copper Mining Co. In the popular mind the mining industry in Montana and the Anaconda Copper Mining Company are identical, and the facts fully justify the dominating position which the Anaconda Copper Mining Company occupies in the discussion of mine taxation. According to the reports published annually by the United States Geological Survey, the mines of the Anaconda Copper Mining Company produce nine-tenths of all the copper, about two-thirds of the silver, and a considerable part of all the gold of the state. The figures for the four years 1913-1916 are presented in Table XII, and indicate sufficiently the extent of the mining operations of the Company.

TABLE XII.

Year	Copper in pounds		Silver in fine ounces		Gold in fine ounces	
	Total in state	Produced * by A. C. M. Co.	Total in state	By A. C. M. Co.	Total in state	By A. C. M. Co.
1916	352,928,373	307,395,092	16,494,366	10,790,705	220,130	92,099
1915	267,231,014	235,076,289	14,378,437	8,064,986	242,077	106,702
1914	233,229,640	205,298,531	12,016,460	7,221,815	199,203	99,650
1913	287,828,699	241,983,323	13,819,201	8,719,132	168,994	64,898

* Produced from the mines of the Company. See reports on Mineral Resources by the United States Geological Survey, 1913-1917.

The dominant position of the A. C. M. Co. in the mining industry of Montana is also revealed by a comparison of the net proceeds assessed in the state. The figures for the fifteen years from 1903 to 1917 are as follows:

MINE TAXATION IN MONTANA

TABLE XIII.

Year	Total net proceeds of mines assessed in Montana	Net proceeds of A. C. M. Co. assessed	Per cent of total
1917	\$45,519,461	\$36,010,543	79.1
1916	28,605,355	14,628,787	51.1
1915	10,855,342	6,828,160	62.9
1914	11,517,166	8,613,565	74.8
1913	14,509,695	11,446,902	78.8
1912	12,116,283	10,525,730	86.8
1911	6,203,590	5,097,433	82.1
1910	8,117,602	6,413,501	79.0
1909	6,983,713	4,880,355	69.9
1908	4,731,884	3,374,211	71.3
1907	20,358,119	16,174,755	79.4
1906	19,264,423	14,247,111	73.9
1905	10,532,425	8,692,244	82.8
1904	7,861,624	6,240,024	79.3
1903	8,056,355	6,486,532	80.5

To compare the burden of taxes borne by the A. C. M. Co. with that of other property in the state, it is convenient at first to compare the assessment of the Company with that of other property. Table XIV contains the figures which bear upon the subject for the fifteen years from 1903 to 1917.

TABLE XIV.

Year	Total assessment of state	Assessment of A. C. M. Co.	Per cent of total
1917	\$582,286,529	\$55,606,347	9.5
1916	487,898,353	31,310,993	6.5
1915	439,785,918	22,356,370	5.1
1914	412,361,919	24,057,993	5.8
1913	382,807,277	26,550,066	6.9
1912	346,550,585	25,300,178	7.3
1911	331,670,418	19,724,101	5.9
1910	309,673,699	19,775,916	6.3
1909	280,401,064	18,449,940	6.6
1908	248,774,792	17,483,367	7.0
1907	251,882,437	28,238,022	11.2
1906	233,953,571	26,911,857	11.5
1905	209,912,340	20,332,451	9.7
1904	201,748,063	16,426,007	8.1
1903	201,333,310	16,583,667	8.2

This table shows that the properties owned by the A. C. M. Co. formed a greater proportion of the total assessment of the state in 1906 and 1907 than in any other year of the period under consideration. A more uniform tendency may be discerned by considering the average annual assessments for five-year periods as shown in Table XV.

TABLE XV.

Five-year period	Average annual assessment of state	Average annual assessment of A. C. M. Co.	Per cent of total
1913-1917	\$461,027,999	\$31,976,353	6.9
1908-1912	303,414,111	20,146,700	6.6
1903-1907	219,765,944	21,698,401	9.9

The above table shows that relatively to the total assessment of the state the A. C. M. Co. was assessed higher during 1903-07 than since and that the relative decrease in the assessment has amounted to three per cent. This is in accordance with the conclusion reached in Chapter IV that mining property has tended to form a decreasing proportion of the total assessment of the state.

The fluctuations in the annual assessments of the A. C. M. Co. are the result of variation in the net proceeds of the Company. For instance, in 1913 the net proceeds formed 43 per cent of the total assessment of the Company, but in 1915 they dropped to 30 per cent, while in 1916 they rose to 64 per cent. The same tendency was indicated for the assessments of the mining industry as a whole in Chapter IV.

The assessments presented above are the basis on which the A. C. M. Co. has paid taxes during the period considered. The taxes paid on net proceeds, timber lands, and other property during 1913-1917 are shown in Table XVI.

TABLE XVI.

Year	Total taxes paid by A. C. M. Co.	Taxes paid on net proceeds	Per cent of total	Taxes paid on timber lands	Taxes paid on other property
1917	\$2,086,005*	\$1,066,519	51.1	\$152,991	\$438,117
1916	979,622	483,756	49.4	141,556	354,309
1915	687,236	229,520	33.4	124,659	333,056
1914	675,738	250,156	37.0	127,513	298,069
1913	752,633	332,338	44.1	126,678	293,617

* Includes \$428,376 of one per cent corporation license tax paid to the State of Montana, according to the law passed in 1917.

The taxes indicated in the above table were paid for state, county, municipal, school, and all other purposes. By comparing these figures with the taxes paid in the state on all other property, the proportion of the tax burden borne by the A. C. M. Co. will become evident. There is no one report published by any of the departments of our state government which contains an exact statement of the total taxes paid for all purposes in Montana in any one year. The figures given in the following tables are calculated on the basis of the reports published by the State Examiner, State Superintendent of Public Instruction, and other state officers. Some of these figures were obtained from the office of the State Treasurer. There is no doubt that the figures fall somewhat below the total taxes paid in the state and therefore make the position of the A. C. M. Co. more favorable than it would be if the exact figures were known. The figures given for the A. C. M. Co. are exact and are taken from the pamphlets published annually by the Company. These figures are arranged in the following statistical tables. Table XVII presents the relative amounts of taxes paid during 1913-1917 for state purposes only.

TABLE XVII.

Year *	Total taxes paid to the state exclusive of corporation license tax			Corporation license tax		
	Total paid in state†	Amount paid by A. C. M. Co.	Per cent of total	Total paid by all cor- porations in state	Amount paid by A. A. C. M. Co.	Per cent of total
1917	\$1,944,806	\$155,698	8.0	\$786,446	\$428,376	54.5
1916	1,739,952	87,671	5.0	.....	.....	.....
1915	1,735,661	62,598	3.6	.....	.....	.....
1914	1,683,437	68,565	4.1	.....	.....	.....
1913	1,405,804	79,650	5.7	.....	.....	.....
Annual Average for 1913-1917	1,701,932	90,838	5.3	.....	.....	.....

* Fiscal year ending November 30.

† These figures were obtained from the records in the office of the State Treasurer. They include receipts from general fund, inheritance tax, and some license taxes. The latter are not uniformly entered and are therefore omitted in part.

The above table shows that the amount of taxes contributed by the A. C. M. Co. for purposes of state government decreased both absolutely and relatively from 1913 to 1915, and increased during 1916-17. The passage of the corporation license tax law, imposing a tax of one per cent on the net income of corporations raised the amount of taxes paid by the A. C. M. Co. considerably. In fact, under this law the A. C. M. Co. paid to the state about three times as much in license taxes as in property taxes. This was due to the prosperity of the Company during the year ending December 31, 1916. Combining the taxes paid under the general levy and on inheritance with the corporation license tax and with \$17,358 paid by private car and express companies, one obtains a total of taxes paid for state purposes, equal to \$2,748,630 out of which the A. C. M. Co. paid \$584,074 or 21.2 per cent. The corporation license tax has thus helped to raise the proportion of taxes paid by the A. C. M. Co. for state purposes from an average of about five per cent to twenty-one per cent; that is, it has increased it about four times.

However, the property and license taxes collected by the state government form but a small part of the total amount of taxes collected in the state. By far the largest part is collected by the counties, towns and cities for purposes of county and municipal government, for the maintenance of schools, for the building and repair of roads, for charitable needs, and for all other purposes which come within the scope of county and municipal government in the State of Montana. The total collected for all these purposes and the amount contributed by the A. C. M. Co. are presented in Table XVIII.

TABLE XVIII.

Year	Total taxes paid for county, municipal, school and other purposes, except for state government		
	Total paid in Montana *	Total paid by A. C. M. Co.	Per cent of total
1917	\$18,054,405	\$1,501,931	8.32
1916	15,220,609	891,951	5.86
1915	13,515,048	624,638	4.62
1914	11,705,037	607,173	5.19
Annual average for 1914-1917	14,623,775	906,423	6.19

* These figures were obtained by adding the following items: (1) receipts from taxes, licenses and permits, and trust and agency payments to cities

and towns as reported by county clerks to the State Examiner; (2) receipts from taxes as reported by the State Superintendent of Public Instruction; (3) general property taxes for Butte, Missoula, and Helena, as obtained from respective city officials; (4) license taxes for Missoula for all years and license taxes for Butte for 1917 and 1915 as reported by the Bureau of the Census. I made several unsuccessful attempts to obtain the figures for Great Falls. It was also impossible to make a proper estimate for 1913. These figures do not include improvement or other special assessments or any other government receipts.

It is possible on the basis of the available data to analyze more fully the taxes paid specifically for school purposes, as is shown in Table XIX.

TABLE XIX.

Year	Total school taxes paid *			General school taxes paid			Special and high school taxes paid		
	In Montana	By A. C. M. Co.	Per cent of total	In Montana	By A. C. M. Co.	Per cent of total	In Montana	By A. C. M. Co.	Per cent of total
1917	\$5,993,218	\$680,543	11.4	\$2,212,961	\$223,569	10.1	\$3,272,234	\$456,974	13.9
1916	5,167,565	408,540	7.9	1,834,955	125,243	6.8	2,895,261	283,296	9.8
1915	4,423,608	276,030	6.2	1,786,319	89,176	4.9	2,298,147	186,854	8.1
1914	3,998,175	265,123	6.6	1,588,353	94,831	5.9	2,099,604	170,291	8.1
Annual average 1914-1917	4,895,641	407,559	8.3	1,855,647	133,205	7.2	2,641,311	274,356	10.4

* Includes "Apportionment from County Tax," "Special Tax for General Fund," and "Special Tax for Interest and Sinking Fund" as reported by the State Superintendent of Public Instruction.

The above two tables show that the A. C. M. Co. paid from 4.6 to 8.3 per cent of all taxes other than state taxes and from 6.2 to 11.4 per cent of all school taxes. During the four years 1914-1917 the A. C. M. Co. paid an average of 8.3 per cent of all school taxes. It should be borne in mind that by far the greater part of the taxes paid by the A. C. M. Co. for county and school purposes are paid in the two counties of Silver Bow and Deer Lodge. For instance, in 1917 the A. C. M. Co. paid in those two counties \$567,704 in school taxes out of the total of \$680,543; in other words, over 83 per cent of all school taxes paid by the A. C. M. Co. in the state in 1917 went to support the schools in just those two counties. At least 75 per cent of all other taxes (except

those paid for the support of the state government) are paid in the same two counties.

In the above tables all taxes paid in the State of Montana were segregated according to the purpose for which they were paid. A general comparison of the total taxes paid for all purposes in Montana is shown in Table XX.

TABLE XX.

Year	Total taxes paid for state, county, school and other purposes		
	In Montana	By A. C. M. Co.	Per cent of total
1917	\$20,803,000	\$2,086,005	10.0
1916	16,960,500	979,622	5.8
1915	15,250,700	687,622	4.5
1914	13,388,475	675,738	5.0
Annual average for 1914-1917	16,600,669	1,107,247	6.7

Table XX shows that during the four years 1914-1917 the A. C. M. Co. paid from 5 to 10 per cent of the total taxes collected in the state, and that the average for the four years was 6.7 per cent. This then is the measure of the tax burden borne by the A. C. M. Co. in the State of Montana. As explained above, these figures are conservatively estimated. They are much lower than the estimate of the Temporary Tax and License Commission, whose report just published estimates the total amount of taxes collected in Montana in 1917 as equal to \$22,950,503. On the basis of this estimate of the Tax Commission, the A. C. M. Co. would have paid in 1917 only 9 per cent of the total taxes collected in the state.

The facts established by the statistical tables given above make it possible to examine more closely the burden of taxation borne by the Anaconda Copper Mining Company. As explained in Chapter III, the "rule of proportion," implied in the spirit and demanded by the letter of the law consists in apportioning taxes according to the market value of property and in accordance with ability as measured by actual or potential earning capacity. It

is legitimate, therefore, to compare the taxes paid by the A. C. M. Co. with its assets and net income.

It must be remembered, however, that the A. C. M. Co. is a composite organization embracing many different kinds of property in a number of states and in different countries. The subsidiary corporations of the A. C. M. Co. include the International Smelting Company, the International Lead Refining Company, the Rantan Copper Works, etc. Among its properties are coal mines in Wyoming, copper mines in Arizona, mines and railroads in South America, timber lands in Montana, brick plants, foundries, etc. The annual reports published by the Company cover all these properties in one balance sheet and in one profit and loss account.

Nevertheless, it is possible to obtain an idea of the extent of the property and of the operations of the Company in Montana. As indicated above, the A. C. M. Co. in 1917 paid \$428,376 in corporation license taxes to the State of Montana. This amount was one per cent of the net income of the Company from operations in Montana during the year ending December 31, 1916. This means that the total net income of the Company from operations in Montana in 1916 was at least \$42,837,600. The annual report of the Company for the year ending December 31, 1916, gives the total profit of the Company for 1916 as \$50,828,372. It is clear from these figures that the A. C. M. Co. obtained in 1916 84.3 per cent of its total profits from operations in Montana.

It is also possible on the basis of the available data to estimate the value of the Company's property in Montana. The balance sheet of the Company, as of December 31, 1916, shows assets equal to \$224,013,841, itemized as follows:

Fixed Assets:

Mines and Mining Claims, Coal Mines, Water Rights, and Lands for Reduction Works and Refineries, etc.	\$ 74,687,053
Buildings and Machinery at Mines, Reduction Works, Refineries, Sawmills, Foundries, Waterworks, etc.....	47,303,134
Timber Lands	5,499,957
Investments in Sundry Companies not entirely owned.....	18,936,375

\$146,426,520

Current Assets:

Supplies on hand and Expenses paid in advance.....	\$ 7,317,431
Merchandise held for sale.....	978,230
Metals in process and on hand—in process, at cost; on hand, sold at contract prices.....	37,225,804
Accounts Receivable and Cash.....	32,065,854
	<hr/>
	\$ 77,587,320
	<hr/>
	\$224,013,841

In a careful and most penetrating analysis of the financial statement of the A. C. M. Co. for 1916, Mr. W. R. Ingals has placed approximate values on the various properties of the Company.¹ According to Mr. Ingals, the mines and the metallurgical plants of the Company in Montana are worth at least \$47 per share which would mean a total value of \$109,568,750. The foundries, brick yards, lumber mills and public utilities are estimated at \$3,650,000. The timber lands of the Company are reported at \$5,499,957. Deducting the investments outside Montana from the total reported value of investments, one obtains a value of about \$5,000,000 for investments in Montana, such as the shares of Butte and Superior, etc. The total of all the figures quoted above is equal to \$123,718,707. The mining plants (surface works) are estimated at \$9,400,000. Thus, even remaining within the limits of the most conservative estimates, one must place the value of the properties held by the A. C. M. Co. in Montana at from \$124,000,000 to \$130,000,000. This means that the Company owns at least 85 per cent of its fixed assets in Montana. Applying the same proportion to total assets would result in a valuation of about \$190,000,000 for the total assets of the Company owned in Montana.

As the properties held by the A. C. M. Co. outside Montana have been acquired gradually during the past five or six years, the proportion of the Montana assets of the Company to its total assets must have been larger in the years preceding 1916. But assuming that the proportion has been the same and taking the minimum (i. e., 85 per cent) and keeping in mind also that the assessments for 1917 correspond most nearly to assets

¹ W. R. Ingalls, "Anaconda's Finances," *Engineering and Mining Journal*, June 16, 1918.

reported as of December 31, 1916, one may compare the assessments of the Company with its assets in the following table.

TABLE XXI.

Year	Total assets of A.C.M. Co.	Total assessment of A.C.M. Co.	Per cent of assessment of total assets	Estimated assets owned in Montana	Per cent of assessment of assets owned in Montana
1916-17	\$224,013,841	\$55,606,347	24.9	\$190,411,764	29.2
1915-16	174,785,526	31,310,993	17.9	148,567,697	21.1
1914-15	141,400,798	22,356,370	15.8	120,190,678	18.6
1913-14	124,559,174	24,057,993	19.3	105,875,297	22.7
Average 1914-17	166,189,835	33,332,926	20.1	141,261,359	23.6

Table XXI shows that during the four years 1914-1917 the A. C. M. Co. was assessed at from 18.6 to 29.2 per cent of its total estimated assets owned in Montana, and that the average annual assessment of the Company for this period was 23.6 per cent. It is generally agreed that the financial policies of the A. C. M. Co. are very conservative and that its reported assets are undervalued rather than overstated. In view of this, the reported assets may be taken as the approximate value of the properties owned by the Company, and its assessments appear thus to have averaged 23.6 per cent of estimated true value during 1914-1917. It should also be noted that while the net income of the A. C. M. Co. in 1916 from operations in Montana was \$42,837,600, its total assessment in 1917 was \$55,606,347; that is, the total assessment was only \$12,768,747 more than its income for the year. In other words, the net income of the Company was about 77 per cent of its total assessment.

More significant than the comparison of assessments and assets are the parallels drawn in the following table between taxes paid and the items of importance in the income account of the Company. The items selected are dividends paid and total net income. The term net income in this table and throughout this chapter means net profits obtained after deducting from total income all fixed charges.

TABLE XXII.

Items Compared	1916-1917	1915-1916	1914-1915	1913-1914	Total for the four years from 1913-14 to 1916-17
Taxes paid by A. C. M. Co.....	\$ 2,086,005	\$ 979,622	\$ 687,236	\$ 675,738	\$ 4,428,601
Total net income of A. C. M. Co.	50,878,372	16,695,807	8,789,588	11,323,498	87,687,265
Dividends paid by A. C. M. Co.	17,484,375	9,325,000	9,077,500	12,997,500	48,884,375
Taxes paid per \$100 of income	4.10	5.87	7.80	5.97	5.05
Taxes paid per \$100 of divid'ds	11.93	10.50	7.51	5.19	9.06

The figures in the above table show the taxes paid for the fiscal year ending November 30, while the income and dividends are computed for the year ending December 31. For instance, the A. C. M. Co. paid \$2,086,005 in taxes for the year ending November 30, 1917, while the profits of \$50,878,372 and the dividends of \$17,484,375 were for the year ending December 31, 1916. As the A. C. M. Co. charges all taxes paid to general operating expenses, it might be thought more proper to compare taxes paid to November 30, 1917, with profits made during the year ending December 31, 1917, and make similar comparisons for the preceding years. On the other hand, the assessment of the A. C. M. Co. on which it is taxed is made between March 1 and June 1 of each year, and presumably its assessment then corresponds more closely with the items in its financial report as of December 31 of the preceding year. The corporation license tax is collected on the income declared by the Company for its fiscal year preceding. In view of this condition, it was considered advisable to adopt the procedure followed in Table XXII. However, if comparisons were made between taxes and income for the same calendar year, the results would be less favorable to the A. C. M. Co., as may be seen from the following table.

TABLE XXIII.

Items compared	1917	1916	1915	1914	1913	Total for five years 1913-1917
Taxes paid by A. C. M. Co. for year ending Nov. 30.....	\$2,086,005	\$ 979,622	\$ 687,236	\$ 675,738	\$ 752,633	5,181,234
Net income of A. C. M. Co. for year ending Dec. 31.....	34,333,751	50,878,372	16,695,809	8,789,588	11,323,498	121,971,017
Dividends paid by A. C. M. for year ending Dec. 31.....	19,815,625	17,484,375	9,325,000	9,077,500	12,997,500	68,700,000
Taxes paid per \$100 of income	6.07	1.93	4.12	7.60	6.65	4.25
Taxes paid per \$100 of dividends	10.52	5.61	7.37	7.44	5.79	7.55

According to Table XXII, the A. C. M. Co. paid in taxes an average of 5 per cent of its income and 9 per cent of its dividends during the four years 1914-1917. Table XXIII, computed as explained above, reduces the average to 4.25 per cent of income and 7.5 per cent of dividends. One may reconcile both tables by saying that the A. C. M. Co. paid in taxes during the period under consideration an average of 4 to 5 per cent of its net income and of 7 to 9 per cent of its dividends. The two tables also show that, no matter how the computation is made, the taxes paid by the A. C. M. Co. since 1915 have been less in proportion to the profits of the Company than the taxes paid during 1913-14. If the corporation license tax law had not been passed, the Company would have paid in 1917, \$1,657,629 in taxes, which would have amounted to 3.25 per cent on its profits of 1916 or 4.82 per cent of the profits of 1917. The corporation license tax, which amounted to \$428,376, increased the total taxes of the Company sufficiently to more than equal 6 per cent of the net income and 10.5 per cent of the dividends in 1917, and also raised in a corresponding degree the averages for the five years 1913-1917.

The figures in Tables XXII and XXIII compare the taxes paid by the A. C. M. Co. with its total net income or profits. But a portion of this income is derived by the Company from operations outside Montana. As pointed out above, the income of the A. C. M. Co. from operations in Montana during the year ending December 31, 1916, was 84.3 per cent of its total income. It was also indicated above why it is safe to assume the same proportion of income from operations in Montana to total income for the five years 1913-1917. Applying this assumption to the figures of Tables XXII and XXIII, one finds that during

1913-1917 the A. C. M. Co. paid in taxes an average of 5 to 6 per cent of its income derived from operations in Montana. In 1917 the A. C. M. Co. reported to the state treasury that its income from operations in Montana (during the year ending December 31, 1916) was \$42,837,600 on which the corporation license tax was paid. As the Company in 1917 paid \$2,086,005 in total taxes, this would mean that the Company in that year paid in taxes 4.87 per cent of its net income from operations in Montana.

The taxes paid by the A. C. M. Co. may be analyzed in yet another way which throws additional light on the Montana method of mine taxation. The comparison is presented in the following table:

TABLE XXIV.

A. C. M. Co.	1917	1916	1915	1914	1913	1913-1917
Net proceeds assessed.....	\$36,010,543	\$14,628,787	\$6,828,160	\$8,613,565	\$11,446,902	\$77,527,957
All other property assessed, exclusive of net proceeds	19,595,804	16,682,206	15,528,210	15,444,428	15,103,164	82,353,812
Taxes paid on net proceeds	1,066,519	483,756	229,520	250,156	332,338	2,362,289
Taxes paid on all other property, exclusive of net proceeds	1,019,485*	495,866	457,716	425,582	420,295	2,818,944
Taxes per \$100 of net proceeds	2.95	3.30	3.36	2.90	2.90	3.04
Taxes per \$1,000 of all other property assessed	50.2	29.7	29.4	27.5	27.8	32.9

* Includes \$428,376 of corporation license tax.

The significance of the above table lies in the fact that it shows that the A. C. M. Co. paid about the same number of mills on net proceeds as on all other property. If the interpretation of net proceeds given in Chapter V is correct and net proceeds approach net income, it is evident that the A. C. M. Co. is assessed at practically the same rate on its general property and on its annual income from the mines.

This, then, is the burden of taxation borne by the Anaconda Copper Mining Company in Montana. How does this record compare with that of other property in the state? Comprehensive comparisons are impossible because no figures are available showing the market value and net income of other classes of property. The Tax and License Commission, however, has col-

lected some data which permit a few specific comparisons. They are presented in Table XXV for the year 1917.

TABLE XXV.

Properties compared	Net income in Montana	Taxes paid in Montana	Per cent of income
A. C. M. Co.....	\$42,837,600*	\$2,086,005	4.87
Northern Pacific R. R. Co.....	†	942,409‡	.....
Chicago, M. & St. Paul R. R.....	†	555,256‡	.....
Great Northern R. R. Co.....	†	1,024,617‡	.....
Electric Utilities	6,649,610	414,116	6.23
Water Companies	528,506	69,697	13.19
Gas Plants	102,512	13,851	13.51
Street Railways	184,773	46,523	25.18

* Earned during year ending December 31, 1916.

† Not available.

‡ Based on property taxes paid in 1916 and corporation license tax paid in 1917.

The above table compares the taxes paid by the A. C. M. Co. in 1917 with the income received for the year ending December 31, 1916. This is based on the fact that the assessment of property in Montana is made as of March first, and net proceeds are reported for the year ending May 31. Besides, the corporation license tax for 1917 is based on the net income of the preceding fiscal or calendar year. But in order to avoid any possible difficulties in the above table, the taxes paid by the A. C. M. Co. for the fiscal year ending November 30, 1917, may be compared with the income of the Company for the year ending December 31, 1917. According to the report of the Company, its income for 1917 was \$34,333,751. Assuming that the proportion of the income derived from operations in Montana was the same as in 1916, the income for 1917 in Montana was \$28,840,350. As the Company paid \$2,086,005 in taxes for the year ending November 30, 1917, the proportion of taxes to income calculated on the basis of operations for the year ending December 31, 1917, would equal 7.23 per cent. In either case, the figures would seem to indicate that the A. C. M. Co. paid in 1917 less taxes in proportion to its income than some of the public utilities.

No such data as were presented above for the public utilities

are available for city real estate, farming property, livestock, etc. Nevertheless, an approximate comparison between the A. C. M. Co. and such property is possible. It was indicated above that the total assessment of all property in Montana was \$582,286,529 in 1917; \$487,898,355 in 1916; \$439,785,918 in 1915; and \$412,361,919 in 1914. During these four years, the total amount of taxes paid in the state for all purposes was \$20,803,000 in 1917; \$16,960,500 in 1916; \$15,250,700 in 1915; and \$13,388,475 in 1914. Deducting the taxes paid by the A. C. M. Co. during these years, one finds that all other property in the state (exclusive of that owned by the A. C. M. Co.) paid in taxes \$18,716,995 in 1917; \$15,980,878 in 1916; \$14,563,464 in 1915; and \$12,712,737 in 1914. Deducting also from the total assessed valuation of the state the assessment of the A. C. M. Co., one obtains the figures showing that all property in the state, exclusive of that held by the A. C. M. Co., was assessed at \$526,680,182 in 1917; \$456,587,362 in 1916; \$417,429,548 in 1915; and at \$388,309,926 in 1914. Dividing the amount of taxes paid by the assessments gives the average rate for all property in the state, exclusive of the A. C. M. Co. The figures are 3.55 per cent in 1917; 3.50 per cent in 1916; 3.45 in 1915; and 3.27 in 1914; in other words, all property in the state, exclusive of the property owned by the A. C. M. Co., paid 35.5 mills in 1917; 35 mills in 1916; 34.9 mills in 1915; and 32.7 mills in 1914; an average of 34.5 mills annually during the four years. The Tax Commission in its report to the Legislature estimates the average tax levy in the state as equal to 37.3 mills. This again indicates that all estimates in this chapter have been made as conservatively as possible.

It is, of course, a matter of common knowledge that property throughout the state is assessed not at its full cash value, as required by law, but at a greater or less percentage of such value. Various classes of property are affected in different degrees by the arbitrary administrative procedure. It is claimed that agricultural land is assessed at 35 per cent of its value; cattle at 45 per cent; horses and mules at 52 per cent; bank stock at 65 per cent of its value. In 1912 the Bureau of the Census estimated that real property and improvements in Montana were assessed at 43.5 per cent of their true value. Intangible property largely escapes assessment altogether.

No average for all property in the state would be of much value because of the wide variations in the assessments of the different classes of property.

Confining the comparison to land and livestock, it is clear that the average number of mills paid in taxes in Montana, as calculated above, must be divided by about three or two and a half, in order to obtain the number of mills paid on the actual cash value of such property. Such a calculation shows that land and livestock in Montana paid from 12 to 14 mills on true value in 1917, 1916, and 1915; and from 11 to 13 mills in 1914; an average of 12 mills for the four years, for both agricultural land and livestock.

To compare fully the results obtained as to the assessment and taxation of property in general and of the A. C. M. Co. in particular, the property taxes calculated above must be reduced to an income basis. It is hardly necessary to say that such a task cannot be carried out in an exact way in the present state of statistical data. All that can be done is to attempt an estimate based on the generally known facts. Assuming that different classes of property in Montana produce incomes varying from 6 to 20 per cent on the investment, it would follow that an average of 12 mills on the true value of property would result in the payment of a tax equalling from 7 to 30 per cent of the income from the property. The percentage would vary with the nature of the property. Intangible property, for instance, probably pays a low proportion in taxes by evading the assessor. In the case of farming property, especially that owned by the farmer of moderate means, the proportion of income paid in taxes is undoubtedly much higher. If the average income from property in the state is 10 or 12 per cent, then property in Montana pays from 10 to 12 per cent of its income in taxes. These estimates are in agreement with the general facts established for the country as a whole. It is generally thought that the people of the United States pay from 15 to 20 per cent of their income for governmental expenditures, and that the major part of such taxes is paid for state and local purposes.¹ It is also recognized

¹ H. R. Seager, *Principles of Economics*, p. 476.

that the general property tax falls most heavily upon farming property.

All the calculations made in this chapter can be summarized in a few lines. During the five years, 1913-1917, the average assessment of the A. C. M. Co. was 6.6 per cent of the total assessment of the state, and the Company paid 6.7 per cent of all taxes collected in the state. The Company was assessed at about 25 per cent of the true value of all its properties in Montana, while agricultural land is reported to have been assessed at 35 per cent, livestock at 45, bank stock at 60. During the same period the A. C. M. Co. paid about the same number of mills on its assessment as all other property in the state; but the A. C. M. Co. paid only about 8 mills on the estimated true value of its Montana properties, while all other property paid on an average of 12 to 14 mills. And finally, the A. C. M. Co. paid in taxes to the state about 6 per cent of its income derived from operations in Montana, while other property, especially farming property, paid an average of 10 to 12 per cent. This then is the comparative tax burden in Montana in so far as it can be measured on the basis of available data.

CHAPTER VII.

THE DEFECTS IN THE MONTANA MINE TAX LAW.

The analysis of the Montana method of mine taxation presented in the preceding chapters was an attempt to make clear the effects of the law in its concrete application in the state. It seems desirable, however, to summarize in general terms the more important features of the Montana mine tax law and to point out what may be considered their inadequacy from a fiscal point of view.

The primary difficulty is the constitutional provision prescribing a special method for taxing the mines (Section 3 of Article XII of the Montana Constitution). This section was the subject of heated discussion in the Constitutional Convention of 1889, and was adopted in the face of violent opposition on the part of some members of the convention. As pointed out above, this constitutional provision is a legal device which spikes the wheels of economic law in the domain of mining. It fixes an arbitrary value on the surface which is one of the elements in the valuation of a mine. But the greatest significance of this provision is that it limits the powers of the legislative bodies of the state to tax the mines in any way which may be deemed necessary. No other class of property in Montana is protected by such special constitutional enactments. The general limitations on the taxing power of the state, such as the requirements of uniformity and equality are considered sufficient for all property in the state. The mines alone are accorded special constitutional protection.

There are only five states in the country in which the method of taxing mines is prescribed in the constitution. These states are Montana, Nevada, Utah, Wyoming, and South Carolina.¹ Such states as Pennsylvania, California, Michigan, Minnesota, Arizona, and others, whose mines are among their most important resources, have no special constitutional limitations upon the taxation of mineral property. In all these states, the legislature

¹ L. E. Young, *Mine Taxation in the United States*, p. 78.

or the tax commission has the necessary authority to deal with the mines. Such procedure has not resulted in any harm to the mining industry. The five states which still retain constitutional provisions on mine taxation are admittedly among those in which the more modern principles of taxation have found the least application.

The second defect in the Montana law is the contradictory method of assessing mines which is a result of both constitutional and statutory provisions. As shown above, the value of a mine for purposes of taxation is assumed to equal the price paid to the government for the surface plus the independent value of the improvements plus the net proceeds of the year. On such an assessment the general property tax rate is imposed. This procedure means that the Montana mines are really taxed under the system of the general property tax, but that a large part of their assessed value is more nearly income than property. This is a confusion of principles and methods which is not even justified by the Constitution. Section 3 of Article XII of the Constitution provides merely that the net proceeds shall be taxed "as provided by law." It is within the province of the legislature to determine how this should be done. The legislature could, if it so desired, tax the net proceeds as income or in any other manner. The method of taxing net proceeds as personal property is the cause of the contradiction pointed out above.

The method of mine taxation adopted in Montana results in a third difficulty which has been referred to several times in the preceding chapters, namely, the uncertain and fluctuating character of the assessment of the mining industry. The net proceeds have often dropped over 50 per cent in one year. This is well illustrated by the assessment of this year (1918) which shows a return of only \$17,355,196 in net proceeds as against \$45,519,461 in 1917. The decrease for the year is about 62 per cent. This means a proportionate decrease in taxes. The situation especially affects the state government whose tax levy is limited by the Constitution to two and a half mills. Such a decrease means a considerable loss in revenue and consequent financial difficulties. In view of the continued growth of our state government which is natural in a comparatively new state such as Montana, the uncertainty and irregularity result-

ing from the method of assessing mines is a particular disadvantage.

This "net proceeds" feature of the law also has the effect of adjusting the taxes paid by the mines to their earnings. When the mines are prosperous and show larger net proceeds, they pay higher taxes. When business is less thriving, net proceeds and the taxes paid by the mines decrease accordingly. On the other hand, all other property in the state has to pay taxes on its value regardless of its earnings for the year. A farmer may have a crop failure or a business may show a deficit for the year, yet the assessment of the farmer's or business man's property would show little, if any, effect of such conditions. Under the general property tax, the farmer or business man is assessed not on what he earns but on what he has.

A fourth defect in the law is the peculiar method of computing net proceeds prescribed by the law. As was pointed out in Chapter V, this method is of such a nature as to make comparisons between assessments and the financial reports for business purposes entirely impossible. This is a serious matter. A scientific method of accounting is an essential prerequisite for the proper discharge of the obligations of business to the state. The Interstate Commerce Commission has for years prescribed the system of accounting to be used by the railroads. The public service commissions in many states prepare the forms of books which must be kept by the public utilities. The adoption of the corporation income tax and excess profits tax forced the federal government to suggest methods of accounting to be used for the preparation of income returns. The idea of greater uniformity and of greater supervision of accounting methods by the government is an inevitable development of all recent tendencies in government regulation and public finance. It would seem to offer the best solution for the many difficulties that have caused friction between tax officials and mining companies in many states. Associations of mine operators in several of the important coal mining states have realized this and have recommended such uniform accounting methods. The idea has also been urged by the Federal Trade Commission.¹

¹ L. E. Young, *Mine Taxation in the United States*, p. 207.

A corollary of the above is the fifth defect in the Montana law which leaves the assessment of mines entirely to the local assessor. No matter how conscientious and capable a county assessor may be, he cannot be expected to perform this part of his duty adequately. The magnitude and complexity of the mining business in the state make it necessary to devote much time and to apply special training and experience to the process of assessment. As a rule, the county assessors in the state are content to receive the statements of valuation sent in by the officials of the mining companies. This practically leaves the assessment of mines in the hands of the owners of the mines and reduces the supervision of the taxing authorities of the state over mine assessment to almost nothing.

These are the principal defects in the mine tax law of Montana. The manner in which these defects influence the general tax situation in the state was shown concretely in Chapters IV and VI. The larger problem of what method of mine taxation is most adequate in general and would fit conditions in Montana most fully will be considered in subsequent chapters.

The provisions of the Montana law, briefly summarized in this chapter as inadequate, have been justified time and again by the peculiar nature of mining, which is a highly speculative business. The argument is based on two main propositions: the exhaustibility of mineral resources and the assumption of exceptional risk in mining. These propositions must be carefully analyzed in order to elucidate the general principles which are at the basis of mine taxation and which should furnish the necessary guidance in changing the Montana law. They are considered in the chapters which follow.

CHAPTER VIII.

THE EXHAUSTIBILITY OF MINERAL RESOURCES.

It is, of course, a commonplace that at some time or other all mines become either physically exhausted or economically unprofitable under prevailing methods of metallurgical treatment. The latter condition is relative and is counteracted by the progress of mining and metallurgy. One of the most remarkable developments in the mining industry of Montana in the past ten years has been the introduction of new and improved methods which have made possible the recovery of a larger percentage of metal from the ore and the treatment of ore which was considered unprofitable before, thus extending the life of the mines. This race between science and nature is a feature, not only of mining, but of many other human activities in which similar factors are involved. However, in so far as particular mines are concerned, the race cannot be kept up indefinitely, and sooner or later the stage of physical exhaustion or the limit of economic exploitation must be reached. This is unavoidable because the mineral taken from a mine cannot be replaced and the very process of making a mine productive and profitable implies the destruction of the basis upon which its usefulness rests.

The representatives of the mining interests place especial emphasis upon this characteristic of the mining industry. In their opinion, it differentiates mining from every other form of property and business enterprise. Mr. C. F. Kelly in the pamphlet referred to above contrasts the "practically perpetual yield from the farm" with "the yield from the mine which is one of rapid exhaustion." He finds the same difference between the railway and other industries and mining. To quote Mr. Kelly:

"The railways that traverse the state we believe will last for all time. They will serve as medium of transportation for people and the commerce of this region as long as time endures. The successful manufacturer establishes his busi-

ness, and it runs on without diminution, perseverance increases the return, and energy adds to and amplifies the extent of business done. But the greater the perseverance, the greater the energy, the more skillful the operation of a mine, the sooner it is completely exhausted, and all that remains is a cavern in a hillside.”

This condition is beyond human control. “. That which has resulted from the mysterious forces of Nature working through countless ages of world making, when the universe was young and long ere man’s intellect had stimulated activity on the globe, cannot now be reproduced.” Mr. Kelly continues: “Be the total amount large or small there is only so much commercial ore existing in any deposit or in any locality. it is impossible to either replenish or replace the ore when once taken from the ground.” Mr. Kelly illustrates his argument by comparing a mine to “a piece of cheese, from which a slice is taken in each day’s operation.”¹

For the sake of greater clearness, Mr. Kelly’s argumentation may be reduced to three simple propositions. First, mines differ from land and other resources: mines are exhaustible and have a brief life; other resources are inexhaustible and have perpetual existence. Secondly, because of this difference, the economics of mining is totally different from that of all other industries. Thirdly, this difference is so fundamental as to necessitate an absolutely distinct method for the taxation of mines. These three propositions demand careful examination.

It is undoubtedly true that there are natural resources which for all practical purposes are indestructible. But agricultural land cannot be classed among such resources without some qualifications. The properties of the soil which produce growth and make farming possible are among the things which can be and are continuously destroyed. Every crop raised on a farm consumes a certain amount of the phosphorus, potassium, calcium, and other elements in the soil which are the foundation of fer-

¹ C. F. Kelly, *Mining Taxation in Montana*, p. 15.

tility. The total destruction of the fertility of a given portion of the earth is not entirely impossible. Recent historical research has tended to place emphasis on soil exhaustion as a cause of the downfall of great nations. The exhaustion of Roman soil has been suggested as one of the important factors which contributed to the downfall of the Roman Empire.¹ The evidence is not confined to any one country.

"Go to the ruins of ancient and rich civilizations in Asia Minor, Northern Africa or elsewhere. Look at the unpeopled valleys, at the dead and buried cities, and you can decipher there the promise and the prophecy that the law of soil exhaustion held in store for all of us. It is but the story of an abandoned farm on a gigantic scale. Depleted of humus by constant cropping, land could no longer reward labor and support life; so the people abandoned it. Deserted, it became a desert; the light soil was washed by the rain and blown around by shifting winds."²

One does not have to go to Africa or Asia to convince himself of this fact. There is sufficient evidence of the operation of this law in the United States. Long before the Civil War, the system of agriculture in the South was depleting the cotton lands of their fertility and was causing the abandonment of estates in South Carolina and Georgia.³ The deserted farms of New Hampshire, Vermont, northern New York, and the deteriorated value-shrunken farm properties in western Massachusetts, Ohio, and Indiana tell the same story. It is asserted that the soil of the West is also being reduced in agricultural potency by exactly the same processes.⁴ The decrease in yield per acre has affected even such new regions as the wheat district of Minnesota and North Dakota.⁵ Wrong methods of agriculture are the chief cause of the destruction of the productive power of the earth. But the process of erosion is also responsible for the loss of large tracts of fertile land which are swept away into streams and to the sea.

¹ V. G. Simkhovitch, "Rome's Fall Reconsidered," *Political Science Quarterly*, June, 1916.

² Simkhovitch, "Hay and History," *Political Science Quarterly*, September, 1913.

³ Thomas N. Carver, *Selected Readings in Rural Economics*, p. 277.

⁴ Edwin G. Nourse, *Agricultural Economics* (1916), p. 192.

⁵ J. R. Smith, *Commerce and Industry* (1916), p. 29.

It is estimated that at least 4,000,000 acres of farm land in the United States have been totally ruined by erosion, and that about twice as many acres have been seriously damaged. The loss of fertility due to erosion amounts to millions of dollars annually, though the process is so slow and uniform that it may not be perceptible for some time.¹

Agricultural land is thus not an indestructible resource. Nevertheless there is a difference between farming land and mineral deposits which must not be ignored. Though land and minerals are both exhaustible in use, agricultural land may be restored to its productivity by proper fertilization and scientific methods of agriculture, while mineral deposits are totally exhausted and destroyed in the process of use. This means that agricultural land and similar resources may be maintained in a state of production indefinitely. In the old, settled countries of the world, agriculture has been carried on on the same land for many centuries. The soil of such countries has been worked over many times, and is as much the work of man as the gift of nature. The important fact, however, is that land can be so maintained and even improved and offers a basis for indefinite use. A mine, on the other hand, can be used for purposes of production only as long as the ore lasts, which is necessarily a more or less limited period of time.

The same distinction may be made between mineral and other resources, such as timber lands, or such productive enterprises as railroads. It must be remembered, however, that the distinction is not absolute. There are conditions under which the restoration of agricultural land may be entirely unprofitable. The large number of abandoned farms in the country illustrates this very clearly. Urban land may lose all or part of its value as a result of changes in population or other conditions of urban life. A manufacturing plant may be affected in the same way by changes in fashion and social tastes or by general industrial transformations. In an economic sense, such changes which result in the total or partial destruction of the value of property are analogous to exhaustion. On the whole, however, the contrast between a mine and other forms of wealth, as outlined above, may be accepted as correct.

¹ *Yearbook of the Department of Agriculture, 1916, pp. 107-118.*

The important question, however, is, what is the meaning of this difference between mineral and other resources. Has it the economic significance ascribed to it by mining men and others? The answer to this question depends upon a proper analysis of the generally recognized principles of business enterprise.

The fundamental consideration in all business is to preserve the capital invested in addition to obtaining an adequate return on it. The individual investor buys bonds or stocks in the expectation, not only that he will receive a certain annual income, but that he will recover at least the amount invested when his security matures or when he decides to sell it. Every business enterprise as a going concern is considered successful only if it earns a proper return while maintaining its capital unimpaired. In every business the capital is invested in concrete capital goods: land, machinery, tools, buildings, etc. The preservation of the capital implies the maintenance of these capital goods in proper condition. It also involves renewals and replacements made necessary by the changing standards of the business and by the progress of industry in general.

The demand for maintaining capital intact is counteracted by the fact that all things are subject to deterioration and disintegration. Buildings, machinery, dams, ditches, tools, etc., all wear out sooner or later. Besides the wear and tear, the changes in economic life, such as new inventions, new processes, new fashions, result in the obsolescence of machines and plants for productive purposes. In a word, the law of nature is destruction; the law of business is the preservation and accumulation of capital. This is one of the many instances of the divergence between the processes of nature and the demands of social existence. If man is to achieve his business ends he must protect himself against the destruction wrought by nature and also against the destructive results of his own inventive genius.

The problem has been solved by regarding the maintenance of capital goods as part of the expenses of production and by making special allowance from current earnings for the depreciation of property which cannot be made good by current repairs. This is the procedure of modern accounting. Every well conducted business not only includes repairs, renewals, and some of its betterments in operating cost, but also provides special

funds to offset the decreased serviceability and value of its tangible and intangible assets. The financial reports of the various corporations in Chapter V illustrate this very well. Maintenance and depreciation are among the charges against gross proceeds by which net income is reduced, while the replacement fund appears as a special account on the balance sheet of the firm or company. Whether depreciation and reserve funds are merely nominal accounts and represent investments in the business, or are actually accumulated in the form of cash, securities, independent property, etc., they serve the same purpose, namely, to assure the continued and unimpaired existence of the capital invested.

The provision of depreciation and similar funds is based on the recognition that capital must be constantly renewed from current earnings. Production is the only source from which all business enterprises can and must draw the strength for continued existence. Every business is expected to conduct its operations so as to reproduce periodically the capital it represents in addition to the desirable returns in the form of interest and profits. Whether the business lasts a year or a century, the process involved remains the same.

The manner in which these general principles affect particular kinds of business can be easily traced. A railroad, for instance, can no more last forever, without being constantly renewed, than a human being can live without food. The elements which compose the railroad, its road-bed, rails, ties, cars, engines are continuously giving out under the pressure of the forces of nature. The life of the various parts of the road differs in length, but there is a definite period beyond which they all wear out. If a railroad should carry on its business without constantly repairing, renewing, and improving its road-bed and rolling stock, it would find itself incapacitated in a very short time. The heavy expenditures for maintenance of way and equipment, which may be found in the income account of every railroad, are sufficient evidence of this fact. Though the outlays for repairs and renewals are made continuously, it may be said that the accumulation of these outlays for a number of years represents a total renewal of the road or in other words, a replacement of the original capital invested in the road.

The same is true, not only of manufacturing and mercantile establishments, but also of farming. The annual depreciation of farm machinery, farm buildings, livestock, etc., is considerable. Investigations in a number of states have shown that the rate of depreciation on farm machinery varies from 5 to 20 per cent, depending on the implement and the way it is used; that the loss from decrease in the value of sheep sold as well as from deaths results in a depreciation of nearly 10 per cent; and that the average depreciation on a large number of horses is over 8 per cent; while on pure bred and highly graded cattle it varies from 4 to 13 per cent.¹ Whether the farmer keeps proper accounts or not, he is constantly replacing the value of his improvements, buildings, machinery and livestock out of the earnings of his farm.

But a successful farmer must do more than that. "A farm cannot properly be called successful unless it pays a fair rate of interest on the investment, returns fair wages for the farmer's labor, and maintains at the same time the fertility of the soil."² This is essential because the fertility of the soil is the fundamental element in the value of a farm and it is subject to deterioration and destruction. The fertility is maintained by proper manuring, rotation of crops, commercial fertilizers and other improvements which involve considerable expenditures. These are properly charged to the cost of operating the farm. The efficient farmer must follow the procedure of all good business men. He must include repairs and the maintenance of soil fertility in his operating expenses and must provide for the eventual replacement of his buildings, machinery, and other improvements. In other words, that part of his capital which is represented by his improvements and by the exhaustible properties of the soil is constantly reborn in the process of production.

These general principles of business enterprise are also applicable to mining. A successful producing mine is expected to return at the end of its life-period the capital invested in it and a fair interest on such capital. Both the capital and the return

¹ Nourse, *Agricultural Economics*, pp. 300-04.

² *Farmer's Bulletin No. 661*, published by the Department of Agriculture. Italics mine.

on it must come from the earnings of the mine. The maintenance of the improvements in and about a mine is a part of the operating expenses which also include the cost of development work. New construction which is a replacement of deteriorated and obsolete improvements as well as all losses in the value of the plant which cannot be repaired are taken care of by means of depreciation funds, as is done in other industrial enterprises. The only difference which arises in the case of mines is the depreciation of property which is caused by the depletion of the ore. Such depreciation cannot be guarded against by renewals, betterments, or extensions in the particular mine which is being consumed. But it can be taken care of in other ways. A mining company whose mines are being exhausted may devote part of its annual earnings to acquire new mining properties which will prolong the life of the enterprise. Such has been the policy of English companies for many years, and it is being adopted in the United States.¹ Another way to redeem the capital invested in a mine is to set aside from earnings annually a sum which at a given rate of interest will at the end of the life-period of the mine return the original capital.² This involves the difficulty of determining the life of a mine which will be discussed in another chapter. Such provision for the redemption of capital invested in mines is known as amortization. It is the same principle which is involved in sinking funds used by corporations in general for the extinction of interest bearing debts. The financial statements of the mining companies referred to in Chapter V show that these large and well organized companies not only make definite annual charges for the depreciation of equipment, but also carry special allowances for "ore extinguishment" or "capital distribution." They thus clearly and definitely provide for the return of the capital invested in their business.

The confusion of ideas concerning the real significance of wasting assets, such as mines, has been the result chiefly of the practice followed by so many mining companies of distributing all their earnings in dividends without making proper provisions

¹ Robert S. Lewis, "Amortization and Depreciation," *The Mining and Scientific Press*, September 23, 1916.

² E. B. Skinner, *The Mathematical Theory of Investment*, p. 161.

for depreciation and amortization. Such companies have left it to their stockholders to make the necessary division of dividends into profits and capital returned.¹ This procedure has been justified on various theoretical grounds.² But in practice the majority of investors in mining stocks have revealed but a very vague idea of the true nature of the earnings derived from their holdings and have not provided for the amortization of their investment, thus suffering frequently a total or partial loss of capital.

The necessity of allowing for depreciation and amortization and of distinguishing clearly dividends which are profit from dividends which are capital returned, has recently been impressed upon the mining business by the new developments in federal taxation. The Federal Income Tax Law, that is, the Act of September 8, 1916, as amended October 3, 1917, forced the mining men of the country, as well as other business men, to reconsider carefully their systems of accounting in order to adjust themselves to the requirements of the government. The federal law, which places a tax on net income, allows certain deductions which in the case of mines are as follows:

"All losses actually sustained and charged off within the year and not compensated by insurance or otherwise, including a reasonable allowance for the exhaustion, wear and tear of property arising out of its use or employment in the business or trade. . . . In the case of mines a reasonable allowance for depletion thereof not to exceed the market value in the mine of the product thereof which has been mined and sold during the year for which the return and computation are made, such reasonable allowance to be made . . . under rules and regulations to be prescribed by the Secretary of the Treasury. Provided, that when the allowance authorized shall equal the capital originally invested, or in case of purchase made prior to March first, 1913, the fair market value as of that date, no further allowance shall be made."

These provisions of the Federal Income Tax Law have been supplemented by the regulations of the United States Internal

¹ T. O. McGrath, "The Standardization of Directors' Reports for Mining Companies," *Engineering and Mining Journal*, May 4, 1918.

² G. A. Denny, *The Deep Level Mines of the Rand*, p. 99. See also H. C. Hoover, *Principles of Mining*, p. 44.

Revenue Department, according to which mining companies must show portions of dividends paid from profits and from capital returned and must carry on their balance sheet the actual reserves set aside from earnings for capital returned. Under these regulations a mining business must keep

“an accurate ledger account in which shall be charged the fair market value as of March 1, 1913, or the cost, if the property was acquired subsequent to that date, of the mineral deposits involved. This account shall be credited with the amount of the depletion deduction claimed and allowed each year, or the amount of the depletion shall be credited to a depletion reserve account, to the end that when the sum of the credits for depletion equals the value or cost of the property, no further deduction for depletion with respect to this property shall be allowed. The value determined and set up as of March 1, 1913, or the cost of the property if acquired subsequent to that date, will be the basis for determining the depletion deduction for all subsequent years during the ownership under which the value was fixed, and during such ownership there can be no revaluation for the purpose of this deduction if it should be found that the estimated quantity of the mineral deposit was understated at the time the value was fixed or at the time the property was acquired.”

The provisions and regulations of the United States Treasury Department, as well as the general analysis presented above, clearly show, that if provision is made for amortization, the distinction between such wasting assets as mines and other industrial enterprises is considerably weakened. The difference consists mainly in the fact that in industrial and mercantile enterprises the original investment can be maintained unimpaired indefinitely *in the same business* by means of replacements and betterments, while in mining the original investment can be maintained only by being placed or invested in property outside the particular mine which is being exhausted. From the point of view of the investor, this means that a mine can offer an opportunity for investment for a limited period of time only. Suppose the body of ore in a mine lasts five or fifteen years. If the mine is a success, the investor finds at the end of the five or fifteen years, that he has received his original investment in addition to fair dividends for the period. Assuming that his

mining company followed the practice of safeguarding the capital by means of a sinking or amortization fund, the investor at the end of the five or fifteen years receives back his investment in toto, but his mine is exhausted and he is faced with the problem of finding new employment for his capital. If his mining company, on the other hand, distributed the capital invested in annual installments in the form of earnings or of capital distributions, the investor had to consider the problem of reinvesting his capital from year to year. In this respect, he was certainly at a disadvantage as compared with investors in other forms of property. An investor in railroad securities or in a manufacturing business or in a farm may keep his investment unchanged indefinitely; not because railroads or farms are indestructible or inexhaustible, but because they are capable of maintenance and restoration. At the end of a five or fifteen year period, both the investor in a railroad and the investor in a successful mine find themselves in the same position in so far as their capital is concerned. But the investor in railroad securities or owner of a farm need not think about changing his investment; it may be maintained in the same form for many years to come. The investor in or owner of a mine in the process of exhaustion must think of placing his capital in some new field of investment continuously or at frequent intervals. This is an advantage which the farmer, manufacturer, or the trader has over the investor in mines. But this disadvantage, which is the result of the exhaustibility of mineral deposits, is rewarded in a definite manner in accordance with the laws of the market. It is a general fact that all securities which have a short life and which, therefore, impose upon their holders the necessity of frequent changes and of greater care, all other conditions being equal, pay a higher rate of return. Partly because of the possibility of exhaustion, the investor in mines expects larger profits, and it is generally agreed that he is justified in entertaining such expectations.¹

This has long been recognized by mining engineers and operators. In an article written for the *Engineering and Mining*

¹ The effects of the uncertainty of the period for which a mine may last as well as the appreciation in value of such resources as land are considered in another place.

Journal on June 2, 1904, by Mr. F. Hobart, under the title "Amortization," the difference between mining and other investments is clearly stated in the following words:

"A mining investment, in the great majority of cases, is a terminable investment, not a permanent one. That is, it will end and become unproductive after a time, shorter or longer, according to the nature of the mine. It is not a permanent investment, like a railroad, which may be expected to last and to return profits for an indefinite period. A mining investment, therefore, to be good, should return not only ordinary interest on the capital, but a further sum, sufficient to repay the original capital during the life of the mine."

To meet this situation, the writer advocates a more general use of amortization funds, such as are common in France, England and elsewhere.¹

In the case of the Anaconda Copper Mining Company, the problems of depreciation and amortization have been solved in what may be considered a satisfactory manner. The Company has always been noted for making liberal allowances for depreciation. In 1916 it charged off \$7,113,463 for depreciation and obsolescence of mining plants, smelters, refineries, etc., and in 1917, \$5,387,436 was charged off for the same purpose. On December 31, 1917, its depreciation reserve was reported as \$10,316,446. The reports of the Company do not reveal whether allowances are made for the depletion of ore. But it is known that the Company "has been buying mines right along," and it is surmised that it has reckoned that "developments and acquisitions have maintained their resources."² The policy of the Company has been to use part of its earnings for the acquisition of new properties. It owns over 250,000 shares of Inspiration (nearly 21 per cent), about 60,000 shares of Greene-Cananea, 382,912 shares of Alice Gold and Silver Mining Company, over 200,000 shares (42 per cent) of Butte Copper and Zinc Company. It is estimated that the Andes mines in South America

¹ Quoted in *Economics of Mining*, by Rickard, Hoover and others (1907), p. 194.

² W. R. Ingalls, "Anaconda's Finances," *Engineering and Mining Journal*, June 16, 1917.

are worth at least \$30,000,000 and were acquired by the Anaconda Company at a cost of about \$4,000,000.¹ By the acquisition of these and other properties with part of its earnings, the Anaconda Company has not only filled the gaps in its assets made by the depletion of some of its ore-bodies, but has considerably increased the value of its holdings. It is generally thought that the assets of the Company have a greater value than that at which they are carried on the books. The surplus, reported as of December 31, 1917, was \$62,913,989, equivalent to over \$25 per share on the outstanding capitalization (2,331,250 shares at \$50 par value). It is estimated that by December 31, 1918, the surplus will have reached the sum of \$87,600,000 or \$37 per share of common stock. This financial condition certainly shows a remarkable preservation and extension of the investment entrusted to the Company.

This is also evident from the record of the Company showing earnings and disbursements to stockholders. It is estimated that from 1880 to 1894, when the Anaconda was a close corporation, the total earnings from the mine were not less than \$50,000,000.² In 1895 the Anaconda Copper Mining Company was organized under the laws of Montana with a capitalization of \$50,000,000, shares \$25 par. In the fifteen years from 1895 to 1909, the Company paid in dividends \$44,850,000, which was nearly 90 per cent of its capitalization. The old Boston and Montana, organized in 1887, with a capitalization of \$3,750,000, paid during the period from 1887 to the close of 1905, a total of \$44,500,000 in dividends, or twelve times its original capitalization.³ In 1910 the stockholders of the A. C. M. Co. voted to increase the capitalization of the Company to \$150,000,000 (shares \$25 par) in order to acquire the Butte mining companies controlled by the Amalgamated Copper Company. This increased capital was used to absorb the Boston and Montana, the Washoe Copper Company, the Red Metal Mining Company, etc. From 1910 thus dates the Consolidated Anaconda Copper Mining Company, which as a result of its absorption of the principal mining properties of

¹ *Ibidem.*

² Walter Harvey Weed, *The Copper Handbook* (1912-13), p. 48.

³ Charles F. Speare, "The Story of Copper," *Review of Reviews*, November, 1916. See also W. H. Weed.

the Butte district, became "the largest copper company in the world."¹ On May 29, 1915, the par value of Anaconda stock was changed from \$25 to \$50 a share, and the number of shares was reduced by half. At the present time the outstanding capitalization is 2,331,250 shares at \$50 par or \$116,562,500.

The reports of Anaconda's operations since the consolidation of properties in 1910 show that in the seven years from 1911 to 1917 the total net earnings of the Company were in round numbers \$148,700,000. During the eight years from 1910 to 1917, the Anaconda distributed in dividends \$95,070,000.² In the eighteen year from 1900 to 1917, the A. C. M. Co. paid in dividends to its stockholders the sum of \$128,870,000. In the thirteen years from 1905 to 1917, the net earnings of the Company were over \$181,000,000, while its dividend disbursements during the same period amounted to \$116,520,000. In other words, during the period of 1905-1917, the A. C. M. Co. earned a sum equal to 150 per cent of its outstanding capitalization and paid in dividends a sum equal to its capitalization. Considering the five-year period 1913-1917 only, one finds that the net earnings of the A. C. M. Co. were \$124,800,000, while its dividend payments to stockholders amounted to \$68,700,000. That is, in the five years ending December 31, 1917, the Anaconda earned \$8,000,000 more than its total outstanding capitalization and distributed to its stockholders dividends equal to 59 per cent of issued capital stock.

In view of this financial record, it would seem that even the disadvantages referred to above, which exist in the case of many mining investments, have been largely eliminated by the Anaconda Copper Mining Company. Through the acquisition of new properties and the extension of operations to new fields, the Company has successfully met the problem of exhaustibility. While one or another of its mines may show signs of exhaustion, the Company continues to strengthen its position by the acquisition of new deposits whose future is assured. No one connected with the direction of the Anaconda Copper Mining Company has expressed fear that the days of the Company were counted. The holder of

¹ W. H. Weed, *op. cit.*, p. 48.

² W. H. Weed, *The Mines Handbook* (1918). See also annual reports of A. C. M. Co.

Anaconda stock is thus even spared the trouble of worrying about the near future or of having to transfer his investment to other fields.

How does the above analysis affect the taxation of mines? According to Mr. Kelly and others, the exhaustibility of mines is a fundamental factor in the situation. They maintain that

“in the case of the farm or the business block, no matter how often the same may be taxed, the body, the substance, the elements of value will remain such property is never wholly consumed by taxes. . . . In the case of a mine, however, the ore in the ground is absolutely valueless, it is incapable of producing anything of value as it exists in nature. . . . Until each particular ton of ore is reached by expensive workings and excavated, it is not a thing of value. . . . The moment it is reached in the course of mine development, and extracted from the earth, it becomes property, a thing of value a thing of worth, possessing the elements of taxable wealth and at that very moment under our system of taxation it is so taxed. . . . If the proposals should be carried out to tax in advance of ore extraction, upon a speculative valuation, the contents of a mine the basic objection exists that such a tax is cumulative in character.”

This general statement is illustrated by the following example:

“A ton of ore containing sixty pounds of copper, a hundred feet beneath the surface of the ground, is until that ton of ore has been reached, as incapable of being considered wealth as would be the same ton of ore if it were at the bottom of the sea. . . . Therefore, if today that ton of ore is taxed there has been taken away from that ton of ore in advance of any possible use to which it may be applied, three per cent of its entire value. If you do that next year, there has been taken away six per cent of its value. And so on, the process of destruction by taxation will continue until there will come a stage in the development of every mine where the aggregate of the cumulative tax must of necessity be offset against the value of the ore in the ground and when the point has been reached that the tax plus the necessary expense of extraction, exceeds the total value, mining must stop.”¹

¹ *Mining Taxation in Montana*, pp. 16-17.

This reasoning is further illustrated by the condition in Butte where the mines have been worked continuously for thirty years.

“If [runs the argument] without compounding interest, the principle advocated by those who favor the abolition of the net proceeds theory had been followed, today ninety per cent of the value of the ore that is being mined, would have been paid in taxation and the ten per cent of remaining value would be entirely insufficient to justify the extraction of the ore. No parallel exists for this in any other species of taxable wealth, because no other species of taxable wealth is completely and finally exhausted by the consummation of the act of giving it value.”¹

Such is the argument in favor of special taxation of mines based upon the fact of mine exhaustibility. The weakness in this chain of reasoning may be made clearer by considering separately each step in the argument. Mineral ore has no value until it is reached by expensive workings and excavated. In what respect does this differ from most commodities? No one has yet been able to eat bread before it was baked, or wear a suit before it was tailored, or live in a house before it was built. Most things must pass through some process of production in order to assume a useful form and to become of value. As was pointed out above, even land is eventually so worked over by man as to obliterate all possible distinction between its original properties and those imparted to it in the process of cultivation. It may be claimed that none the less land is originally a free gift of nature. But so are mineral deposits. The situation is somewhat obscured by the fact that land, as a rule, appreciates in value with the lapse of time and that the increased value, in part at least, is the result of scarcity, location, the growth of population, etc. The farmer thus appears in the fortunate position of one who grows rich while he sleeps, in contrast to the mine owner whose patrimony is wasted with every blast of dynamite under ground. In reality, however, the increase in land value is offset to a considerable extent by the fact that the farmer receives a much lower profit from his business and a smaller return on his investment. Investigations in many parts of the country have shown that such is the case

¹ *Ibidem*, p. 18. See also P. J. Miller, *Assessment of Mining Property, Report of Arizona State Tax Commission, 1914*, p. 61.

and that the farmer is content with a return which would not be considered satisfactory in any other business, but that he hopes to make up the difference in the future as a result of an advance in the price of his land.

This brings us to the second point in Mr. Kelly's argument, namely, that it would be unjust to tax the ore in advance of its extraction because such a tax would fall on "*a speculative valuation.*" The fact is, however, that such a speculative element enters into the assessment of land and other property. It has been pointed out long ago that

"in a country which is growing in population and wealth, and where land rents are consequently increasing, the selling value of land is apt to be somewhat greater than a capitalization of the amount of income it is yielding at the time of the sale would justify. . . . This is because . . . the prospectively larger future incomes are taken into account in the process of capitalization."¹

It is a familiar fact that in most agricultural regions of the country the market prices of land are considerably in advance of rental or productive value, and that this is due to the tendency of farmers to capitalize the anticipated rise in the value of their land.² In other words, the selling value of agricultural land contains a speculative element, and this is true to some extent of other forms of property. When such land is assessed in accordance with law at its true or cash value which means selling value, it is actually assessed on a "speculative valuation." It is claimed that the speculative element in the case of a mine is greater and involves greater uncertainty than in the case of land or other property. This claim is discussed in a subsequent chapter.

The basic objection, however, is urged that a tax on the total estimated ore deposits of a mine would be "cumulative in character" and would destroy the value of a mine. But under the general property tax, all taxes on all other classes of property are "cumulative." A farm which is valued at \$50,000 and which pays taxes at the rate of 30 mills, would be taxed in thirty-three years the total amount of its full value without compound-

¹ Richard T. Ely, *Outlines of Economics* (3d ed.), p. 419.

² Nourse, *op. cit.*, p. 636.

ing interest. Every merchant or manufacturer or house-owner actually pays such "cumulative" taxes and does in the course of time pay out in taxes an amount equal to the full price of the property. But such "cumulative" taxes do not destroy the value of any property. The reason is simple. Taxes are counted as an item of expense in every business or in the use of any property and are deducted from earnings before profits are determined. The same is true of mines and mining. A "cumulative" tax of reasonable amount can destroy the value of a mine only on the assumption that the ore-body is not worked but is held in reserve for speculative or other purposes. Under such conditions it may be true that a tax of three per cent on an "ore-body held in reserve for $33\frac{1}{3}$ years" would destroy its total present value.¹ But the same would be true of a stock of perishable merchandise or a shoe factory or an office building held in reserve instead of being put to productive use. Even the value of agricultural or urban land can be destroyed in this way, if withheld from production for a sufficiently long period. The argument for the special taxation of idle land derives its force from this very fact. In the case of a mine that was worked, the "cumulative" character of taxation would have only a minor significance. The amount of taxes would grow less with the decrease in value which would follow the extraction of definite quantities of ore, if no new ore deposits were discovered in the mine. Taxes would be paid out of earnings and not out of the value of the property.

That the "cumulative" nature of property taxes cannot destroy the value of a mine is clearly illustrated by the so-called "porphyry" copper mines of Arizona, Utah, and Nevada. The nature of those deposits is such that the tonnage and grade of ore reserves permit of a reliable estimate. The total developed ores in these mines, on the basis of the 1917 rate of production, assures a life of 16 years to Inspiration, 18 years to Nevada Consolidated, 25 years to Ray Consolidated, and so on.² The mines in Arizona are assessed at a valuation which takes into account the total ore reserves. The assessment of copper mines

¹ W. L. Uglow, *Methods of Mine Valuation and Assessment*, p. 46.

² L. H. Goodwin, "The Porphyry Coppers," *Engineering and Mining Journal*, November 2, 1918.

in Michigan are also "cumulative" in the sense that a valuation is placed on the total estimated ore reserves. Yet the value of the copper mines in either state has not been destroyed.¹

The idea that every ton of ore in the ground, long before being reached, bears a part of all the taxes ever paid on the mine is based upon a misunderstanding of the nature of taxation. It is true that under the prevailing system in Montana, as in most other states, taxes are assessed on property as measured by its market value. But this is a mere method of obtaining a basis for taxation and does not alter the fact that taxes are really paid out of current or anticipated earnings. The farmer pays his annual taxes out of the annual produce of his farm; the manufacturer out of the earnings of his factory, and so on. The mine owner is in the same condition. A producing mine is expected to yield a certain annual income for a certain number of years. This estimated income is capitalized and forms the value of the mine. When this value is assessed for purposes of taxation the taxes are paid as they fall due from the annual earnings of the mine. The Anaconda Company, in particular, has followed the practice of including taxes in general operating expenses.

The complicated structure built upon the fact of the exhaustibility of mineral deposits thus crumbles into nothingness. Even the homely simile of the piece of cheese is a logical fallacy. The comparison must assume that the piece of cheese has a definite place in our complex economy. It may be a piece of cheese in mother's pantry. In that case it is one of those pieces of personal property which will surely escape the most keen-eyed assessor. But the piece of cheese may also be merchandise in the grocery department of one of our well-conducted mercantile establishments. Suppose "the piece of cheese" is large enough and fresh enough to last three years without deterioration. The assessor, of course, cannot miss such a huge and odorous thing. He will assess it on its full value the first year; then he will assess what is left after the first year's sale the following year; and the third year he will again assess the remainder a third time. Evidently, the cheese is made to bear a "cumulative" tax. But the value of the last piece of cheese to the merchant is no less than that of

¹ For a fuller discussion of methods of mine taxation see Chapter X.

the first. If he has any business sense at all, he sells his cheese at a price which not only returns the original cost, selling costs, taxes, and other expenses, but a goodly profit. If a mine is comparable to a piece of cheese, it is evidently subject to the same economic laws. While it lasts, it pays taxes out of what it earns. After it has been consumed, it ceases to pay taxes.

CHAPTER IX.

THE ASSUMPTION OF RISK IN MINING.

The speculative character of mining has had and still has a large place in all discussions of mine taxation. Those who demand special consideration for the mining industry are in the habit of pointing to the "fascinating gamble of mine operation." In their opinion the hazard of mining is far greater than that of any other business, and places mining in a class by itself. Considering the State of Montana only, it has been said that "millions upon millions of dollars have been spent in this state in mining ventures that have never returned to the investor one dollar in the way of reimbursement," and that in "the Butte camp there are operating today, because of conditions which create a favorable expectancy, single mines upon which many millions of dollars have been expended that have never returned a dividend."¹ It has also been asserted that mining as a whole has never been profitable, and that more money has been put into mines than ever, was or ever will be taken out of them.

The problem is undoubtedly very important and is in need of a clear and careful analysis. Whether we are aware of it or not, there is an element of risk in everything we plan or do. The sure things in life are few, if any. Every form of human activity has its minor and major risks. The wage earner is subject to the risk of accident and industrial disease; the commercial traveler bears the risk of accident on the train; the physician assumes the hazard of infection and all that it entails. In a word, life involves the taking of chances in a greater or less degree constantly and continuously.

Aside from the hazards which are common to most, if not all, phases of human endeavor, the risk peculiar to business may be defined as the hazard of total or partial failure. More concretely this means the danger of total or partial loss of either the capital invested in business, or of the return on the investment,

¹ C. F. Kelly, *Mining Taxation in Montana*, p. 14.

or of both. Every business failure usually means a loss of interest or dividends for some period of time and a loss of part or of all of the capital represented by the business.

It is the general opinion of economic writers that the so-called entrepreneur assumes the risks of business and that his profits are the reward for risks assumed. Where business is conducted by large corporations whose capital is contributed by many large and small investors, the stockholders are those who take the risk and who find their reward in dividends received. This, however, disregards the element of risk in bonds. Few bondholders can be absolutely sure that they take no risks in placing their faith in the bonds held. It is, therefore, more proper to say that the risks of business are distributed among those who lend their money on interest only and those who assume the risks of ownership and control, though the much greater risk is carried by the latter.

The losses in business may take place in two ways. A business may fail bringing total or partial loss to all those who have an interest in it. Or an individual investor may buy and sell stock in a corporate enterprise in a manner which will result in loss to him, though the business as a whole may be profitable in the long run. Different elements of risk are involved in these two procedures, and in estimating the hazard of any particular business or industry these two sources of loss must be kept distinct.

Taking business as a whole, the extent of the risk involved is very large. It has frequently been said that "90 per cent of all men who enter business fail at some time or other in their business career," and that "if the losses of business could be averaged against the profits, it would clearly appear that the average business man is fortunate if he secures fair wages of superintendence and a moderate return on his capital investment."¹ An effort to measure more accurately the risks of business from year to year is made by Dun's *Review* which publishes annual statistics of commercial failures in the country. Table XXVI presents a summary of the significant facts for the ten years 1908-1917.

¹ Sherwood Meade, *Economics (Modern Business, Vol. I)*, p. 288.

MINE TAXATION IN MONTANA

TABLE XXVI.

Year	No. of failures	No. of business concerns	Per cent of failures	Total liabilities
1917	13,855	1,733,225	.80	\$182,441,371
1916	16,993	1,707,639	.99	196,212,256
1915	22,156	1,674,788	1.32	302,286,148
1914	18,280	1,655,496	1.10	357,908,859
1913	16,037	1,616,517	.99	292,672,288
1912	15,452	1,564,279	.98	203,117,391
1911	13,441	1,525,024	.81	191,061,665
1910	12,652	1,515,143	.80	201,757,097
1909	12,924	1,486,389	.80	154,603,465
1908	15,000	1,447,554	1.08	222,315,684

These figures include manufacturing, trading and other commercial enterprises. They do not include banks or railroads. To supplement the above figures, Tables XXVII and XXVIII present the failures of banks and railroads for the five-year period, 1913-1917.

TABLE XXVII.

Year	Total No. of bank failures	Total liabilities	National banks		All other banks	
			Number	Liabilities	Number	Liabilities
1917	42	\$18,451,964	4	\$ 3,700,000	38	\$14,751,964
1916	50	10,396,779	8	1,755,000	42	8,641,799
1915	133	37,223,234	18	13,649,000	115	23,574,234
1914	212	56,005,107	19	9,606,098	193	46,399,009
1913	120	31,546,314	7	5,197,336	113	26,348,978

TABLE XXVIII.

Year	Foreclosure sales of railroads		
	Number of roads	Mileage	Stocks and bonds outstanding
1917	20	10,963	\$557,846,348
1916	26	8,355	703,444,855
1915	11	3,914	285,258,782
1914	9	1,470	83,189,500
1913	6	1,159	86,163,850

The above three tables suggest the extent of total and partial loss in all branches of business. From Table XXVI it may be seen that in manufacturing and trading alone there were 156,790 failures between 1908 and 1917. During the same period the total number of business concerns increased from 1,447,554 to 1,733,225, that is, by 285,671. In other words, the number of failures was 54.8 per cent of all new enterprises.

But even this figure does not present a complete picture, for it does not include "numberless instances of financial embarrassment which are settled out of court the still larger number of cases where a business concern gradually sinks its capital until finally the enterprise is sold or is transferred on some contractual basis, thus bringing the enterprise into the hands of new men who supply fresh capital which is either sunk or makes the business a success." It is also known that thousands of small retail stores and of many other business lines, in which full and accurate accounts are not kept, lose money continuously over a period of years, without even the proprietor being aware of it. If all these failures and losses could be accurately measured, the picture would be really appalling.¹

The causes of failures have been grouped into two main classes: causes for which the management of the failing concern may be held responsible, and outside factors over which the business can exercise little or no control. In the first class are such causes as lack of capital, incompetence, bad financial policy, granting of unwise credits, etc. The second class includes losses by storms, floods, failures of other concerns, changes in demand, severe competition, etc. It is estimated that about 80 per cent of all failures are due to causes of the first class and about 20 per cent to those of the second class. The most important and frequent causes of failure necessarily vary from industry to industry, and the hazard of any one industry depends to a very large extent upon the nature of the causes which are most frequently responsible for failure.

No data are available for a comprehensive comparison of the relative risks of different kinds of business enterprise. As the

¹ William Lough, *Business Finance*, p. 574.

issue in Montana is largely, if not entirely, between the mining companies and the farmers, it may be well to quote expert opinion on the relative hazard of the two industries. The risks of farming are well emphasized in the following quotation :

"The farmer supplies the capital for production and takes the risk of his losses ; his crops are at the mercy of drought, and flood, and heat, and frost, to say nothing of noxious insects and blighting diseases. He supplies hard, exacting, unremitting labor. A degree and range of information and intelligence are demanded by agriculture which are hardly equaled in any other occupation. Then the risk of overproduction and disastrously low prices. From beginning to end, the farmer must steer dexterously to escape perils to his profits and indeed to his capital on every hand."¹

This is a picture of farming as it is carried on throughout the country. Those who live in Montana need not be told that the chances of farming in this section of the country are infinitely greater because of the quality of the land and of the system of agriculture in use. The following quotation deserves attention because it sums up so well the ideas of the western farmer on the subject :

"In the West chances are a hundred to one against the farmer. The wheat crop is a gamble pure and simple. Big crops mean big fortunes. *A failure on a crop means ruin.* You can talk your head off to the farmer about the folly of depending on a one-crop system, of putting all his eggs in one basket, and so forth ; as long as one year's crop may mean a fortune, western farmers will chance all on that one crop. . . . Whether he can pay his debts, whether the mortgage will be foreclosed, whether he can build a house and educate the 'kids,' and buy a motor and take a vacation that he really needs,—all depends on the fickle jade called Fate from August to September. No Wall Street broker hanging by the margin of an eyebrow to win a fortune ever feels more of a gambler's agonies than the western wheat farmer in a year when the wet spring has delayed seeding. . . . It may be added that 'wheat' is by no means the only agricultural venture about which this story of farmer's speculation might be told. The cattle-feeder takes long chances in the hope of making large gains. The southern truck-grower may stake his all on a big

¹ United States Department of Agriculture, *Yearbook for 1910*, p. 26.

acreage of tomatoes or onions; the westerner plunges in fruit, sugar beets or cantaloupes.”¹

In contrast with the above statements of general and special risks inherent in farming, the opinions of mining operators and investment experts on the hazards of mining are very favorable indeed. One of them writes:

“The admission must be made with regret that most mining companies are failures, but while this is true of mining, it is also true of other companies, for the records show that *90 per cent of corporations are failures and go out of existence, many of them after only a year's existence.* This being the fact it must be admitted that *failures in mining are not more frequent than among ordinary corporations.*”²

This is a comparatively conservative statement. But one whose mining experience has been world-wide and whose opinion has probably more weight than that of any other man of his time, namely, Mr. Cecil Rhodes, made a far more favorable statement on the superior advantages of mining. His statement is of greater value also because it has greater precision. Says Mr. Cecil Rhodes:

“I have made a great study of the mining question and have statistics not only of Great Britain and Africa, but of the world, carefully compiled, related to this proposition, so that I ought not to be in error. . . . My investigation . . . shows *that farming is more risky than mining; that 29 per cent more people lose money and fail in the mercantile business than in mining, and that 41 per cent more lose money in the manufacturing business than in mining, and 17 per cent more men lose money in any other business than in mining.* I believe that investment in good mining stock is the most profitable investment and very much the safest; and is the safest because your security is the ore itself.”³

Reliable and expert mining engineers have for years pointed out that a major part of the losses incurred in mining are due, *not* to the hazards inherent in the industry, but to the general speculative tendency of the public which clings to mining as the

¹ Nourse, *op. cit.*, pp. 878-9.

² Francis C. Nicholas, *Mining Investments*, p. 27.

³ *National Tax Association, Proceedings for 1914*, p. 345.

most attractive outlet for its gambling propensities.¹ The history of mining and the spectacular instances of great fortunes made in it keep alive the faith in the possibilities of a "lucky strike" and prompt people to stake their all on a chance. Regardless of good advice to the contrary, large numbers persist in "taking a flier" in mining and place their money with such little care and discretion that a similar procedure would ruin the reputation for common sense of an investor in any other securities. High sounding and "flamboyant" prospectuses and imaginative "literature" in the form of circular letters, etc., are still effective in connection with mining ventures which would arouse only amusement in the case of ordinary business enterprises. Investments are made without proper investigation into the character of the persons promoting the enterprise or into the nature of the property. The failure to employ competent engineers to report on the property is one of the causes most "prolific in unfortunate results."²

This cause of loss probably more than any other is responsible for a large share of the greater risks of mining. It is clear, however, that the mining industry cannot and should not be burdened with responsibility for such losses. A considerable part of such "losses" are not losses in the real sense of the term, but mere transfers of money. A clever and persuasive promoter who succeeds in directing the flow of money from the pockets of credulous investors into his own, on a promise which has no basis in property or anything else, merely effects a transfer of values to his own advantage. His operations are based on the assumption that "a fool and his money are soon parted." But even in those cases where the money invested is applied to the process of mining and is lost, the burden of responsibility does not rest upon the industry, if no proper preliminary investigations are made. Mining has developed a highly complex and scientific technique, as a means of guidance and precaution, and those who fail to avail themselves of this technique should blame themselves for the consequences.

Another cause which is prolific of loss in mining lies in the

² F. C. Nicholas, *Mining Investments*, p. 30.

¹ Percy William, "Causes of Failure in Mining," *Engineering and Mining Journal*, January 31, 1903.

eagerness to inflate the value of the property by means of improper financial policies. Mines are only too often capitalized for an assumed worth which is not even warranted by prospective possibilities. To arouse interest in the property, dividends are frequently declared where no real profits can be shown, the payments being made from the capital invested. The promoters who indulge in these and similar practices are usually eager for large and quick profits and have but a secondary interest in the welfare of the enterprise. The burden of over-capitalization, the failure to provide for contingencies, the eagerness to pay dividends at any cost, account for many failures in mining which might otherwise have been a success.

A third cause of failure is unwise management. It has been pointed out repeatedly that many a failure in mining has occurred because machinery was acquired before the character of the ore was known and its proper treatment ascertained; or because mills and reduction works were built before the exact process required by the ore was fully established; or because smelters and reduction works were erected when there was not enough ore to keep the mill in steady operation. The failure to insist on frequent and complete reports, the impatience of investors with competent and careful managers and superintendents who would not accede to unwarranted demands, and many similar causes have been found time and again, singly or in combination, to account for mining failures which were otherwise not inevitable.

The desire to speculate, bad financial policy, and unwise management may be more frequent causes of failure in mining than in other industries. But they are in no way peculiar to mining. As indicated above, these causes grouped in class one, as those for which the management may be held responsible, account for 80 per cent of all business failures. The important thing about this group of causes is that they are subject to human control. A better business education, more intensive commercial training, the enforcement of higher standards of honesty and business morals, a more sober and careful state of mind on the part of investors, will greatly reduce losses from these causes in all business, and in mining in particular.

Apart from these and other causes of failure which are char-

acteristic of all business enterprise, such as possible fluctuations in demand and price, there is one source of risk which is peculiar to mining. That is the uncertainty of the amount of commercial ore in the mine and the possibilities of a decrease in metallic contents. This is a serious cause of hazard. But the whole development of mining, as a business, has been in the direction of reducing this hazard by judicious exploration work preceding exploitation. Of course, in mining prospects this risk is as great as ever, and in properly calculating the risk for the industry as a whole, prospects and non-producing mines should be distinguished from producing mines. The former are more or less speculative ventures and should be treated as such. Though they occupy a large place in the minds of gamblers and speculators, the fact remains that the great industry of metal production is based on developed mines, and in these the chances of risk under normal conditions can be calculated in such a way as to reduce the margin of error to a minimum. Fifteen years ago, the *Engineering and Mining Journal* summed up the situation in the following words:

“Mining undertakings come to grief so often, not so much on account of failure to attain an investment basis, but because they are not put on a business basis. People play the fool and expect miracles to happen. The same procedure would ruin a grocery establishment. Because the occurrence of ore in nature is uncertain, and mining as a consequence must necessarily be speculative, there is no reason for piling human foolishness on the top of nature’s niggardliness. *Of well-conducted mining enterprises it can be said that they meet with a percentage of success as large [as], if not larger than, any ordinary manufacturing undertaking.* The smashes are more spectacular and the successes are more magnificent in the former case, but the average result does not, as a rule, favor the apparently safer form of industry.”¹

Since those words were penned, much progress has been made both in the technique of mining and in the understanding of mining finance. Such universally known and expert mining engineers as J. R. Finlay and Herbert C. Hoover have pointed out

¹ *Engineering and Mining Journal*, March 21, 1903.

that under proper and conservative management the losses in mining can be considerably reduced. Says Mr. Finlay:

"It is no argument to say that mining shares are mainly used as counters in a game. That is partly true. That it is true at all, to any greater extent in the case of mines than for other securities, is due only to the fact that a portion of the public is imposed upon by false analogies. In other words, they are often induced to buy highly speculative mining stocks on the same income basis as they buy the soundest securities. The very mining shares that I have called 'highly speculative' might in many instances at a sane valuation be just as 'sound' as the soundest."

Mr. Finlay says further:

"The great fault with the mining business from the point of view of the moderate investor is that it is very easy for the sake of a fair amount of interest to lose the principal. There is no need of this. By studying out the vital question of the life of a mine with its concurrent rate of amortization, and by steadily refusing to believe that the current construction is 'capital,' one may eliminate overvalued properties pretty rapidly."¹

The same ideas are defended by Mr. Hoover in his standard work, *The Principles of Mining*. According to Mr. Hoover, when estimates of the value of a mine are based on properly secured data for "proved ore," there is "absolutely no hazard" in so far as "continuity in metal contents" and "in volume through the estimated area" is concerned. Mr. Hoover also maintains that risks of management, appreciation of costs, changes in metallurgical treatment and price of metal may be largely eliminated by conservative and proper methods of calculation. Mr. Hoover's conclusion may be summarized in his own words:

"Mining has reached such a stage of development as a science that management proceeds upon comparatively well known lines. It is subject to known checks through the opportunity of comparisons by which efficiency can be determined in a manner more open for the investor to learn than in any other form of industry. While in mining an estimate of a certain minimum of extension in depth, as indicated by collateral factors, may occasionally fall short, it will in nine cases out of ten be exceeded. If investment

¹ J. R. Finlay, *The Cost of Mining*, p. 51.

in mines be spread over ten cases, similarly valued as to depth of extension, the risk has been virtually eliminated. *The industry, if reduced to the above basis for financial guidance, is a more profitable business and is one of less hazards than competitive forms of commercial enterprises.*"¹

Mr. Hoover is emphatic in laying the blame for any other opinion which is in vogue about the risks of mining where it belongs. He continues as follows:

"Unfortunately for the reputation of the mining industry and metal mines especially, the business is often not conducted or valued on lines which have been outlined in these chapters. There is often the desire to sell stocks beyond their value. There is always the possibility that extension in depth will reveal a glorious Eldorado. It occasionally does, and the report echoes round the world for years, together with tributes to the great judgment of the exploiters. The volume of sound allures undue numbers of the venturesome, untrained, and ill-advised public to the business together with a mob of camp-followers whose objective is to exploit the ignorant by preying on their gambling instincts. Thus a considerable section of metal mining industry is in the hands of these classes and a cloud of disrepute hangs ever in the horizon."²

Such a condition can be remedied only by education and the dissemination of correct information on the subject. It is hardly proper to encourage the exaggerated idea of the hazards of mining in the popular mind even for the purpose of any possible advantage in matters of taxation. The views of Cecil Rhodes, Hoover, Ingals, the editors of the *Engineering and Mining Journal*, and others, must be made common knowledge. These views do not imply the possibility of eliminating all speculative elements from mining. That is unthinkable not only in mining but in many another business. But the statements quoted above and the facts on which they are based do make it clear that the necessary assumption of risk in mining is, with some exceptions, not greater than in many other industrial enterprises. This fact makes the claim for the special taxation of mines based upon the argument of risk more doubtful and less readily acceptable.

¹ Herbert C. Hoover, *Principles of Mining*, p. 183. Italics mine.

² H. C. Hoover, *op. cit.*, p. 184.

Of course, some people interested in mining ventures will continue to indulge in practices condemned by all those who have knowledge and experience and who wish to place the industry on a higher plane of security. These people must bear the consequences of their own practices. Their folly is no excuse for absolving others from their duty.

The degree of risk involved in mining in Montana is a specific question which could be answered only on the basis of a careful examination of all the data relating to the subject. The distinction between prospects and developed mines which was made above must be kept in mind in considering the Montana situation. It is generally conceded that the former present a problem of their own. The discussion, therefore, is here confined to the developed mines of the Butte district. It is believed that the records of the A. C. M. Co. contain extensive data which permit close estimates of the profitableness of the mines of the district for many years to come. These data are not available, but there is ample testimony which is sufficiently varied and reliable to suggest an answer to the question.

In considering the risk involved in the business of the A. C. M. Co., it is necessary to remember that this company is not a mere mining enterprise. It has been said that "Montana is an empire in which the A. C. M. Co. supplies the major part of the raw material, including metals, coal and timber."¹ But the A. C. M. Co. is even more than that, because it not only furnishes the raw materials, but also transforms them into manufactured articles. In fact, the A. C. M. Co. is "a great industrial company with important mining interests, and so differs from the mining companies pure and simple."² If it is true that the risks of industrial enterprises are smaller than those of mining, then the Anaconda Company should be credited with the greater security it derives from its composite character. The literature sent out by many of the brokerage firms of Wall Street emphasize this fact. One of them writes:

¹ *Engineering and Mining Journal*, Editorial, November 17, 1917.

² *Engineering and Mining Journal*, Editorial, November 24, 1917.

"Anaconda may be old as a copper producer, but it is in its infancy as a manufacturing enterprise and would seem to have many years of prosperity ahead."¹

The same firm writes in its weekly news-letter that

"Anaconda is an investment among mining stocks with a past record of achievement and a future promise second to none."²

It may be said, however, that in so far as Montana is concerned, the whole superstructure of the A. C. M. Co. rests on the Butte mines, and that the question of their life is the fundamental one. The testimony on this phase of the subject is no less favorable than that quoted above. In a little booklet published in July, 1916, under the title *The New Anaconda*, the question is raised "How long will Anaconda last?" The answer to this question is contained in the following lines:

"It is the practice of Anaconda to block out ore in advance only sufficient to meet the requirements for immediate operation; generally speaking approximately two year's supply of ore is carried ahead. If there were indications of diminution of width or impoverishment in depth, there might be grounds for blocking the ore out in advance regardless of the expense involved; *but the evidence revealed in the present lower levels is precisely to the contrary.* The development work done at the present lowest level—3400 feet—while not extensive shows ore of about the same tenor as is now being mined in the upper workings. . . . The engineering and geological staffs, through the application of the mathematical principles of geology, are constantly locating bodies of ore in parts of the upper levels, formerly overlooked in the course of the cruder mining operations of early days. These add materially to reserves. It must not be forgotten that the expected life of the deposits has been prolonged in an important way through the addition of reserves of ores formerly considered of no value, but which, under new metallurgical methods already described, are now available for profitable treatment. *The question of Anaconda's life, therefore, is one that need not be considered for many years to come.*"³

¹ Frank Lilly & Co., August 30, 1918.

² Frank Lilly & Co., November 29, 1918.

³ I. Eugene Meyer Jr. & Co., *The New Anaconda*, p. 29.

Another bit of testimony was furnished a few years ago by Mr. Horace Baker, editor of the *Copper, Curb and Mining Outlook*, in a review of the Butte district favorably reported by the *Anaconda Standard*. The most significant lines in this review are as follows:

"Formerly it was believed that the great copper veins were confined to the Anaconda hill. This theory has been exploded by development work in the Pittsmtont property—now a part of East Butte—which revealed rich copper deposits far to the south on the level of the 'flat'; and by equally promising veins to the north, east, and in almost every direction. *Still with all the new prospects opening up, the old mines show no indication of exhaustion.*

"The underground workings of the mines aggregate about 2,000 miles. The deepest shaft is 3,400 feet. There is sufficient ore blocked out to run many of the great mines at their present capacity for many years without further development. . . . And when we look ahead into the millstone of the future there is a longer lease of life apparent for Butte than any other district engaged in the production of copper. . . . There is every reason to believe that there is at least 2,000 feet of deeper mining below the deepest shafts in the district which remains to be done on a profitable basis in Butte."¹

No less optimistic are the statements and prognostications made in a presumably official way by Mr. John H. McIntosh, mining editor of the *Butte Miner*, in the 1914 edition of *Montana* which is published by the Montana Department of Agriculture and Publicity. Referring to the A. C. M. Co., Mr. McIntosh characterizes it as "a company that has proved copper mining to be a business in which the element of chance is eliminated as far as it can possibly be done."² And speaking of mining in general, Mr. McIntosh says:

"Mining in Montana is but an infant in swaddling clothes. A few decades hence will find it a mighty giant of an industry and the millions of dollars in ore already extracted from her ground will seem small in comparison with the multiplied millions still remaining and which will be mined by the generations that are yet to come."³

¹ *Anaconda Standard*, January 31, 1916.

² *Montana*, Department of Agriculture and Publicity, 1914, p. 165.

³ *Ibidem*, p. 162.

This statement may seem unduly inflated by the exaggerated exuberance characteristic of all "publicity" work. But its substance has been corroborated by one whose words are as guarded as they are weighty, and whose position precludes the possibility of doubting either the source of his information or the validity of his conclusions. At a banquet given by the Butte Chamber of Commerce on December 8, 1915, Mr. John D. Ryan, president of the Anaconda Copper Mining Company, made the following statement:

"Butte's industry is mining. We acknowledge it and we are proud of it.

"Butte is the best thing in this line in the world. There never will be a mining camp that will be Butte's equal. The development of its metallurgy through men sitting around the board here tonight has made it a leader in the mining industry of the world.

"You can never close the mines of Butte in any sort of a market. *You can leave your property in Butte to your children with the assurance that you have left them a goodly heritage and they will have a good inheritance.*"¹

Mr. Ryan was followed by several speakers at the banquet who commended his words. Among these speakers was one whose remarks deserve to be quoted as they offer such an interesting opportunity for comparison. The speaker referred to is Mr. C. F. Kelly. His remarks were in part as follows:

"I must not close tonight without reference to Butte. There is no spot like it on the map nor will there ever be another. Think of it—a hill that has produced 7,000,000,000 pounds of copper, 4,000,000,000 ounces of silver and enough in the combined metals to redeem the debts of all the nations of the earth.

"We who have heard Mr. Ryan's prophetic remarks tonight and who may feel he is too optimistic will be consoled on this point if we recall an address he made at a banquet at the Thornton hotel several years ago. His predictions then have come true and he tells you now Butte has not yet reached the zenith of her power and richness."¹

In reporting these speeches, the *Anaconda Standard* made the following editorial comments:

"The notion has been prevalent in many parts of the

¹ *Anaconda Standard*, December 9, 1915. Italics mine.

country, and it has been shared by too many Butte people, that Butte was an exceedingly good town for a time, but that it was not permanent, that it could not last because it was a mining town, and that the only thing to do was to make as much money as possible and be all ready to get out before the crash came. That notion has been pretty well dispelled as the years have passed. *After the assuring words of Mr. Ryan nothing should ever again be heard of such talk.*"¹

In view of the corroborating evidence presented in this chapter, it is not difficult to heed this injunction.

¹ *Anaconda Standard*, December 10, 1915. Italics mine.

CHAPTER X.

THE ASSESSMENT AND TAXATION OF MINES.

The exhaustibility of mineral resources and the hazards of mining do not materially affect the problem of mine taxation. This has long been recognized by many students of the subject. In 1912, the National Tax Association which is composed of economists, lawyers and tax officials, appointed a special committee to study the question of mine taxation. The committee presented a careful report at the meeting of the Association in 1913, and laid down as a basic proposition that "there is nothing in the condition of the mining industry which entitles it to greater leniency of treatment than the great mass of real estate and other property, subject to the general property tax."¹

Stripped of all irrelevant issues, the problem of mine taxation is primarily and essentially a problem of valuation and assessment. This is inevitable under the system of the general property tax under which the attainment of equality and uniformity is necessarily dependent on the initial step in the process of taxation which is the assessment of property. The whole superstructure rests upon the fundamental act of placing a correct value upon every kind and class of property.

It is the habit of many representatives of the mining interests to contrast the great difficulties of placing a value upon a mine with the ease of determining the value of all other property. The pamphlet on *Mining Taxation in Montana* may again be quoted for a simple and expressive statement of this point of view, which is summarized in the following words:

"Excepting those comparatively few cases where mines consist of more superficial deposits, easily measurable from the surface, no human being can place an accurate value upon a mine. In the case of a farm, the acreage, the character of the soil, the crop return, the locality in which it exists, the market price of surrounding property, its proximity or remoteness to transportation facilities, are all factors which are available, in reaching a conclusion as to

¹ *National Tax Association, Proceedings for 1913, p. 383.*

its value. In the case of real estate, the rules of measurable value are *likewise easily ascertainable*. But who is there who knows or can know the value of a mine? . . . I challenge any man living to place a value upon the mines of Butte. Their history has been one of wonderful growth. All of Nature's known laws have been violated in her seeming anxiety to store with unparalleled abundance the treasures distributed in the Butte hill, but no man can look further into the ground than actual development warrants, or make safe prediction of possible outcome or enduring life."¹

Mr. Evans, counsel for the Anaconda Copper Mining Company, has expressed the same thought in the following words:

"In practically every instance it is a physical impossibility to determine the true cost value of a mine such as are found in Montana, because the value of that mine is largely an unknown quantity until the mine is exhausted and the value reaches zero."²

This contrast is somewhat misleading. Though the process of assessment presents many gradations of difficulty, according to the property involved, it cannot be said to be "easy" in any case. The assessment of rural and urban land has been a source of endless difficulties and is still an unsolved problem in many parts of the country. True, in some states the assessment of realty has been reduced to a series of more or less precise processes and has thereby been made easier for the tax official. But the reason for this simplification lies not only in the nature of the property, but also, and to a greater extent, in the careful and systematic efforts which have been applied for nearly a generation to the solution of this problem. Tax officials, expert appraisers, real estate owners, and others have lent their combined knowledge and experience to advance the cause of scientific assessment of real estate. The greater ease and certainty of realty assessments is the result of these efforts.

But aside from real estate, there are many classes of property the valuation of which has been and still is a matter of great difficulty. It is only necessary to mention public utilities to suggest a problem which has taxed the patience and mental re-

¹ C. F. Kelly, *Mining Taxation in Montana*, pp. 13-14. Italics mine.

² L. O. Evans, *Butte Miner*, March 14, 1918.

sources of tax officials. Merchant's stock and industrial plants are illustrations of difficulties of another kind. No assessor ever thought that the valuation of business and mercantile corporations was an easy job. But it never occurred to any one to declare that because of these difficulties the assessment of such property should be made in the easiest way possible without regard to consequences. On the contrary, these difficulties have stimulated the closest study of the problems involved and have led to the elaboration of new and more accurate methods.

It is claimed, however, that mines are an absolute exception to the rule and that no valuation can be placed upon a mine until it is exhausted, that is, until it is too late to collect taxes from it. If this claim be granted, the logical conclusion would be to give up completely the attempt to assess mines under the general property tax. If mines cannot be assessed in conformity with the principles of the general property tax, they should be excluded from the classes of property subject to that tax and should be taxed in some other way.

There are three possible methods of mine taxation which do not involve the necessity of placing a value on the mining property. One is a tonnage tax; the other is a tax on gross earnings; the third is a tax on capital stock. All three methods have been tried at one time or another in one or more states. A tonnage tax was levied in Michigan from 1853 to 1891, and in Minnesota from 1881 to 1897. The law in Michigan at first imposed a tax of one dollar for each ton of copper obtained, ten cents for each ton of iron ore, and one-half cent for each ton of coal. The rates were revised several times and were finally fixed in 1872 at seventy-five cents a ton on copper smelted in the state and one dollar if smelted outside, one cent on iron ore, and one-half cent on a ton of coal.¹ These taxes were paid by the mines for state purposes only. In Minnesota the law imposed a tax of fifty cents on each ton of copper, one cent on each ton of iron ore mined and shipped and disposed of, "one-half of such payments to be credited to the general fund of the state and the other half to be credited to the county or counties in which such mines were located."² In 1896 the tonnage law was declared unconstitu-

¹ Lewis E. Young, *Mine Taxation in the United States*, p. 52.

² *Ibidem*, p. 54.

tional in Minnesota. The courts of Pennsylvania and Maryland have also held that such specific taxes are unconstitutional.

The demand for the reintroduction of a tonnage tax in these states has been made several times. The Minnesota Tax Commission in 1902 and again in 1908 recommended such a tax "as the only appropriate means for the taxation of the output of mines."¹ In Michigan there was a continuous demand for the enactment of a tonnage tax law which in 1914 culminated in a movement to force legislative action through the initiative. In both states the demand died out for a while, but it has been recently revived by the Non-Partisan League which came into existence in 1916. One of the points in the "pledge" which members of the League are expected to make, contains the demand for "a tonnage tax on ore production."

The tonnage tax has the advantage of simplicity, of being easily collectible, and of falling only on mines and mineral lands which are productive. It is also believed that such a tax would secure a large share of the mining profits to the state. That of course would depend upon the rate imposed. This may be illustrated by the situation in Montana in 1916. According to the Senate Tax Investigation Committee, the mining property of the state in 1916 paid \$1,325,792 in taxes. The United States Geological Survey reports the total number of short tons of ore mined in Montana in 1915 (which would serve as the basis of assessment in 1916) as 6,129,924. This means that in order to receive the same amount of taxes, it would have been necessary to impose a tax of 21.6 cents on each ton of ore. If the rate used in Michigan and Minnesota of 50 and 75 cents a ton had been imposed, the taxes received by the state would have been twice and three times as great respectively. A tax of 50 cents per ton would probably not be considered excessive.

However, the tonnage tax has also some disadvantages. It does not affect non-producing mines and mineral lands. It is uncertain, and the public revenue derived from it would fluctuate with the variations in production from year to year. The reports of the Geological Survey show that in Montana the production of minerals has varied considerably at times. It was, for

¹ *Ibidem*, p. 54.

instance, 5,960,118 tons in 1913, and 5,128,956 in 1914; a variation of 831,162 short tons or 14 per cent. Another objection is that the volume of output is not a measure of ability to pay because it disregards the costs of mining. Two mines having the same gross output per year may show different profits as a result of different percentages of metal in the ore, different costs of treatment, etc. The burden of taxation under such conditions would be heavier on the less profitable mines, and in order to equalize the tax it would be necessary to adopt the principle of graduation. But to graduate the rate would mean to determine the profit, and that would involve the necessity of appraising the property. In other words, a graduated tonnage tax destroys the simplicity and definiteness of the method. A non-graduated tonnage tax results in inequalities between different mines. The latter objection would probably have less force in Montana as applied to the Anaconda Copper Mining Company. Whatever inequalities would result between the mines of the Company from a non-graduated tonnage tax would be neutralized because the more profitable as well as the less profitable mines are under the same ownership.

Another method of taxation which does not require the valuation of mining property is an "output tax" or more properly a tax on gross earnings. Such a tax may be levied in several ways. The state may decide that the total amount of taxes in the state should be apportioned among the various industries. For instance, it might be decided that the mining industry in Montana should bear one-third or one-fourth of all taxes. Knowing the total amount of taxes to be levied, the proportion to be paid by the mines, and the total gross earnings of the mines for the year, the rate can be easily ascertained. This procedure implies a basis for apportioning the tax among the industries. "Gross earnings" or capital invested might serve as a basis, but in either case the objection could be raised that there is no necessary relation between such basis of apportionment and ability to pay. To apportion the taxes in accordance with net income, on the other hand, would raise again the question of placing a value on the mines.

An easier and more practicable way of using a tax on gross earnings consists in placing an arbitrary rate at a specified per-

centage of the gross value of the output. This method of taxation has been extensively used in Canada and only in a limited degree in this country. Wisconsin, for instance, assesses producing lead and zinc mines at one-fifth of the gross proceeds of the preceding year. The people of Montana are familiar with the tax in the form in which it is applied to common carriers and express companies. Prior to 1917 the Montana law required such corporations to procure a state license for which they paid in proportion to gross earnings. The tax was graduated, being \$5 per quarter for corporations doing business in an amount less than \$5,000, and \$225 per quarter for those whose quarterly business was \$75,000 or over. In 1917 a new law was passed imposing a tax of 5 per cent on the gross proceeds of all private car companies doing business in the state. A similar tax might be imposed upon mines. To cite again the situation in 1916, the Geological Survey reports that the mining industry in 1915 (the basis for assessing the tax in 1916) had a total gross value of \$89,147,138. To collect \$1,325,792 in taxes (the actual amount paid by the mining industry in that year) would have necessitated a rate of about \$15 per \$1,000, or about 1.5 per cent if the rate were uniform. A rate of 5 per cent, such as is imposed on private car companies, would have produced \$4,457,000 in taxes in 1916 and considerably more in 1917.

The advantages of the tax on gross earnings are approximately the same as those of the tonnage tax. It can be easily determined and administered; it absolves the tax officials from concerning themselves with the character of the mine, its value, probable life, net income, etc.; it is economical, as it involves no appraisal of the mines; it leaves little room for tax-dodging as the gross earnings are less difficult to determine. The disadvantages of this method of taxation are the same as those which were found in the case of the tonnage tax.

The tax on gross earnings has had a number of advocates in recent years, among them Mr. Emmet D. Boyle, Governor of Nevada and a mining engineer. Governor Boyle prefers this method of mine taxation to all others, because it is simple and sure to produce a larger public revenue than is now obtained from the mines.¹ On the other hand, the tax on gross earnings has

¹ E. D. Boyle, "Mine Taxation," *National Tax Association, 1915*, pp. 92-3.

been vigorously opposed by others. The Committee on Mine Taxation appointed by the National Tax Association criticised this tax in the following words:

“Gross income bears no uniform relation either to net income or to value. A mine with a gross income in any year of \$100,000 may have lost money and have no more ore to mine, or it may have made \$50,000 and have thirty such years to look forward to in the future, or it may have made \$10,000 net and have five years of similar business to look forward to in the future. With mines of very short life the gross income method tends to make the tax excessive. With mines of long life and relatively low cost of production, the method tends to yield an insufficient tax. As between mines, it is almost always unjust and unequal.”¹

This view was endorsed by the American Mining Congress at its annual conference in 1914.

A third method of mine taxation which does not necessitate an appraisal of the property is that of taxing the mines either on their capital stock or on their stock and bonded indebtedness combined. The “stock and bond” method has been and is applied to one or more classes of corporations in a number of states. California, for instance, has used this method in assessing its public utilities. The method consists in multiplying the total number of outstanding shares of stock and bonds by the average market value of the securities. The market value of the securities is obtained by finding the average quotations for a definite period of time. The California Tax Commission, for instance, used the market prices for the fifteen months from January 1, 1915, to March 31, 1916.² As few mining companies have a funded debt, the method, as applied to mining, would really mean placing a value on the mines equal to their capital stock during the year or other period. The method may be illustrated by the experience of Michigan where it has been used to appraise the copper mines. The valuation for 1916 was based upon the average stock quotation throughout the year. The closing bid price every Monday was used in determining the average for the year ending the second Tuesday in April, 1916. The mines were not assessed for the full value of the stock, but at

¹ *National Tax Association, 1913, pp. 389-390.*

² *Report of California State Tax Commission, 1917, pp. 23-5.*

a certain percentage: producing dividend paying mines were appraised at 66 per cent of the average quotation; producing non-dividend paying mines at 55 per cent; and the non-producing properties at 44 per cent. The total assessment of the copper mines of the state in 1916 was \$80,000,000.¹

The chief objection to this method is the fact that it results in a valuation which includes elements not usually reached otherwise, such as speculative values, good will, special processes and patents, etc. Besides, the number of shares bought and sold in any one day throughout a definite period may be comparatively small and may rise and fall in value as a result of purely local conditions or artificial stimulation. In either case, an assessment based on such market quotations would not reflect taxable value. The Michigan Tax Commission evidently wished to eliminate these disturbing influences by taxing only a percentage of the market value. In Montana the problem would be somewhat complicated by the fact that the quotations of the A. C. M. Co. undoubtedly reflect the value of its subsidiary departments and of its properties outside the state. These considerations prompted the Committee on Mine Taxation of the National Tax Association to oppose this form of taxation. To quote from the report of the committee:

“We are opposed to a tax based upon the market value of capital stock, because it lends itself so readily to wild cat schemes and because where the value of the capital stock has any solid basis or real meaning it rests upon exploration or development data and geological inference which can be used just as intelligently by expert appraisers as by the stock buying public.”²

It cannot be denied, however, that the method has the great advantage of simplicity and certainty.

The three methods discussed above have the common advantage of being easily administered; yet for one reason or another they have been discarded where tried. Today they are used but in a few states in this country and only in modified form. The method which is most extensively used is that of the general property tax. It is estimated that the states which tax mines

¹ L. E. Young, *Mine Taxation in the United States*, p. 192.

² *National Tax Association, 1913*, p. 390.

under the general property tax produce over 80 per cent of the total mineral output of the country.¹

The extensive application of the general property tax to mines is significant in view of the claim quoted above that a correct valuation of a mine is an impossibility. Tax authorities have not denied the great and special difficulties involved in appraising mines. But the general feeling that the mining industry was otherwise escaping its just burden of taxation prompted the legislatures of the various states to make a decided effort to solve the problem. Minnesota in 1907 and Michigan in 1911 led the movement for a proper physical valuation of mining properties. The Michigan State Tax Commission invited Mr. J. R. Finlay, one of the most distinguished mining engineers in the country, to appraise the iron, copper and other mines of the state. The procedure followed in Michigan attracted much attention, and the *ad valorem* method of mine valuation has since been the subject of incessant and animated discussion.

The *ad valorem* method is based on the assumption that a mine has a determinable value which depends upon a certain number of factors. In appraising the Michigan copper mines, Mr. Finlay used five factors:

1. The average cost of securing the products of a mine.
2. The average price at which these products can be sold.
3. The rate of production of the mine.
4. The time for which that output can be maintained.
5. The rates of interest to be allowed.

Mr. Finlay estimated average costs of production and average prices from the past experience of the mines and from the general trend of metal prices. On such basis it was simple to determine the average net profits. Given these factors and the probable life of the mine, the valuation is but a simple problem in the mathematics of investment. Says Mr. Finlay:

“The life of the mine is based partly on developed ore and partly upon an assumption of continuance of known ore bodies beyond the present bottom levels of the mines. The assumption of continuance is based mainly upon the extent to which the continuity of the deposits has been proved for the district and for the type to which the mine

¹ L. E. Young, *op. cit.*, p. 123.

belongs. The future value of a series of dividends is reduced to a present value by the annuity method; that is, a sum is calculated upon which the series of dividends shall pay 5 per cent interest and also provide each year a sinking fund installment which, invested each year at 4 per cent interest, and added to prior installments similarly invested and reinvested, will equal the sum taken. This sum is the amount which an investor can afford to pay for the property.”¹

Mr. Finlay’s procedure has been criticized by some as utterly fallacious. It has been contended that “estimates of further extensions” of ore and of “the average content of valuable minerals” are nothing but guesses in most cases; that the factor of average price to be obtained for the product is a “presumption and nothing else”; and that the other three factors are estimates subject to many errors, and that in view of the presumptive character of the data, not even “the most ardent advocate of mine taxation on a valuation basis” can “contend that an equitable distribution of tax burdens can be accomplished by this method.”² Though this criticism claims that errors are possible in all five factors, it derives its chief strength from the feeling that, in the words of a well known student of taxation, “any estimates of the value of the minerals in the ground must contain a large element of guesswork—diligent and scientific guesswork it may be, but guesswork still.”³

Others have recognized that the above criticism is too sweeping in character and have based their objections to the *ad valorem* method upon a more detailed analysis. Governor E. M. Boyle, in his address to the National Tax Association in 1915, made clear that the crux of the problem is the determination of the continuity in metal contents and in volume through the estimated area. Following Mr. Hoover, Governor Boyle divides all ore deposits from this point of view into four types:

1. Deposits of the infiltration type in porous beds, such as Lake Superior copper conglomerates and African gold bankets.

¹ J. R. Finlay, “Appraisal of Michigan Mines,” *Engineering and Mining Journal*, September 9, 1911.

² Heath Steele, “Mine Taxation,” *The Engineering and Mining Journal*, August 29, 1914.

³ O. Skelton, *National Tax Association*, 1908, p. 392.

2. Deposits of the fissure vein type, such as California quartz veins.

3. Replacement or impregnation deposits on the lines of fissuring or otherwise.

4. Deposits consisting of huge masses of ore such as the "impregnated copper porphyries" of Utah, Nevada and Arizona, and the iron ore deposits of Michigan and Minnesota.

Governor Boyle further quotes Hoover to the effect that "the uniformity of conditions of deposition in the first class has resulted in the most satisfactory continuity of ore and of its metal contents"; that in the second class, "there is laterally and vertically a reasonable basis for expectation of continuity but through much less distance than in the first class"; but that "the third class of deposits exhibits widely different phenomena as to continuity," and no generalization is, therefore, of any value. On the basis of this analysis, Governor Boyle concludes that a "mining engineer could with such data as ought to be available in a well conducted mine office make a fairly accurate appraisal of those properties coming under the first and fourth classes, could make an approximation of the value of the properties under the second class, and could "guess" at the values of the properties in the third class.¹ This criticism of the *ad valorem* method has also been presented by a number of tax officials.²

It is generally known that the great majority of mines in Montana, as well as in some other western states, belong in the third class. In most of these mines, the "ore in sight" is said to equal approximately two or three years' supply. It is claimed that it is unpracticable to carry development further than that because it would be impossible to keep the workings open.³ A valuation based upon "the ore in sight" would be purely nominal. On the other hand, the irregularity in form and uncertainty in tenor of the Montana ore deposits would, it is believed, make any estimate of probable or possible ore a mere guess. Honest differences of opinion might lead to "vexatious controversies" and litigation too costly to be tolerated. It is therefore

¹ E. D. Boyle, "Mine Taxation," *National Tax Association*, 1915, p. 87.

² P. J. Miller, *Arizona Tax Commission, Report for 1914*, pp. 56-62.

³ L. O. Evans, *Butte Miner*, March 14, 1918.

asserted that though the *ad valorem* method may be practicable in those states where the character of the ore deposits permits it, it is absolutely inapplicable in Montana.

In addition to this main criticism, the opponents of the *ad valorem* method maintain that its adoption would necessitate frequent appraisals which would require the services of technically trained men; that in the case of some properties the expense might be out of proportion to the revenue derived; that it would hinder development in the case of new properties and would encourage the rapid exploitation of ore-bodies whose existence had been proved. These critics admit, however, that the *ad valorem* method "if scientifically applied would exactly equalize the mining assessments with the assessment of all other property to which the same method of valuation and the same tax rate were applied."¹ In other words, they admit that under the general property tax the *ad valorem* method of mine valuation is logically the one which is most likely to bring about equality as between mining and other property.

It is exactly this admission which the advocates of the *ad valorem* method take as their starting point. In their opinion, a method which promises to equalize the tax burden between mining and other property is not to be lightly discarded, though it may seem to present insuperable difficulties. They insist upon the fact that, all uncertainties notwithstanding, mining companies have placed in the past and will continue in the future to place a value upon their properties, and that in doing so they use all available data to arrive at a correct estimate and apply definite methods of calculation to reduce the margin of error. An examination of the balance sheet of any well conducted company shows the amount at which the physical property is carried. As shown in Chapter VI the balance sheet of the A. C. M. Co. for 1917 carries "mines and mining claims, coal mines, water rights, and lands for reduction works and refineries, etc.," at \$74,704,518, and "buildings, and machinery at mines, reduction works, refineries, etc.," at \$51,881,399. The same or similar items may be found carried at definite values on the balance sheets of the other mining companies of this and other states. These valua-

¹ E. D. Boyle, *National Tax Association, 1915, p. 81.*

tions are arrived at in very definite ways. There may be a greater or smaller speculative element in the value fixed, and some uncertainty will always remain in such a valuation. But a degree of uncertainty cannot be avoided in the assessment of any form of property, and the best assessment is never more than as close an approximation to true value as the nature of the property will permit.

The case of the advocates of the *ad valorem* method may be best presented by quoting from the report of the Committee on the Taxation of Mines to the National Tax Association in 1913. This committee was composed of six members including Mr. C. M. Zander, chairman of the Arizona Tax Commission, C. P. Link, a member of the Colorado Tax Commission, and C. K. Leith, professor of geology at the University of Wisconsin. The committee declares emphatically that mines should be taxed "on the same basis as other property." The report then proceeds: "In such valuation there will necessarily be an element of uncertainty. This exists in the valuation of all property, particularly land and natural resources which have no 'reproduction' or 'reduplication' value. This uncertainty indeed characterizes all *ad valorem* taxation," but this can be overcome by

"a set of conscientious officials endowed with impartiality and industry, assisted by the necessary expert aid and furnished with all the data and information procurable regarding the properties they are called upon to assess. With these conditions satisfied, the element of uncertainty will be cared for by the exercise of reasonable judgment, as satisfactorily as the same element is taken care of in the assessment of city lots or public utilities."

The committee emphasizes the necessity of obtaining full and correct data.

"In valuing mines of this class (i. e., producing mines) it is particularly important that assessing officers and their experts should have free access to all the information and data in the possession of the owners and operating companies, and that such information should be supplemented and strengthened by the right, freely exercised and used . . . , of examining the property and making their own estimates of mineral content, quality of ore, and all other physical conditions involved in the appraisal. The

policy of secrecy, of withholding information, of shrouding the conditions which affect value in mystery has outlived its usefulness in the present state of American taxation. In Michigan, Wisconsin, Minnesota and other advanced states such information is freely given and has not been abused."

The committee summarizes its reasons for opposing other methods of taxation and then concludes as follows:

"In conclusion, your committee believes that the general method now used with variations in Michigan, Wisconsin, and Minnesota is, when carefully applied, on the whole the most satisfactory method of mine taxation now enforced in the United States. This method requires a measurement or computation: (a) of the ore in the mine, considering among other things the ore blocked out, the ore explored and the ore estimated to exist through geological inference and deduction, such inferences to be based on the history of the mine in question, the history of the district in which it is located, and the history of similar geological formations elsewhere; (b) the average annual production or shipment based upon the past history of the mine—or—where a mine of known value is withheld from production upon the history of similarly circumstanced mines and upon expert mining judgment; (c) the probable life of the mine, secured by dividing (a) by (b); (d) the average net profit per ton secured by deducting from the average price per ton the corresponding or offsetting expenses. This profit per ton multiplied by the average production or shipment yields the average net profit per year; (e) the value of the mine; i. e., the present worth of the annual profit or dividend throughout the future life of the mine, using an interest rate or basis which mining experience shows necessary to induce capital to invest in the mining industry at the place where the property is situated. In valuations made by this method it is essential that allowance should be made for an amortization fund when an equivalent allowance is not made through depreciation or exhaustion accounts which invested say at four per cent will provide for the return within reasonable time of the entire capital, not including the capital, if any, used in purchasing the mine or the mineral itself. Whenever new ore reserves are discovered, or a greater annual extraction takes place than that calculated, or any other factor changes and disturbs the calculation, a new appraisal should be made.

"In short, your committee recommends the application

of the property tax to this class of mines, the assessment to be made in general accordance with the methods used in Michigan, Wisconsin, and Minnesota, supplemented by expert judgment and all the relevant information that can be secured. *The most potent and convincing reason for this conclusion is found in the fact that it is this method which is used by properly qualified investors in the mining industry where so far as possible, speculation and the gambling element have been eliminated.*"¹

Since the above report was published, the *ad valorem* method of mine taxation has become more practicable as a result of federal tax legislation. As was pointed out in a preceding chapter, the Federal Income Tax law of 1916, as amended October 3, 1917, provided for certain deductions from taxable net income which in the case of mines included an allowance for depletion. Every mining company is permitted by the law and the regulations of the Treasury Department to extinguish the total amount of its invested capital which means either the "fair market value as of March 1, 1913," or the actual cost in case the mine was acquired subsequent to that date. In fixing the fair market value of a mine the Treasury Department prohibits speculative valuations and requires that the value "must be determined upon the basis of the salable value *en bloc* as of that date of the entire deposit of minerals contained in the property owned, exclusive of the improvements and development work; that is, the price at which the natural deposit, or mineral property as an entirety in its then condition could have been disposed of for cash or its equivalent." But the most significant provision which bears most directly on the subject of the chapter is contained in the following words:

"In cases wherein the quantity of the mineral deposit in the mines prior to March 1, 1913, can not be estimated with any degree of accuracy, it will be necessary, if depletion deductions are to be taken, for the individual or corporation owning the deposits, *with the best information available*, to arrive at the fair market value of the property as of March 1, 1913. . . ."

¹ *National Tax Association, 1913*, pp. 388-392. Italics mine.

² Italics mine.

This ruling of the Treasury Department completely ignores the elaborate arguments about the impossibility of placing a value on a mine until it is exhausted. It simply requires that such a valuation be made, and that where exact calculations are impossible, the valuation be based on "the best information available."

The most interesting thing in the situation is the reception accorded to the federal tax law by the representatives of the mining industry. There were some strenuous objections to the method of computing excess profits laid down by the law. A resolution was also sent to the Secretary of the Treasury by representatives of a number of mines in the stage of development requesting that the law be amended in such a manner as to make a distinction between "producing mines" and "development mines."¹ But with these and a few other minor criticisms, the chief provisions of the law were received with satisfaction. A special committee, appointed by the New York Section of the American Institute of Mining Engineers and composed of Mr. J. Parke Channing, Mr. C. F. Kelley, and Mr. John V. N. Dorr, prepared a careful and favorable report on the law. The committee characterized the provisions of the law concerning depletion as follows:

"clear, explicit, and . . . as fair and equitable as any legislative provision which could be adopted, particularly in its application to mining property acquired prior to March 1, 1913."²

In the words of the committee,

"the provision of the statute that 'a reasonable allowance shall be made for depletion' is all that the mine owners should ask, and is as much as the government should allow."²

But the most significant part of this report is that which deals with the question of valuation. This part of the report deserves to be quoted at greater length. Says the committee:

¹ T. O. McGrath, "Taxing the Prospector," *Engineering and Mining Journal*, November 9, 1918.

² "Application of Federal Income Tax Laws to Mine Taxation," *Engineering and Mining Journal*, April 6, 1918.

“ While there are always present elements of speculation, due not only to the inherent character of ore deposits, but also to the uncertainty of future market conditions and prices (with the exception of gold), there are, nevertheless, certain principles which have become established as classic practice in mine valuation.

“In Hoover's treatise on the principles of mining, page 1, it is stated:

“The valuation of a metal mine of the order under discussion depends upon

- (a) The profit that may be won from ore exposed.
- (b) The prospective profit to be derived from extension of the ore beyond exposure.
- (c) The effect of a higher or lower price of metal (except in gold mines).
- (d) The efficiency of the management during realization.’

“For the purpose of discussion he classifies on page 3 the factors which arise in connection with the subject, as follows:

- (a) Determination of average metal contents of the ore.
- (b) Determination of quantities of ore.
- (c) Prospective value.
- (d) Recoverable percentage of gross value.
- (e) Price of metals.
- (f) Cost of production.
- (g) Redemption of re-amortization of capital and interest.
- (h) Value of mines without ore in sight.
- (i) General conduct of examination and reports.

“In chapter 5 of the same work there is a discussion of the principles of redemption and re-amortization of capital and interest too long to be discussed here, but *by the application of the tables calculated and published therein the present worth of a mine of known earning capacity, with developed tonnage, can be ascertained.*”¹

The committee further states that the application of these fundamental principles would solve the problem of determining the fair market value of a mine. The committee's opinion may be summarized in the following lines from its report:

“In other words, having arrived at potential earning value by taking tonnage, metal content, probable recovery, cost of extraction, average price of metals *and the life*

¹ *Ibidem.* Italics mine.

*of the mine at a definite output where delimited ore bodies permit and according to the best obtainable geological and engineering data in the case of fissure veins, lenticular and other deposits incapable of being accurately outlined, one is in a position, by using Hoover's or equivalent factors, to determine with more or less accuracy the present worth of the mineral deposit."*¹

For the people of Montana the above report has the additional significance of having been signed by Mr. C. F. Kelly, now president of the Anaconda Copper Mining Company. It would seem logical to conclude, that if the principles which were approved by Mr. Kelly and his associates were applicable to federal tax legislation, they could also serve as a basis for state taxation. It would also seem logical to suggest that all the data prepared for the federal government should be used by the state for its own purposes. As a result of the Federal Income Tax law, the A. C. M. Co. and other mining companies in Montana must now have among their records full data showing "fair market value as of March 1, 1913," estimates of probable life, annual depletion deductions, etc., in a word, all data which are sufficient for the placing of a definite value on a mine. In view of these recent developments and of the possible use of such data, the objections against the *ad valorem* method of mine taxation have lost much of their force. With all such data at hand, there should be little difficulty in applying the *ad valorem* tax even to the mines of Montana.

The case of the *ad valorem* method may be briefly restated in the form of the following propositions:

1. Mining engineers distinguish between the investment and speculative value of a mine; the former is based on tested data, the latter on less provable estimates.

2. In determining the investment or what Mr. Hoover calls the "basic value" of a mine, an estimate of probable life is inevitable.

3. The provision of depreciation, exhaustion, and amortization funds by all well-conducted mining companies, as well as the determination of profits, implies a definite estimate of the probable life of the mining property.

¹ *Ibidem.* Italics mine.

4. The corporation income tax collected by the federal government prescribes a method of computing net income which requires all the data that can be used to place a valuation upon a mine.

5. The most authoritative representatives of the mining industry have within the past few years admitted the possibility of estimating the ore reserves and life of a mine and of placing a value on it for purposes of taxation.

6. The value of a mine as determined by the records of mining companies and by special expert appraisal could be used as a basis for assessing mines under the general property tax.

In some states, however, the application of the *ad valorem* method of mine taxation has been found temporarily impracticable. To take its place, another procedure has been devised which places a value on a mine by multiplying net earnings by some definite factor. This may be done in several ways. The net earnings of each year may be taken as a basis and multiplied by two, three, four or any other number. Or the average net earnings of a number of years may be taken and multiplied by some number or "capitalized" at a certain percentage varying with the character of the mine. These procedures may best be illustrated by the history of mine taxation in Arizona. From 1907 to 1912 all producing mines in Arizona, which was then a territory, were valued "for an amount equal to 25 per cent of its gross output annually." In 1913 the Arizona legislature passed a new law under which mines were to be valued for taxation purposes at an amount equal to 4 times the net plus 12½ per cent of the gross output annually. This law expired in 1915, and no new law was passed by the legislature to take its place, thus leaving the entire matter in the hands of the tax officials. The Arizona Tax Commission then adopted the method of capitalizing net earnings in the following manner. All productive patented and unpatented mines and mining claims were divided into eight classes:

Class 1. Copper mines whose ore bodies are found in veins, fissures and lenses, and do not show evidence of exhaustion.

Class 2. Copper mines whose ore bodies consist of porphyry deposits and large acreages of contiguous ground largely unexplored and undeveloped.

Class 3. Copper mines whose ore bodies consist of developed low grade porphyry deposits.

Class 4. Copper mines whose ore deposits show evidences of exhaustion.

Class 5. Gold and silver mines whose ore deposits show evidences of exhaustion.

Class 6. Gold and silver mines whose ore bodies have not shown evidences of exhaustion.

Class 7. Zinc and lead mines.

Class 8. All producing mines of irregular output.

In addition to these classes, the Commission in May, 1916, created three more groups: *Subdivision A*, including all such properties as have entered the profitable productive stage during the year 1916; *Subdivision B*, including properties which have suspended profitable production during the period under consideration, for reasons other than market or physical conditions; and *Subdivision C*, including properties that have suspended profitable production when said properties could have been operated at a profit during the period under consideration.

The Commission then classified all the mines and mining claims of Arizona into these eight classes and subdivisions. In determining the net earnings of each mine, no deduction was allowed for mine depletion, interest charges, new construction, acquisition of new real estate or depreciation on personal property. Depreciation was taken care of by means of the factor used in capitalizing the mines. The average annual net proceeds for a period of four years was taken as the basis, and the factors of capitalization were 15 per cent for classes 1, 2 and 3 and their subdivisions; 20 per cent for class 4 and its subdivisions; 25 per cent for classes 5, 6 and 7; and $33\frac{1}{2}$ per cent for class 8. These capitalizing factors were considered sufficiently large to allow for depreciation, amortization, and capital charges.

The results of these various methods as applied in Arizona since 1910 may be seen from the following table.

TABLE XXIX.

Year	Total assessment of property in Arizona	Assessment of mining property of all descriptions	Per cent of total
1916	\$486,406,518	\$216,879,796	44.2
1915	420,532,411	159,109,288	37.4
1914	407,267,393	146,672,395	35.7
1913	375,862,414	140,488,648	37.2
1912	140,338,191	45,145,084	31.7
1911	98,032,708	19,242,331	19.3
1910	86,126,226	19,714,592	22.9

This table shows that when the method of valuing the mines at four times the net and one-eighth the gross output was introduced in 1913, it more than trebled the assessment of the mining properties, and that when the new method of capitalizing the net earnings was introduced, the valuation of the mines rose from 35.7 per cent of the total valuation of the state to 44.2 per cent in 1916. In 1916 the total assessment of Arizona was about three and a half times greater than in 1912; but the assessment of the mining property of Arizona was almost five times greater in 1916 than in 1912. Yet there is no indication that this increase in the assessment of mining property has in any way interfered with or discouraged the growth of the industry in that state. According to the report of the Arizona Tax Commission, but a few mining companies contested its findings and assessments.

It is interesting to note the results that would have been obtained, had Montana used the methods of assessing mines adopted in Arizona. The following table presents these results in comparative form for both methods described above:

TABLE XXX.

Year	Actual assessment of mining property in Montana	Estimated assessment of Montana mines based on Arizona method of multiplying net by 4 and gross by $\frac{1}{8}$	Estimated assessment of Montana mines based on Arizona method of capitalizing net earnings
1917	\$ 62,012,058	\$199,765,344	\$127,495,540
1916	43,710,854	125,814,812	109,145,926
1915	24,759,863	50,201,980	81,664,140
1914	26,178,435	54,732,046	.....
1913	27,759,234	66,991,389	.....

It may be seen from the above table that under either of the methods used in Arizona in the past five years, the assessment of mining property in Montana would have been at least from two to three times greater than it actually was.

Many tax officials and mining engineers who vigorously oppose the *ad valorem* tax on mines are in favor of taxing mines by multiplying net earnings by some factor, as described above. If this method were adopted in Montana, it would not eliminate all the defects pointed out in Chapter VII. But it would certainly raise the assessment of the mining industry and bring such assessments nearer actual market value.

In addition to the methods of mine taxation already discussed, another method must be mentioned, namely, that of taxing mines on their income. In many ways, such a tax would seem preferable to all the other methods described. It would eliminate the arbitrariness involved, for instance, in multiplying net earnings by some factor or in determining a rate on gross output. It would probably also be more conducive to the conservation of mineral resources and to the prosecution of exploration and development work. There are, however, many objections to this method which are summarized by the Committee on Mine Taxation to the National Tax Association in the following words:

"To compute net income, it is necessary to deduct as depreciation or depletion a share of the investment in the mine equal to the share of the mineral content taken out in the year in question; and to measure this share or percentage one must know or estimate the amount of ore in the ground. If it be true that the value of the mine can never be known until the last ton is mined it is equally true that the net income of the mine can never be known until the last ton is mined. The two methods of taxation require the same data.

"American property taxes are in general so high and take so large a part of the annual income that if converted into terms of income taxation they would appear excessive. Few legislatures could be persuaded to impose an income tax on mines equal to the share of the net income regularly taken from farms, railroads, and similar enterprises. ✓

"The property tax is imposed year after year on idle property or property which for speculative purposes is held out of production, whereas the income tax applies only

when the property is worked. So long as the property tax represents the general rule and is applied to other properties, it should be applied to mines.

"Finally, with the income tax, uncertainty and possible inadequacy of the tax are likely to result, unless the minimum output is regulated by the state."¹

In a sense, an income tax may be said to exist at the present time in Montana. The Corporation License Tax law, passed in 1917, is in reality a tax on the net income of corporations. That the A. C. M. Co. and other mining companies in the state are paying taxes under this law proves that they are in possession of sufficient data to estimate the probable life of the mines and the amount to be charged off for exhaustion in order to compute net income. As pointed out above, the availability of such data removes the most serious obstacles in the way of the *ad valorem* method of mine taxation. On the other hand, the experience of Montana corroborates the fears expressed by the Committee of the National Tax Association. The legislature of 1917 could not be induced to raise the rate of taxation to 2 per cent on the net income of corporations, though such is the rate in some other states. It was also impossible to pass an amendment to the law, providing for a graduated rate which would have relieved the smaller corporations and would have placed a larger burden on the larger and more prosperous corporations. It should be noted, however, that the present Corporation License Tax law is an instrument which can be improved and which can be made to serve the purpose of equalizing the burden of taxation between classes of property.

In discussing the various methods of mine taxation, reference has been repeatedly made to the differences between producing and non-producing mines. A frequent objection to one or the other method is that it would fall with equal force on productive and non-productive mines. The force of this objection is the general opinion that all mining claims for purposes of taxation should be divided into producing and non-producing, and that these two classes should be treated differently. The tax methods analyzed above were considered in relation to producing mines only. The latter are the foundation of the mining industry, and

¹ *National Tax Association, 1913, p. 390.*

the elaboration of proper methods for taxing them is the chief problem of mine taxation.

In so far as non-producing mines are concerned, the problem is to find a tax method which would not impose undue burdens and yet would not tend to discriminate in favor of such mining property as compared with other classes of property. It is generally admitted that the assessment of non-producing mines at "true value" can in most cases be little more than guesswork. The Committee on the Taxation of Mines to the National Tax Association expressed this opinion in the following words:

"The mineral content and value of unexplored and undeveloped ore bodies, patented mines and mining claims is frequently so uncertain that for this class of properties there is ample justification for conservative treatment and even for postponing the full possible claim of the state until actual knowledge of the situation can be obtained."¹

Just how non-producing mines should be assessed is a matter of dispute. Some states value them at the price "paid the United States therefor," that is, at five dollars an acre for quartz and two and a half dollars an acre for placer claims. Such is the law in Montana. In the State of Nevada they are assessed arbitrarily at fifty dollars per acre. In Michigan in 1916, their value was fixed at 44 per cent of the capital stock. The Committee on Mine Taxation to the American Mining Congress at its annual conference in 1914 suggested that "non-producing mining claims should not be assessed upon a value higher than adjacent land, *not* assessed for mining purposes, is assessed."² There are others who think that mineral ground should be completely exempt from taxation until it becomes productive.³ It is evident that such lenient treatment might encourage the speculative holding of mineral property. P. J. Miller, member of the Arizona State Tax Commission who generally favors conservative treatment of mining property, has pointed out that where a mining claim is situated in a proven district or lies adjacent to some producing claim "it is necessary to place a reasonable as-

¹ *National Tax Association, Proceedings for 1913, p. 388.*

² *Second Biennial Report, Arizona State Tax Commission, p. 62.*

³ E. D. Boyle, "Mine Taxation," *National Tax Association, 1915, p. 85.*

assessment on such ground in order to prevent persons, companies, or corporations from acquiring a large number of claims and letting them lie idle, thereby retarding development of a great part of an entire district."¹

Mr. Charles K. Leith, professor of geology at the University of Wisconsin, has also pointed out that large acreages of mineral lands in the Lake Superior region are held by old estates which originally acquired the lands for timber and are now selling off surface rights for farming, retaining the mineral rights. The original cost of this land has long since been returned, and the present owners may hold the mineral rights in reserve for a long period without much cost where not taxed. A tax on such unexplored mineral land would either stimulate exploration and production or bring the lands back into the patrimony of the state.² The question is of some importance in the State of Montana where reservations in deeds to the right of coal, oil, gas, etc., have for many years been made by corporations owning large tracts of land. It is also claimed by some that a distinction should be made between copper, lead and zinc mines, and gold and silver mines, because the methods of taxation applicable to the former are not always suitable in the case of the latter.

It cannot be asserted dogmatically that one or the other method of taxation discussed in this chapter should be adopted in Montana. A definite conclusion as to the best method for Montana could be reached only after a thorough study of the books and records of the mining companies of the state such as has not yet been made. But the survey of methods and of the experience of other states sketched in this chapter is sufficient to dispel the illusion so assiduously maintained by some that the assessment and taxation of mines is a special mystery which can be comprehended only by the initiated few. This illusion has long since vanished in other states in the light of the true facts.

¹ *Report of Arizona State Tax Commission, 1914, p. 68.*

² Ch. K. Leith, "Conservation of Certain Mineral Reserves, in *Foundations of National Prosperity, p. 365.*

CHAPTER XI.

PRACTICAL SUGGESTIONS.

It has been repeatedly pointed out in this essay that the question of mine taxation is but a phase of the general problem of reforming the tax system of the state. It is therefore impossible to suggest a comprehensive change in the mine tax law without a preliminary solution of the more fundamental tax problems. The adequacy of the method of mine taxation which might be adopted will depend on whether the State of Montana retains the general property tax in its present form, or introduces a classified property tax, or adopts a state income tax, or in any other way radically changes the general structure of the state tax system. Until these more general problems are settled, the question of mine taxation cannot be finally answered.

Pending a comprehensive revision of the tax system of the state, all one can suggest at the present time are such amendments in the law as are necessary, in order to improve the administration of the law as it now exists and to prepare the ground for more vital changes in the future. In accordance with the defects pointed out in Chapter VII, the suggestions for remedial legislation are here presented in similar order.

In the first place, it would be necessary to repeal Section 3 of Article XII of the Constitution which provides a special method for taxing the mines. The repeal of this section would place the mines of the state on an equal basis with all other property. The legislative bodies and tax authorities of the state would then be in a position to deal freely with the problem. The repeal of Section 3 is a constitutional change which must be voted on by the people at a general election.

Secondly, if the facts justify the belief that the Montana method of mine taxation results in inequalities between the mines and other classes of property, such inequality could be somewhat equalized by amending Section 2500 of the Revised Codes of 1907. According to this section, the net proceeds of mines are taxed as personal property. There would seem to be nothing in the

constitution to prevent an amendment of this section by which the net proceeds of the mines could be assessed at twice or three times their reported value. That is, the net proceeds as reported by the mines could be multiplied by two or three for purposes of assessment. As pointed out above, such a procedure was in use for a time in Arizona and is favored by many tax officials. To equalize the fluctuations in net proceeds from year to year, the average net proceeds for three or five years could be taken as a basis.

Thirdly, section 2565 of the Revised Codes, which contains the provision as to what deductions should be made from gross proceeds to determine net proceeds could be amended in accordance with what has been done in other states. As pointed out above, the Montana law allows the deduction of all expenses for new construction. Such was the practice in other states for many years. But the tendency in recent years has been to change to the method used by the mining companies themselves in their accounting. For instance, in 1913 the Nevada Tax Commission by agreement with the mining companies of the State of Nevada arranged "that the cost of mine plants should be reduced by depreciation charges over the whole life of the mine, and not as lump charges at the time of construction." Furthermore, the agreement also provided that no investment in plant should be allowed to depreciate to less than twenty per cent of its original cost during its operation, and that all depreciation charges should then cease. The Arizona Tax Commission also refuses to allow deductions for mine depletion, interest charges, or new construction in the computation of net proceeds.

Whether Section 2565 of the Codes is amended as suggested or not, it would seem desirable to provide for a more uniform system of computing net proceeds and for central supervision over the process. The necessity of this has long been recognized by tax officials and by mining men themselves. The American Mining Congress in 1914 adopted a declaration in favor of a uniform system of accounting for the various mines of a state. Several states have made provision for the supervision of mine accounts by the central tax authorities of the state. The Constitution of Utah provides that the net annual proceeds of the

mines shall be appraised and taxed by the State Board of Equalization. The laws of New Mexico give the State Tax Commission the power to prescribe the method of keeping accounts for the mining companies and mine owners. In Arizona the State Tax Commission assesses the mining property of the state. The reasons for this general tendency were pointed out in Chapter VII.

Of the amendments suggested above the repeal of Section 3 of Article XII of the Constitution would seem the most essential. But to achieve the purpose of a scientific revision of the tax system of the state in the near future, another step in the same direction would seem necessary. The State of Montana is apparently to have a permanent tax commission which will be created by the present legislature. The bills which have been drafted by the Temporary Tax and License Commission provide considerable powers of investigation for the permanent commission and enlarged powers of supervision for the State Board of Equalization. However, might not the problem of mine taxation in Montana be considerably advanced by specific instructions to the permanent tax commission to make a special study of the problem and to report to the next legislature. With the facts which could be made available and with the resources which a permanent tax commission could have at its command, such an investigation should result in a complete elucidation of the situation. With such a report before them, the people of Montana should have no difficulty two years hence in solving a problem which has been the cause of so much perplexity and friction.

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