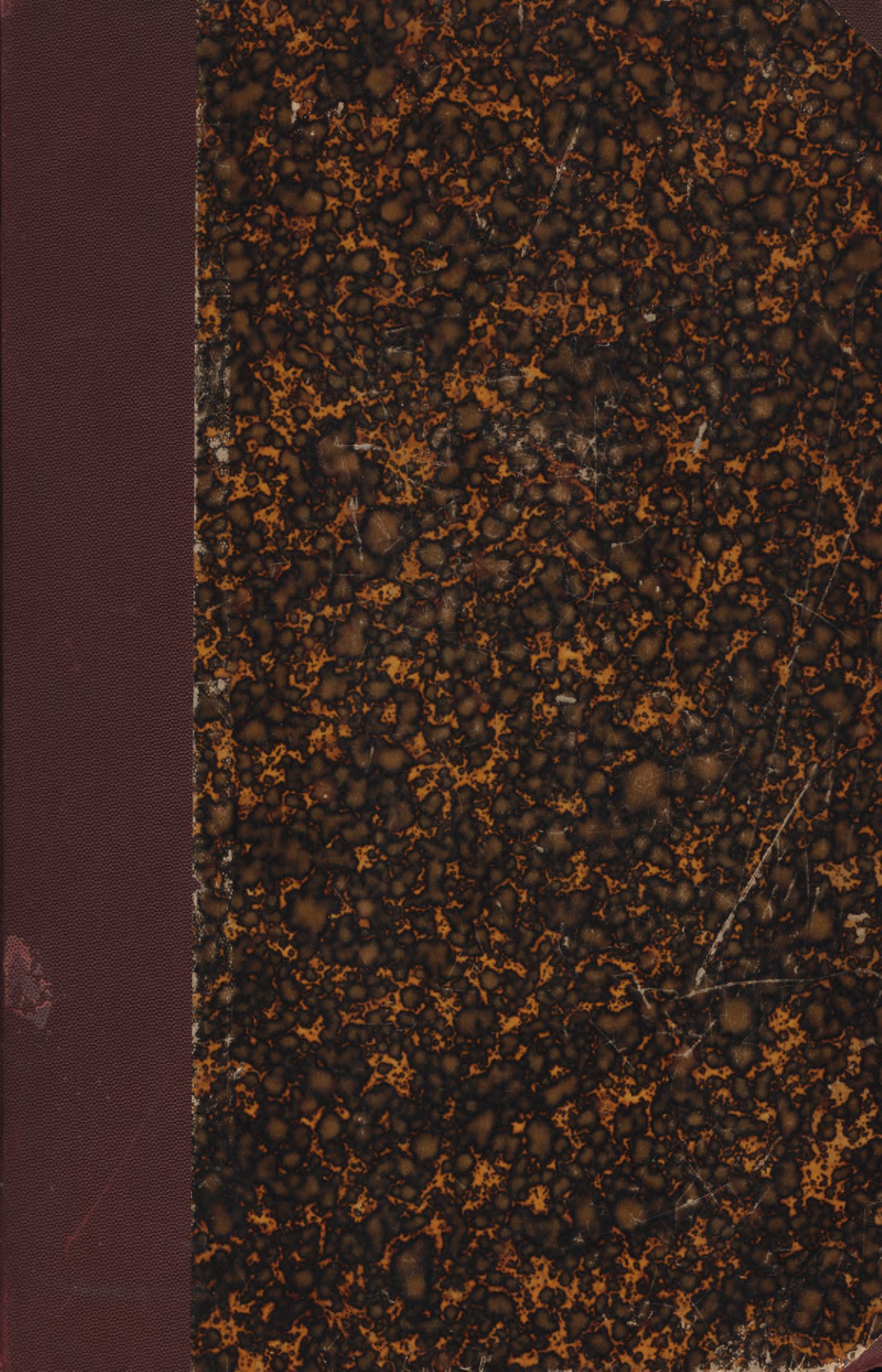




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COMMISSION REGULATION OF PUBLIC UTILITIES: A SURVEY OF LEGISLATION

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I. THE SCOPE OF UTILITY LEGISLATION

In the early days of the development of public utility properties there was little or no regulation for the safeguarding of public welfare. In order to afford effective stimulus for inventive genius and business initiative it was necessary to provide a free field for private enterprise, unhampered by legislative restriction. The technique of utility operation, in which so high a degree of efficiency has now been attained, had yet to be worked out; and the permanent necessity and financial practicability of the utility services, which have now been recognized beyond recall, had yet to be established. In these monopolistic industries, as in private business, public welfare counseled a policy of *laissez-faire*. In spite of their monopolistic character, it was felt that the public service industries, in order to be ready for public control no less than for public ownership, must first have reached a stage of maturity consistent with the lessened opportunities for private gain necessarily involved in a system of effective public regulation. During the first half of the nineteenth century, therefore, franchise privileges were freely granted by the state legislatures. These franchises extended for long periods and often in perpetuity. As a result, the privileges essential for supplying the future, as well as the then-existing, needs of the city were given to private corporations with little thought of immediate restriction or of reservation of power for future regulation. The public service franchise was looked upon as a private contract between the state and the grantee corporation, instead of as a permit by the sovereign for the performance by private individuals or corporations of functions largely public in their nature.

Regulation by the states through administrative commissions of the type that prevails today is very recent. The Railroad Com-

mission of Wisconsin was not established until 1905 and it was not given jurisdiction over utilities other than railroads, express companies and telegraph companies till 1907. The public service commissions of New York were not established till 1907. The Wisconsin and New York commissions have served, to a large degree, as models for the numerous administrative bodies for the regulation of public utilities that have sprung into being since 1907; and the Wisconsin and New York laws have been the basis of a large mass of the public utility legislation recently enacted. These laws substitute administrative regulation for direct legislative control. Large powers are entrusted to special boards or commissions whereby they are enabled to keep themselves constantly and thoroughly informed of the practical operation as well as of the general policy of public service corporations, on the basis of which knowledge and information they exercise such supervision over these utilities as may tend to harmonize the private interests of the owners and the general welfare of the public. With but few exceptions, present-day utility regulation is legislative in character only in the sense that the extent of commission jurisdiction and power is determined by statutory enactment.

Now a complete résumé of utility legislation would include, in addition to the so-called commission laws, all special franchises and charters, with such restrictions as they contain, and all direct legislation imposing duties upon utilities for the enforcement of which no provision is made. A comprehensive survey of commission legislation even would include many laws whereby duties are imposed upon utilities by direct legislative enactment with power of enforcement vested in commissions. This paper deals almost exclusively with commission laws. Emphasis is here placed upon the organization and powers of commissions rather than upon the duties of utilities. Moreover, the discussion is limited to state commissions. Since the authority of the Interstate Commerce Commission extends primarily, if not entirely, to interstate business, it is given no consideration here, in spite of its large influence upon state commission legislation. Municipal commissions are likewise beyond the scope of this paper. Although there has been considerable American experience with municipal commissions, usually deriving their direct authority from municipalities and exercising jurisdiction over utilities whose business

is confined within these municipalities, the general trend of commission regulation is towards the establishment of central commissions whose authority is state-wide.¹

II. THE ORGANIZATION OF COMMISSIONS

The success of commission regulation will depend largely upon the personnel of the commissions. Ultimately, the personnel of public service commissions will be determined by the attitude of the public towards its officials in general, and by the confidence or distrust which the public manifests towards the employment in the public service of trained experts and men of large business experience. This is one of the fundamental problems of American democracy, and it cannot be solved by mere legislation. But the effectiveness of commission regulation depends in large measure also upon political machinery; and this leads to a consideration of the important legislative requirements dealing with commission organization and procedure.

There are at the present time forty-eight state commissions, with independent personnel, representing forty-five separate jurisdictions.²

¹ The New York Public Service Commission for the first district is a state commission with limited territorial jurisdiction because of the special problems created by the dominating position of New York City.

² The following is a complete list of state railroad and public service commissions. Because of limited space no attempt is made to present a complete list of constitutional and statutory sources. All of the more important commission laws are given, and reference is made to such other provisions as deal with the creation and organization of commissions.

ALABAMA: Railroad Commission of Alabama (*Code 1907*, §§5632, 5633, 5636, 5637, 5640, 5642). ARIZONA: Corporation Commission (*Session Laws 1912*, ch. 90). ARKANSAS: Railroad Commission of Arkansas (*Kirby's Digest 1904*, §§6788, 6789, 6793). CALIFORNIA: Railroad Commission of the State of California (*Statutes 1911*, 1st extra session, chs. 14, 40). COLORADO: State Railroad Commission of Colorado (*Laws 1910*, special session, ch. 5). CONNECTICUT: Public Utilities Commission (*Public Acts 1911*, ch. 128). FLORIDA: Railroad Commissioners of the State of Florida (*Gen. Stats. 1906*, §§2882, 2883, 2887 [as amended 1907]). GEORGIA: Railroad Commission of Georgia (*Code 1911*, §§2616, 2620, 2621, 2622, 2625. *Acts 1878-79*, no. 269, §1). IDAHO: Public Utilities Commission of the State of Idaho (*Session Laws 1913*, house bill no. 21). ILLINOIS: State Public Utilities Commission (*Acts 1913*, house bill no. 907). INDIANA: Public Service Commission of Indiana (*Acts 1913*, house bill no. 361). IOWA: Board of Railroad Commissioners (*Code 1897*, §§2111, 2121). KANSAS:

Delaware, Utah and Wyoming are the only states which have no central commissions. New York, Massachusetts and South Carolina each has two distinct commissions.

Twenty-seven of the forty-eight commissions are appointed by the governor by and with the consent or advice of the senate or council; one is appointed by a railroad board, or a majority of its members, consisting of the governor, the lieutenant-governor, and the attorney-general; twenty are elected by the people. It is generally recognized that the appointive commission, all else being equal, is likely to call into the public service better and abler men than the elective commission. And there is a strong tendency towards the

Public Utilities Commission (*Gen. Stats. 1909*, §7185. *Laws 1911*, ch. 238). KENTUCKY: Railroad Commission (Constitution, §209. *Carroll's Statutes 1909*, §§821-823). LOUISIANA: Railroad Commission of Louisiana (Constitution, arts. 283, 287, 289). MAINE: Board of Railroad Commissioners (*Rev. Stats. 1903*, ch. 51, §48 [as amended by public laws 1909, ch. 141]; ch. 116, §1). MARYLAND: Public Service Commission (*Laws 1910*, ch. 180; *Laws 1912*, ch. 563). MASSACHUSETTS: Board of Gas and Electric Light Commissioners (*Rev. Laws 1902*, ch. 121, §1 [as amended by acts 1907, ch. 316]. *Acts 1910*, ch. 539, §1). Public Service Commission (*Acts 1913*, ch. 784). MICHIGAN: Michigan Railroad Commission (*Public Acts 1909*, no. 300). MINNESOTA: Railroad and Warehouse Commission (*Rev. Laws 1905*, §§1953 and 1956 [as amended by laws 1911, ch. 140, 1961]). MISSISSIPPI: Mississippi Railroad Commission (*Code 1906*, §§4826, 4828, 4830). MISSOURI: Public Service Commission (Public service commission law of March 17, 1913). MONTANA: Public Service Commission (Public service commission law of 1913). NEBRASKA: Nebraska State Railway Commission (*Cobbey's Annotated Statutes 1909*, §§10649, 10650). NEVADA: Railroad Commission of Nevada (*Statutes 1907*, ch. 44 [as amended by statutes 1911, ch. 193]); Public Service Commission of Nevada (*Statutes 1911*, ch. 162). The personnel of the two commissions is the same, the railroad commission being *ex officio* the public service commission. NEW HAMPSHIRE: Public Service Commission (*Laws 1911*, ch. 164). NEW JERSEY: Board of Public Utility Commissioners (*Laws 1911*, ch. 195). NEW MEXICO: State Corporation Commission (Constitution, art. XI, §1. *Laws 1912*, ch. 78). NEW YORK: Public Service Commission, First District (*Laws 1910*, ch. 480 [as amended through 1913]); Public Service Commission, Second District (same citation as for first district commission). NORTH CAROLINA: Corporation Commission (*Pell's Revisal 1908*, §§1054-1056, 1060, 2754). NORTH DAKOTA: Board of Railroad Commissioners of the State of North Dakota (Constitution, §82. *Rev. Codes 1905*, §§364, 366, 367. *Laws 1909*, ch. 216, §4). OHIO: Public Utilities Commission of Ohio (*Laws 1911*, no. 325. *Laws 1913*, house bill no. 582). OKLAHOMA: Corporation Commission (Constitution, art. IX, §§15, 16, 18 (a). Constitution, schedule §15). OREGON: Railroad Commission of Oregon (*Gen. Laws 1907*, ch. 53. *Gen. Laws 1911*, ch. 279). PENNSYLVANIA: Public Service Commission

appointive commission. Not only is a clear majority of the commissions appointive, but all the states which legislated during the past year created appointive commissions.³

The number of commissioners varies from three to seven. Thirty-eight commissions have three members; one has four; eight have five; one has seven. The term of office varies from two years in Arkansas and North Dakota to ten years in Pennsylvania. In five jurisdictions the tenure is three years; in six, four; in three, five; in thirty, six; in one, eight years. It is evident that the commissioners are generally being given a long enough tenure to make them expert in their work even if they are not so when they take office.

The compensation of commissioners varies from \$1,500 in South Dakota to \$15,000 in New York. In one commission the salary is \$1,500 per annum; in one, \$1,700; in one, \$1,900;⁴ in four, \$2,000; in one, \$2,200; in three, \$2,500; in nine, \$3,000; in one, \$3,500; in nine, \$4,000; in two, \$4,500; in four, \$5,000; in one, \$5,500; in four, \$6,000; in one, \$7,500; in one, \$8,000; in two, \$10,000; and in two, \$15,000. It will be noted that in fifteen commissions the salaries are \$5,000 or over and in thirty-three they are less than \$5,000. In nine commissions they are less than \$2,500. In the recent legislation the tendency is to provide a reasonably adequate salary for the commis-

of the Commonwealth of Pennsylvania (*Laws 1913*, no. 854). RHODE ISLAND: Public Utilities Commission (*Acts 1912*, ch. 795). SOUTH CAROLINA: Railroad Commission (Constitution, art. IX, §14. *Gen. Stats. 1902*, §§2063, 2064. *Laws 1893*, no. 304, §1. *Laws 1910*, no. 286). SOUTH DAKOTA: Board of Railroad Commissioners of the State of South Dakota (*Rev. Pol. Code 1903*, §§186, 187, 189-191, 194, 195 [as amended by session laws 1907, ch. 208]). TENNESSEE: Railroad Commission of the State of Tennessee (*Acts 1897*, ch. 10. *Acts 1907*, ch. 390). TEXAS: Railroad Commission of Texas (Constitution, art. XVI, §30. *Sayles' Civil Statutes 1897*, art. 4561). VERMONT: Public Service Commission (*Public Statutes, 1906*, §§4591, 4592, 6172. *Laws 1908*, no. 116). VIRGINIA: State Corporation Commission (Constitution, §155). WASHINGTON: Public Service Commission of Washington (*Laws 1911*, ch. 117). WEST VIRGINIA: Public Service Commission (public service commission law of February 20, 1913). WISCONSIN: Railroad Commission of Wisconsin (*Laws 1905*, ch. 362 as amended. *Laws 1907*, chs. 499 as amended, 454, 578. *Laws 1911*, ch. 593. *Laws 1913*, ch. 756).

³ Idaho, Illinois, Indiana, Massachusetts, Missouri, Montana, Ohio, Pennsylvania, West Virginia.

⁴ In South Carolina the salary of the members of the railroad commission is \$1,900 per annum; the members of the public service commission receive \$10 a day when actually employed.

sioners. Illinois and Pennsylvania, for example, in their new laws, provide a salary of \$10,000 for each of the commissioners; Massachusetts, \$8,000; Ohio, Indiana and West Virginia, \$6,000; Missouri, \$5,500; and Idaho, \$4,000.

In addition to the commissioners, provision is often made in the statutes for a secretary or clerk and for a special attorney to the commission. Such provision for a secretary or clerk is found in thirty-five jurisdictions, and for a special attorney in twenty-two jurisdictions. In some states the attorney-general is directed to act on behalf of the commission and to appoint such other counsel as may be necessary. In thirty jurisdictions the salary of the secretary or clerk is fixed by statute, varying from \$1,200 to \$6,000. In nine jurisdictions the salary of the attorney to the commission is fixed by statute, varying from \$2,500 to \$10,000. In most of the jurisdictions it is further provided that the commission may employ such subordinates as it deems essential for the adequate performance of its duties. The following provision from the recent Massachusetts public service commission law indicates the general tendency of commission legislation in the matter of subordinate employees: "The commission may appoint or employ such engineers, accountants, statisticians, bureau chiefs, division heads, assistants, inspectors, clerks and other subordinates as it may deem advisable on such terms of office or employment and at such salaries as it may deem proper."⁵

In eight jurisdictions commissioners must have special qualifications prescribed by statute. In Georgia one of the commissioners must be experienced in law, and one in the railroad business; in Kansas one must be "a practical, experienced business man," and one experienced in the management or operation of a common carrier or public utility; in Maine the chairman must be learned in law, one of the commissioners must be a civil engineer experienced in the construction of railroads, and one experienced in the management and operation of railroads; in Michigan one must be an attorney having a knowledge of and experience in the law relating to common carriers, and the other two must have a knowledge of traffic and transportation matters; in Nevada the chief commissioner must be an attorney at law well versed in the law of railroad regulation, the first associate commissioner must be a practical railroad man familiar with the operation

⁵ *Acts 1913*, ch. 784, §9.

of railroads, and the second associate must have a general knowledge of railroad fares, freights, tolls and charges; in Virginia at least one commissioner must have the same qualifications as are required for judges of the supreme court of appeals; in West Virginia one of the commissioners must be a lawyer of not less than ten years' actual experience at the bar; and in Wisconsin one must have a general knowledge of railroad law, and each of the others must have a general understanding of matters relating to railroad transportation. In two jurisdictions the qualifications are very general in character. The new Massachusetts public service law provides that each of the commissioners shall be "a competent person;" and in South Carolina it is provided that the members of the public service commission shall be "reputable and competent citizens of South Carolina."

Most jurisdictions provide certain disqualifications for membership in a railroad or public utility commission. The disqualification provisions of forty jurisdictions, stated in composite form, provide that no person employed by or connected with or holding any official relation to or owning stocks or bonds of or having any direct or indirect or pecuniary interest in any public utility over which the commission has jurisdiction or of the kind over which the commission has jurisdiction is eligible to membership in the commission. In Wisconsin it is provided that no person who has a pecuniary interest in any railroad or telegraph or express company in Wisconsin or elsewhere may become a member of the commission. In twenty-six jurisdictions it is further provided that no commissioner, officer or employee of the commission may engage in any other business, employment or vocation, or hold any other political office. In Idaho and West Virginia the prohibition extends only to any other political office.

The determination of rules of procedure and practice is largely in the hands of the commissions. In two-thirds of the jurisdictions authority is specifically conferred upon the commissions to adopt rules and regulations for their government and proceedings. It is usually provided, however, that all hearings must be open to the public and that any party in interest may be heard in person or by attorney. On the other hand, authority is almost universally given to the commissions to administer oaths, subpoena witnesses and order the production of books, records and memoranda in proceedings held before them. Investigations and hearings are commonly started on

complaint, but it is often provided that the commission may make summary investigations and hold hearings on its own motion or initiative and issue orders on the basis of its findings.

III. THE GENERAL EXTENT OF COMMISSION AUTHORITY

The general extent of commission authority may be examined from three points of view. First, the scope and trend of regulation may be gathered from the number of commissions in existence and the rapidity of their growth. There are today, as already indicated, forty-eight state commissions, representing every state but Delaware, Utah and Wyoming. No less than thirty of these either came into existence since 1907 or, though in existence prior to that year, they have been so completely changed in character since 1907 that they are practically new commissions. Early in 1913 the National Civic Federation completed a comprehensive compilation and analysis of laws for the regulation of public utilities by central commissions.⁶ In the single year that has elapsed since the results of that investigation were published, public service commissions have been created in two states, Idaho and West Virginia, where no utility commissions had before existed, and seven other states have passed complete public service laws now in operation.⁷ In addition there has been a mass of amendatory legislation whereby already existing commissions have been very largely transformed.

The extent of commission authority may also appear from a consideration of the kind and number of utilities which may be reached in any way by the utility commissions. These commissions collectively have some degree of authority over corporations, companies, associations, joint stock companies, partnerships or individuals owning, operating, managing or controlling steam railroads, electric and street railways, interurban or suburban railways, elevated railroads or subways, automobile railroads, steamboats and other water craft, express lines and messenger lines, signalling facilities, bridges and

⁶ *Commission Regulation of Public Utilities: A Compilation and Analysis of Laws of Forty-three States and of the Federal Government for the Regulation by Central Commissions of Railroads and Other Public Utilities.* The National Civic Federation, Department on Regulation of Interstate and Municipal Utilities, New York, 1913.

⁷ See footnote 3.

ferries connected with railroads, pipe lines for the transportation of oil or water, sleeping, parlor and drawing-room cars, terminals, union depots, docks, wharves, storage elevators, fast freight lines, stage lines, messenger companies, telegraph and telephone companies, facilities for the manufacture and sale of gas or electricity, heat, light, water, power, hot or cold air or steam, and irrigation and sewage facilities. Whether a given business constitutes a public service undertaking depends largely upon the social and industrial conditions that prevail in the community. Whether, upon recognition of a given undertaking as a public service industry, express authority to regulate shall be granted to commissions, depends usually upon the public policy of the given community and more particularly upon the political conditions prevailing in that community. Therefore the utilities to which commission jurisdiction extends vary greatly in the different states; but the principles of adequate regulation, as embodied in the various powers conferred upon commissions, are found to depend but very slightly upon the number and nature of the utilities regulated. This is but a recognition that public service industries may, in most respects, be treated as a homogeneous class. A distinction is often made between interstate and municipal utilities, or between railroads and other public utilities. Commission legislation but seldom distinguishes to any striking degree between these classes of utilities, although there is considerable variety in the names of the commissions. Twenty-two of them are railroad commissions; twelve are public service commissions; seven are public utility commissions; five are corporation commissions; one is a railroad and warehouse commission; and one is a board of gas and electric light commissioners. The names of the commissions do not always indicate the scope of their jurisdiction. Many of the railroad commissions have jurisdiction over the so-called municipal utilities: as, for example, the railroad commissions of Oregon and Wisconsin. And most of the public utility or public service commissions have jurisdiction over railroads: as, for example, the Massachusetts and New York commissions.

Finally, the extent of commission jurisdiction may be gathered from the powers vested in the commissions. Two types of regulating boards have appeared in American experience: the advisory board, with powers of investigation and recommendation, of which the old Massachusetts railroad commission is the most notable example, and the

mandatory board, with power to order as well as to recommend, of which the New York and Wisconsin commissions are perhaps the best examples. The advisory commission relies upon publicity and the strength of public opinion for the enforcement of its recommendations; the mandatory commission is vested with sufficient power to compel the utilities to submit to its orders.

The advisory commission has been abandoned even in Massachusetts. Large powers are now granted to the commissions; the duty of utilities to comply with the orders of the commissions is clearly stated; the commissions are given authority to invoke judicial process for the enforcement of their orders; and usually penalties, varying in stringency, are imposed upon utilities for failure to comply with these orders. Since the enactment of the Wisconsin railroad commission law in 1905 and of the Hepburn amendments to the act to regulate commerce in 1906, practically all utility legislation has proceeded on the basis of clothing commissions with ample power to exercise continuous supervision over public utilities and to afford effective relief to any party in interest whenever necessary. The authority to prescribe just and reasonable rates, therefore, is almost universally enjoyed by the modern type of public service commission. But in addition to such specific powers as are necessary for adequate public control, commissions now possess large general powers of investigation and supervision over the property and business of public utilities.

This general power of regulation is stated in most comprehensive fashion in the Illinois public utilities commission law. It is there provided that

The commission shall have general supervision of all public utilities, shall inquire into the management of the business and shall keep itself informed as to the manner and method in which the business is conducted. It shall examine such public utilities and keep informed as to their general condition, their franchises, capitalization, rates and other charges, and the manner in which their plants, equipments and other property owned, leased, controlled or operated are managed, conducted and operated, not only with respect to the adequacy, security and accommodation afforded by their service but also with respect to their compliance with the provisions of this act and any other law, with the orders of the commission and with the charter and franchise requirements.⁸

The following provision of the Wisconsin public utilities act is found in most jurisdictions, and indicates the nature of the powers

⁸ *Acts 1913*, house bill no. 907, §8.

vested in commissions in so far as they are essential to a proper performance of their duties:

The commission or any commissioner or any person or persons employed by the commission for that purpose shall, upon demand, have the right to inspect the books, accounts, papers, records and memoranda of any public utility and to examine, under oath, any officer, agent or employee of such public utility in relation to its business and affairs.⁹

IV. THE POWERS OF UTILITY COMMISSIONS

We may now present a brief résumé of the more important specific powers vested in public utility commissions.

1. *Franchises*

The important provisions in commission laws looking to franchise regulation aim to prevent unnecessary duplication of utility properties through the introduction of competition where the public welfare demands the recognition of monopoly, and to provide for the uninterrupted operation of utilities, under adequate control of rates and service, subject to municipal purchase whenever such private operation ceases to promote the public good.

The first of these purposes has been accomplished by requiring the issue of a certificate of convenience and necessity by the commission before a public utility may enter upon a new undertaking or extend an existing undertaking or exercise franchise privileges previously granted but not theretofore exercised. The essential elements of the certificate of convenience and necessity are stated as follows in the New Hampshire public service commission law:

No public utility shall commence within this state the business of transmission of telephone or telegraph messages or of supplying the public with gas, electricity or water, or shall engage in such business or begin the construction of a plant, line, main or other apparatus or appliance intended to be used therein in any city or town in which at the time it shall not already be engaged in such business, or shall exercise any right or privilege under any franchise hereafter granted (or any franchise heretofore granted but not heretofore actually exercised) in such town, without first having obtained the permission and approval of the commission. The commission shall grant such permission whenever it shall, after due hearing, determine and find that such engaging in

⁹ *Laws 1907*, ch. 499, §1799m-38.

business, such construction or such exercises of the right, privilege or franchise would be for the public good and not otherwise; and may prescribe such terms and conditions upon the exercise of the privilege granted under such permission as it shall consider for the public interest. Authority granted under provisions of this section may only be exercised within two years after the same shall be granted and shall not be exercised thereafter.¹⁰

Provisions substantially identical with the New Hampshire section are found in nineteen jurisdictions.¹¹ It is to be noted that practically all the states which passed complete laws during 1913 provide for certificates of convenience and necessity.

The other purpose of the franchise provisions of commission laws is to recognize the essentially monopolistic character of public utilities by providing for their continuous operation, during good behavior, under a permit unlimited as to time, with power in the municipality to exercise an option of purchase. The indeterminate franchise was first established in Massachusetts, where street railway locations may be revoked by local authorities (the revocation being subject to approval by the commission in certain cases) at any time after the expiration of one year from the date of the franchise. The most thorough-going indeterminate franchise law is to be found in Wisconsin. It was enacted in 1907 and materially amended in 1911.¹² It provides for indeterminate permits for street railways and for heat, light, water and power companies in municipalities. The indeterminate permit was first to apply to all future grants, with authority for companies operating under limited-term franchises to exchange them for indeterminate permits. The amendment of 1911 provided that all franchises theretofore granted were to become indeterminate. The essential characteristics of the principle of indeterminate franchises are: first, that the public service corporation is recognized as a legal monopoly and no permit is granted to a competing company unless public convenience and necessity require such grant; and second, that the public service company, in accepting an indeterminate permit, consents to the purchase of its plant by the municipality in which it operates. The purchase price is to be

¹⁰ *Laws 1911*, ch. 164, §13 (a).

¹¹ Arizona, California, Connecticut, Idaho, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New York, Pennsylvania, South Dakota, Vermont, West Virginia, Wisconsin.

¹² *Laws 1907*, ch. 499, §§1797m-74 to 1797m-86. *Laws, 1907*, ch. 578, §§1797t-1 to 1797t-12. *Laws 1909*, chs. 180, 213. *Laws 1911*, chs. 546, 596, 662.

fixed by the commission, subject to review by the courts. The new public service commission law of Indiana provides for indeterminate permits similar to those established in Wisconsin.¹³

2. Security Issues

In fifteen jurisdictions the commission has authority to supervise the issue of stocks and bonds.¹⁴ In some of these jurisdictions the commission's power is stated in general terms and does not provide for a strict control of capitalization. The New Jersey law, for example, merely provides that no public utility shall

issue any stocks, stock certificates, bonds or other evidences of indebtedness payable in more than one year from the date thereof until it shall have first obtained authority from the board for such proposed issues. It shall be the duty of the board, after hearing, to approve of any such proposed issue maturing in more than one year from the date thereof, when satisfied that the same is to be made in accordance with law and the purpose of such issue be approved by said board.¹⁵

In many of the states, however, the commission has complete control, definite financial standards being prescribed and provision being made for thorough investigation and valuation by the commission before approval of security issues, and for detailed supervision of the disposition of the proceeds after the commission's certificate has been granted. The Wisconsin stock and bond law,¹⁶ applying to railroads, street railway, telegraph, telephone, express, freight line, sleeping car, light, heat, water and power corporations, establishes the most comprehensive system of regulation of security issues by commission. It affords a practical guarantee by the state that there is an equivalence between the amount of outstanding securities and the investment upon which the utilities are entitled to a fair return. Legislation of similar scope may be found in five other states, three of which legislated during the past year.

¹³ *Acts 1913*, house bill no. 361, §§100-109.

¹⁴ Arizona, California, Kansas, Illinois, Indiana, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New York, Pennsylvania, Texas, Vermont, Wisconsin.

¹⁵ *Laws 1911*, ch. 195, §18(e).

¹⁶ *Laws 1911*, ch. 593.

3. Rates and Service

Commission laws lay down the basis of rate-making, or the requisites of lawful rates, declare unjust discrimination unlawful, prescribe publicity in the making of rates and schedules, and vest in commissions the power to fix rates in accordance with the principles thus prescribed.

It is almost invariably provided that rates and charges must be just and reasonable, and the commissions are given authority to enforce the standard thus established. In many jurisdictions the various elements that must be considered and the various devices that may be adopted in the establishment of reasonable rates by utilities and commissions are further prescribed. The chief elements emphasized by the statutes for lawful rates are that a due regard be had "to a reasonable average return upon the value of the property actually used in the public service and of the necessity of making reservation out of income for surplus and contingencies."¹⁷ Twenty-four jurisdictions make express provision for valuation of the property of public utilities by commissions.¹⁸ These valuations are sometimes used for capitalization and purchase as well as for rate-making purposes. The tendency in these valuation provisions is to vest in commissions ample power for the successful ascertainment of utility valuations. Such elaborate valuation provisions may be found in Ohio,¹⁹ Pennsylvania,²⁰ Washington²¹ and Wisconsin.²² The main device provided by statute by which reasonable rates may be secured is the sliding scale, chiefly applicable to the gas industry, but also, in some cases, to electric companies. In addition to the Boston sliding scale act in Massachusetts,²³ nine jurisdictions author-

¹⁷ New York: *Laws 1910*, ch. 480, §97.

¹⁸ Arizona, Arkansas, California, Florida, Georgia, Illinois, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Washington, West Virginia, Wisconsin.

¹⁹ *Laws 1913*, house bill no. 582, §§21-31.

²⁰ *Laws 1913*, no. 854, art. II, §1 (k); art. III, §§4 (a), 6; art. V, §§19-23.

²¹ *Laws 1911*, ch. 117, §92.

²² *Laws 1907*, ch. 499, §§1797m-5, 1797m-6, 1797m-19, 1797m-82 to 1797m-86. *Laws 1907*, ch. 578, §1797t-8. *Laws 1911*, ch. 662.

²³ *Acts 1906*, ch. 422.

ize utilities to establish the sliding scale for the automatic adjustment of charges and dividends under commission supervision.²⁴

It is almost invariably provided also that unjust discrimination is prohibited, and the commissions are given authority to enforce the prohibitions. Unjust discrimination is variously defined. As defined in the commission laws collectively it consists in charging a greater or less compensation to one person than to another for like and contemporaneous service; in charging rates other than those prescribed by law or specified in published schedules, refunding, remitting or rebating any portions of such rates, or extending privileges or facilities not uniformly open to all; in charging a less compensation in consideration of the furnishing by utilities of any part of the facilities incident to the service; in charging a less compensation in consideration of the size of the shipment or the extent of the service; in charging a greater compensation for a shorter than for a longer distance or for a smaller than for a larger service; in granting to any person, corporation, locality or any particular description of service any undue or unreasonable preference or advantage, or in subjecting the same to any undue or unreasonable prejudice or disadvantage; in assisting or permitting patrons to secure special favors or advantages, or rates other than those lawfully established; in soliciting, accepting or receiving special favors or advantages, or rates other than those lawfully established. There are also general prohibitions against offering, granting, soliciting or accepting free or reduced rate or special service, with elaborate lists of exceptions; special prohibitions, applicable to public officials and members of political organizations; and requirements that lists of persons to whom free or reduced rate or special service has been granted shall be published and filed with the commission. The provisions also indicate the kinds of special treatment which constitute justifiable discrimination and authorize the commissions to determine under what conditions such circumstances exist as make discrimination justifiable.

Again, it is almost invariably provided that utilities submit to full publicity in the establishment and change of their rates and schedules, and authority is vested in the commissions to render publicity in rate-making effective. Utilities are thus ordered to file their schedules of rates with the commissions, after due notice of their

²⁴Arizona, California, Idaho, Maryland, Missouri, New York, Ohio, Pennsylvania, Wisconsin.

adoption; the matters to be contained in these schedules are prescribed in detail; the forms of schedules are made subject to the approval of commissions; it is provided that the schedules be published and posted; the filing, publishing and posting of rate schedules are often made a condition precedent to the exercise by utilities of the right to do business; and utilities, in many instances, are required to file with the commissions copies of leases, contracts and arrangements made with other utilities.

The most important powers as to rates are found in the provisions which authorize commissions to regulate or prescribe the rates and charges of utilities, establish the procedure to be followed in the exercise of these powers, and indicate the legal effect to be given to the rates and charges so established. All of the states now give the commissions mandatory powers over rates. In many of the jurisdictions there is language so broad that it may, by liberal interpretation, be construed to vest in the commissions power to fix rates in the first instance. When the legislation in each jurisdiction is taken as a whole, however, the authority of the commissions in practically all of the commission states is limited to the power on its own motion or on complaint, after investigation, to declare unreasonable rates and charges previously in force, and to prescribe others in lieu thereof to be followed in the future. In other words, in spite of the large power over rates vested in commissions, the right to initiate rates is practically everywhere reserved to the utilities; but in about one-third of the jurisdictions the commissions are given the additional authority to suspend the operation of rates fixed by utilities pending an investigation as to their reasonableness undertaken by the commissions. In some jurisdictions the rates fixed by commissions are considered *prima facie* lawful and in force until found unreasonable upon review by a proper court; in some states their operation is suspended until declared reasonable upon judicial review.

Many of the rate provisions, in so far as they empower commissions to supervise the business of utilities, apply to regulations, practices and service. But while more than one-half of the states provide that the service furnished by utilities must be reasonable or that the facilities must be adequate and safe, only about one-third of the commission jurisdictions vest sufficient authority in the commissions to render these requirements effective. The practice in the past has been to establish by direct legislative enactment absolute standards

of service and safety, and specific facilities and safety appliances. The present tendency, however, as evidenced by much of the recent legislation,²⁵ is to clothe commissions with power over service and facilities, both as to adequacy and safety, commensurate with their power over rates. The more recent commissions, therefore, are authorized to prescribe reasonable service standards and to provide for such inspection and testing of service and facilities as will insure their adequacy and safety.

4. Accounts and Reports

The regulation of accounts and reports serves to provide for commissions the data essential to an adequate control of capitalization, rates and service.

There are provisions for the regulation of accounts in twenty-eight jurisdictions. The most general requirement is that by which authority is granted to commissions to establish a system of uniform accounts for public utilities, with power to prescribe the forms of accounts, records and memoranda and to indicate the manner in which they shall be kept, or to classify public utilities and establish a system of accounts and prescribe forms for each class. In most jurisdictions this power may be exercised in the discretion of the commission. Sometimes, as in the new Indiana law, the authority to prescribe accounting practices is made mandatory upon the commission.²⁶ In a number of the jurisdictions it is further made unlawful for utilities to keep any other accounts, records or memoranda than those prescribed or approved by the commission. In the case of common carriers, the commissions are often specifically required to conform, as far as possible, to the system and form of accounts established and prescribed from time to time by the Interstate Commerce Commission. In about one-fourth of the states—Arizona,²⁷ California,²⁸ Idaho,²⁹ Illinois,³⁰ Indiana,³¹ Missouri,³² New Jersey,³³

²⁵ Idaho, Illinois, Indiana, Missouri, Pennsylvania, West Virginia.

²⁶ *Acts 1913*, house bill no. 361, §15.

²⁷ *Session Laws 1912*, ch. 90, §49.

²⁸ *Statutes 1911*, 1st extra session, ch. 14, §49.

²⁹ *Session Laws 1913*, house bill no. 21, §47.

³⁰ *Acts 1913*, house bill no. 907, §14.

³¹ *Acts 1913*, house bill no. 361, §§22-25.

³² Public service commission law of March 17, 1913, §61.

³³ *Laws 1911*, ch. 195, §17 (f).

Ohio,³⁴ Oregon,³⁵ Pennsylvania,³⁶ Wisconsin³⁷—special depreciation accounts are provided for: the commission is empowered to require proper and adequate depreciation or deferred maintenance accounts to be kept in accordance with prescribed forms and regulations whenever it shall determine that depreciation accounts can reasonably be required. And the commissions are given authority to examine as well as to prescribe accounts; that is, the commission or the commissioners or their duly authorized agents or examiners may have access to the accounts of the utilities and may at all reasonable times examine and inspect them. Heavy penalties are usually imposed for violations of accounting provisions.

The duty is almost invariably imposed upon utilities to transmit to the commission at specified intervals or at such time as the commission may designate, regular reports of their doings setting forth such facts, statistics and particulars relative to their business, receipts and expenditures as may be required by the commission. In many states special reports may also be called for by the commission at different intervals. It is often provided that the commission shall furnish blank forms for regular or special reports; and the reports must be duly sworn to or verified by such officers or persons as the commission may designate. Full and specific answers must be given to all questions propounded by the commission, or sufficient reasons must be stated for failure to make such answers. In case the reports or returns appear to be defective or erroneous, the commission is usually given the power to order their amendment within a specified time. It was very common in the older utility laws, particularly for the regulation of railroads and common carriers, to prescribe by statute the detailed contents of annual reports; but in pursuance of the general trend of giving commissions ample discretion in the regulation of utilities, the more advanced legislation, including most of the recent laws, vests complete power in the commissions as to the scope of the reports of utilities. Heavy penalties are usually imposed for the violation of provisions relating to reports.

³⁴ *Laws 1911*, no. 325, §§51, 52.

³⁵ *General Laws 1911*, ch. 279, §17.

³⁶ *Laws 1913*, no. 854, art. II, §1(i); art. V, §15.

³⁷ *Laws 1907*, ch. 499, §1797m-15.

QUALIFICATIONS NEEDED FOR PUBLIC UTILITY COMMISSIONERS

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This paper considers (a) the qualifications which are needed for public utility commissioners and (b) the manner of obtaining the needed qualifications. Under the first division are examined the qualifications prescribed by the various commission laws; the effectiveness of these requirements in obtaining men of the right caliber for the positions is discussed; conclusions are drawn from the discussion and from general observations regarding the responsibilities of the positions.

Under the second division are considered the manner of selecting commissioners, terms of office, salaries, political interference, facilities afforded commissions, educational helps and sustained public interest. The extent to which legislation can assist in procuring the needed qualifications is discussed.

A. QUALIFICATIONS NEEDED

Qualifications Prescribed by Statute

Most of the public utility commission laws prescribe some qualifications. The laws¹ are by no means uniform and in the aggregate they cover a wide range.

1. *Oath.* It is generally required that commissioners shall take and subscribe to the constitutional oath of office and such other oaths as may be prescribed by law.

¹ For a comprehensive analysis of the statutory provisions with full citations up to 1913, see *Commission Regulation of Public Utilities*. The National Civic Federation, New York, 1913. Oath of office, p. 74; age, political condition, geographical location, previous experience, bond, bi-partisan requirement, pp. 65-73; general disqualifications for interest, pp. 79, 86; special disqualifications for interest ¶ 3712, 3723, 3738, 3745, 3751, 3766, 3770, 3780. See also subsequently enacted public service commission laws of Pennsylvania, West Virginia, Indiana, Illinois, Missouri, Idaho and Montana.

2. *Age.* Where age qualifications are prescribed, prospective members must be 25² or 30³ years of age.

3. *Political Condition.* Persons appointed or elected to commissions are required to be qualified electors,⁴ qualified voters,⁵ citizens of the United States⁶ or of the state⁷ or reputable and competent citizens.⁸ They must be resident citizens in some states.⁹ In others they must have been citizens for two years,¹⁰ or residents of the state for two years¹¹ or for five years.¹²

4. *Bi-partisan Requirement.* Some of the statutes¹³ provide that no more than the number equal to a scant majority of the commissioners shall be members of the same political party.

5. *Geographical Location.* In some states members are chosen from congressional,¹⁴ special commission,¹⁵ supreme court¹⁶ or other¹⁷ districts. In such cases the persons selected must be residents of the districts for which they are chosen.

6. *Previous Experience.* In Georgia¹⁸ one commissioner must be experienced in law and one in railroad business. In Kansas one is required to be a practical, experienced business man and one experienced in the management or operation of a common carrier or public utility. In Maine¹⁹ the chairman must be learned in law. Of

² Arkansas, Maryland, Missouri, North Dakota, South Carolina, South Dakota, Tennessee and Texas.

³ Georgia, Kentucky, Nebraska, New Jersey, Oklahoma and Pennsylvania.

⁴ Alabama, Arizona, California, Connecticut, Georgia, Kansas, Montana, North Dakota, Pennsylvania, Rhode Island and South Dakota.

⁵ Arkansas, Maryland, Missouri, Nebraska, Oklahoma, Tennessee, Texas.

⁶ North Dakota, South Dakota.

⁷ New Jersey, Virginia.

⁸ South Carolina Public Service Commission.

⁹ Arkansas, Massachusetts, Nebraska and Texas.

¹⁰ Kentucky.

¹¹ Oklahoma, Pennsylvania, South Dakota and Tennessee.

¹² Maryland, Missouri.

¹³ United States, Illinois, Indiana, Kansas, Nevada, Ohio.

¹⁴ Alabama, Arkansas, New Mexico.

¹⁵ Louisiana, New York, Oregon.

¹⁶ Mississippi.

¹⁷ Kentucky, South Dakota.

¹⁸ Commission has jurisdiction over railroad, express, street railroad, dock, wharfage, terminal station, telephone, telegraph, gas and electric light and power utilities.

¹⁹ The commission is strictly a railroad commission.

the two associates one is a civil engineer experienced in the construction of railroads and the other is experienced in the management and operation of railroads.²⁰ One member of the Michigan Railroad²¹ Commission is required to be an attorney having knowledge of and being experienced in the law relating to common carriers while the other two have knowledge of traffic and transportation matters. In Nevada²² the chief commissioner must be an attorney at law and well versed in the law of railroad regulation, while the first associate must be a practical railroad man familiar with the operation of railroads in general, and the second associate commissioner have a general knowledge of railroad fares, freights, tolls and charges. In Ohio and Wisconsin one member must have a general knowledge of railroad law and each of the other two members a general understanding of matters relating to railroad transportation.²³

7. *Bond.* In some states members of commissions are obliged to give bonds in amounts ranging from \$1,000 to \$20,000.²⁴

8. *Special Disqualification for Interest.* The provisions relating to the capacity of commissioners to participate in particular proceedings are substantially the same in all the statutes in which they occur. The act to regulate commerce provides that no commissioner shall participate in any hearing or proceeding in which he has any pecuniary interest.²⁵ The constitution of New Mexico provides that no member of the commission shall be qualified to act

²⁰ It is significant that the salary provided for the chairman is \$2,500 per year while that of the two associates is \$2,000 each.

²¹ Commission has jurisdiction over railroad, express, electric transmission and telephone utilities.

²² Commission was established as a railroad commission. Subsequently it became *ex officio* the public service commission. No change was made in the qualifications for commissioners.

²³ Each of these commissions has extended jurisdiction over utilities other than railroads. The Wisconsin commission has jurisdiction over municipalities.

²⁴ Illinois, Indiana, Kansas, Minnesota, Montana, North Dakota, Oregon, South Carolina (Public Service Commission), South Dakota, Tennessee and Washington.

²⁵ Act to regulate commerce, as amended, sec. 17. See also *Iowa Code 1897*, sec. 2142; *Minnesota rev. laws 1905*, sec. 1955; *Montana rev. codes 1907*, sec. 4363; *North Dakota rev. codes 1905*, sec. 4362; *Pennsylvania public service company law, 1913*, art. iv, sec. 12; *South Dakota rev. pol. code 1903*, sec. 192.

on any matter pending before the commission in which he is interested, either as principal, agent or attorney.²⁶

9. *General Disqualification for Interest.* General disqualifications are imposed for interest in (a) public utilities, (b) other public or private offices, and (c) political activity.

a. In some jurisdictions it is provided that no person employed by or connected with, or holding any official relation to, or owning bonds or stock of, or having any direct or indirect or pecuniary interest in any public utility, shall be eligible to enter upon the duties or fill the office of commissioner. In some cases the prohibition extends only to such relations with public utilities under the jurisdiction of the commission. In others, it extends to all public utilities of the kind over which the commission has jurisdiction.

b. The prohibition frequently occurs that no member of a commission shall engage in any other business, employment or vocation, or hold any other political office. It is variously expressed in the different statutes. The Wisconsin law provides that each commissioner shall devote his entire time to the duties of his office.²⁷ The Nevada statute provides that these limitations and restrictions shall not apply to the second associate member, but it is provided that no commissioner shall be a member of any political convention or a member of any committee of any political party.²⁸

c. The recently enacted (1913) public utilities act of Idaho contains a stringent restriction against political activities of commissioners. It provides as follows:

No commissioner shall, directly or indirectly, while he is a member of said commission, take any part in politics by advocating or opposing the election, appointment or nomination of any person or persons to any office in the state of Idaho, excepting under officers in the commission, nor shall any commissioner seek appointment or election or nomination for any civil office in the state of Idaho, other than commissioner, while he is a member of said commission nor shall any commissioner seek appointment, nomination or election to any civil office in the state of Idaho, other than that of commissioner, for a period of two years, from the date of the expiration of his term or after his resignation or removal from said office.²⁹

²⁶ Art. xi, sec. 3.

²⁷ *Laws 1907*, ch. 582, sec. 1797-1 (d).

²⁸ *Stats. 1907*, ch. 44, sec. 1, as amended by *Stats. 1911*, ch. 193.

²⁹ Sec. 7.

Discussion of Statutory Qualifications

Some of the qualifications prescribed by statute may be dismissed with scant consideration. The age requirement seems to have little practical value. The giving of a bond for the faithful performance of his duties is no assurance to the public that a commissioner will prove satisfactory and successful. The oath of office has a recognized place in our political system and no special significance attaches to its use in this connection.

The requirements relating to political conditions and geographical location would seem to serve little purpose. Citizenship in state or nation is no guarantee of faithful and efficient public service. Residence in the state at the time of elevation to office or for a prescribed period prior thereto has no practical meaning. Theoretically, at least, the best available men in the country or in the world should be eligible to these positions. Practically, a popular aversion to selecting non-residents for lucrative public offices seems to exist; it is a factor to be reckoned with.

Geographical location is an indefensible qualification except in such a case as New York, where two commissions are established with mutually exclusive territorial jurisdictions.³⁰ No unit of representation should be employed in a commission smaller than the general unit of territorial jurisdiction of the commission. The problems are state problems, or, in the case of the Interstate Commerce Commission, national. Organization of a commission on any other basis might easily result in the playing off of one section against another. Particularly would this be likely to occur in the case of such services as those of railroads, telephones, telegraphs and express, which are conducted in all parts of states and the nation.

General disqualification for pecuniary or other interest in public utilities is much debated. If it is approved, no occasion exists for the special disqualification to participate in proceedings in which the commissioner has a pecuniary or other interest. The two provisions seem to be mutually exclusive.

In favor of the interest disqualification to hold office, the following points may be urged: Pecuniary or other personal interest is

³⁰ Even in New York, however, the separation of territorial jurisdiction has ceased to be complete. In 1910 the legislature conferred on the second district commission jurisdiction over telephone companies in the first district.

opposed to public and private morals; a close parallel to the judiciary exists; but while judges, when unable to sit in a particular case, can call in other judges, no such opportunity is available for commissioners; the duty of regulating public utilities is continuous and is not confined to deciding contested cases.

Arguments in favor of the special disqualification and opposed to the general one may be summarized as follows: Commissioners should be men of substance; it is an unreasonable restriction to exclude a member of a commission from the very large field of investment in public utility securities; no possible injustice can occur if members are not allowed to participate in proceedings in which they have a personal interest; if necessary, provision may be made for special commissioners in cases of special disqualification.

Popular prejudice rather than reason probably has done much to affect the statutes on the subject. Because of the continuing nature of public utility regulation with respect to its incidence on the subjects of regulation, however, as contrasted with judicial administration of law, the general disqualification probably is wiser than the special disqualification to sit in proceedings in which an interest is held.

The statutory prohibitions of political activity recognize a sound principle. It is doubtful, however, whether they can be depended upon to accomplish their purpose. Political interference can not be legislated out of existence. In spite of statutory prohibitions it will exist just so long as it is countenanced by public opinion. Accordingly, no great reliance can be placed upon prohibitive statutory provisions.

Provision for bi-partisan boards probably is wholesome. It conforms to traditions of party government and is applied to courts which are appointive.

Manifestly, a member of a commission should occupy no other public office. This rule may work apparent hardship in some cases, as for instance, membership on school and other boards where the reward is in the honor rather than in the remuneration. Unless exceptions to the general rule are carefully made, however, it would seem that they should be avoided altogether. Most of the commissions are so burdened that their members are unable to engage in any other business.

The provision of the Idaho statute previously quoted is extreme in its limitation on certain fundamental rights of citizenship. It

would seem unnecessary to prevent a member of the commission from taking an interest in elections or even in appointments. Here the state is bordering dangerously on disfranchisement. Of course, there is a line beyond which the sense of propriety is shocked. This line may be hard to define and in the final analysis public opinion rather than statutory enactment should be relied upon to protect the public interest. The prohibition against "seeking" a public office other than that of commissioner within two years after being out of the office would seem to be unreasonably stringent as well as practically futile.³¹

Does previous experience afford an adequate test of fitness? We have seen that several of the states prescribe such qualifications. They are based on what may be called a division of authority conception of the organization of a commission. Both as a statutory requirement and as a rule of convenience for the appointing power, this conception has many adherents.

The chief arguments in favor of the experience qualifications may be summarized as follows: Successful administration of commission laws requires high ability; the problems are of a technical nature; members of the commission should possess those high qualifications which go only with long experience and recognized standing.

Briefly summarized, the opposing arguments seem to be as follows: Admitting the technical nature of the problems of regulation, opponents of the theory believe that the required proficiency can be had better through staffs of experts regularly or specially retained; a commission of three, five or seven members is not large enough to enable all branches of special knowledge and training to be represented by members; the commission is an entity, not an aggregate of individual units, and each member must be held fully responsible for every action of the commissions; neither membership nor high standing in one of the specified professions or callings is a certain guarantee of fitness for the peculiar duties of a commissioner; the vital questions of commission regulation lie in the province of no single profession or calling but belong in the broad field of the social sciences.

³¹ See also Pennsylvania public service company law, art. iv, sec. 12, which provides that no commissioner shall during his term be a candidate for any other appointive or elective office of the commonwealth or any municipality thereof.

No question before commissions of the country today is of more importance than valuation.³² We refer to valuation in a broad sense, of which reproduction value, original costs, going value, franchise value, depreciation, surplus, unearned increment, etc., are details. The great issue is the nature of value and not the application of the rule of value to particular cases. Great economic and political consequences hinge on the result. An incipient agitation for government ownership of railroads has already appeared, based on the application to unearned increment of one of the present value theories.³³

No certain pronouncement on the nature of value has proceeded from the supreme court. The field is an open one and the commissions are the experimental laboratories. The fiat of commission or court will not long be controlling unless it is fundamentally sound. A rule too strict in its application may result in stagnation of public utility enterprise; one too liberal may plunge the country into a decisive public ownership movement. Value is an economic conception. The valuation rule seems today to be the common point of contact between the equities, respectively, of the public utilities and the public. The fundamental laws of political economy and political science are involved. The issue is one of public policy, not of law. It is one of broad, general, business principle; not of any one of the natural or applied sciences as opposed to all the others.

Valuable contributions to the valuation problem have been made by economists. This calling might well be entitled to serious consideration in a division of commissionerships among the professions. Merely being an economist, however, is no more a qualification for such a position than merely being a lawyer is a qualification for a difficult legal task, or merely being an engineer is a qualification for a specific engineering task. After all, the important consideration is the degree of attainment of the particular individual.

Previous experience as a qualification is like practicality. But what is a "practical" man? Every industry would have its own conception. Most of the commissions have jurisdiction over a wide range of utilities. The list includes at least the following:

³² See "The Vagaries of Valuation," by John H. Gray, in *Am. Econ. Review, Supplement*, March, 1914.

³³ See letter of Clifford Thorne to Senator Kenyon, in the *Congressional Record*, 1914, p. 2223. See also report of Committee on Valuation and discussion thereon, *Proceedings of 25th Annual Convention, National Association of Railway Commissioners*, 1913.

Railroad, steam	Electric central station	Local express and trans-
Railroad, electric	Electric, transmission	fer
Railway, street	Gas	Water carriers
Express	Water	Pipe lines
Telephone	Heating	Cable companies
Telegraph	Coal	Fast freight lines
		Refrigerator lines

This list is not necessarily exhaustive. As new accessions come to the field of quasi-public industry it is to be expected that it will be added to. Manifestly, it is impossible to provide places on regulating commissions for men who are "practical" from the standpoint of each.

A candidate for a position should not be disqualified because he is "practical." On the other hand, too, being "practical" is not a sufficient qualification. A man chosen to such a position because he represented a particular point of view might inject into the deliberations of a commission and its entire activities a partisanship which would be anything but desirable.

The truly practical man is the one who is broad enough to comprehend all points of view and to act accordingly.

The scope of the duties of public service commissioners is broad. Doubtless it is impossible to find even one man, not to speak of three, five or seven men, who possesses the breadth of knowledge, the experience and the capacity desirable in the abstract. Regulation of rates, services, accounts, stock and bond issues, intercorporate relations, competition and other activities of a number of industries having state-wide or nation-wide extent is a large task. The least common denominator of this wide range of responsibilities probably is the gathering, correlation and analysis of facts and drawing sound and rational deductions therefrom.³⁴ This implies as a prime qualification the quality of mind that makes a better-than-ordinary diagnostician of a physician and gives us the brilliant lawyer. The greatness of mind which manifests itself in conspicuous leadership in marshalling human and material forces is wanted for the regulation of public utilities. It makes little difference whether this great-

³⁴ For information necessary for working out a schedule of rates for electric utilities, see address of John H. Roemer, chairman of the Railroad Commission of Wisconsin, before the Illinois Gas Association, March 18, 1911. The outline is reprinted in *Regulation of Municipal Utilities*, by C. L. King, p. 194.

ness of mind is produced through the training of a lawyer, an engineer, an accountant, a banker, an economist or a plain business man. It can not be defined by statute nor obtained through statutory enactment.

Conclusions as to Qualifications Needed

1. *Summary of Statutory Requirements.* Statutory requirements on the following subjects are not helpful: Oath, age, political condition, geographical location. Public morals require either a general or special statutory disqualification for private interest in the public utilities regulated. Commissioners should be prohibited from holding other public offices. The prohibition of political activity is sound in principle but ineffective in practice. If commissions are given authority and facilities with which to work, their members will have no time to engage in other businesses. The bi-partisan requirement is rational but not effective alone.

2. *Function of Laws.* The part which the law-makers can play in procuring the needed qualifications is set forth in a subsequent part of this paper. The chief function of the law is to create a condition which will make the positions attractive to men of the right type. The essential qualifications are suggested largely by the discussion of the inadequacy of the special statutory provisions. They are summarized in the following paragraphs.

3. *Physical Capacity.* Members of public utility commissions need to be vigorous physically. The work is large in volume and seems to be increasing rapidly in the commissions which are giving good accounts of themselves. Long working hours are the rule, and few vacations. From the standpoint of the physical strength required to enable one ably to acquit himself as a commissioner, the position is no sinecure.

4. *Aggressiveness.* Public service commissions are administrative bodies. They are charged with duties of constant supervision. They are empowered to initiate all proceedings necessary to accomplish the purposes of the laws. Merely passive enforcement of commission laws will not long command public respect and confidence and serve as a remedy for abuses, alike on the part of the public and the corporations, which it is the purpose of commissions to prevent. Aggressiveness should be found in public service commissioners.

5. *Tact and Resourcefulness.* Corporations are managed by men. The public in its organized capacity is represented by men. The public service commission sometimes acts as a buffer between the two groups of men and sometimes as counsellor and guide to one or the other. In filling these capacities, tact and resourcefulness are essential attributes of the commissioners.

6. *Intelligent Interest in Public Utility Problems.* It is futile to entrust the regulation of public utilities to men who have no intelligent interest in the subject matter. This interest need not have gone so far as to be the basis of a professional or business career, but it should be great enough to have given its possessor a general knowledge of the nature of public utility problems and a real willingness to use his utmost ability to master the subject.

7. *Genius for Research.* Commissions are approaching from one point of view economic and social problems on which the corporation fraternity and individual members of the public have been working for years. The time was when rates and services of public utilities were because they were. Like Topsy, they had just grown. In the last few years corporations have subjected their rates to close analytical scrutiny and in many, if not all cases, rate structures and individual rates are the result of deliberate, constructive and honest endeavor. Just so, honest and careful consideration has been given to the same subjects by members of the public. That conflicts of opinion have resulted, was, and is, inevitable. The public service commission must attack the same problems, not from the standpoint of one or the other of the contending parties, but from the standpoint of the general, public welfare. The commission must adopt a process of scientific analysis, just as the others have done. It must become a practical laboratory of research. Members of the commission should possess a peculiar genius for investigation.

8. *Freedom from Bias.* Strong prejudice usually is a deterrent to a successful career. In any activity it must be distinguished, however, from the commendable qualities of self-confidence and courage in the strength of one's convictions. Men who have shown prejudice or bias on any of the multifarious problems of regulation should not gain access to commissions. They are a menace to the public welfare.

9. *Fairness.* Public service commissioners should be fair. The rules of conduct which they are required to enforce are characterized

by reasonableness, adequacy and consonancy with the public welfare. It is highly significant that the successful commissions of the present day—the commissions which command the respect and confidence not alone of the public but of the public utilities regulated—are characterized on all sides as *fair*. The problem of regulation is not of a day, of a decade, nor of a generation; it is one of years to come and fairness above all things should characterize its beginnings.

10. *Previous Service*. Commissioners who have served their terms honorably and capably should retain their positions. Length of service adds to the ability and efficiency of the incumbent. Displacing a competent commissioner means sacrifice of a valuable resource. The education of new commissioners is costly to all concerned.

11. *Executive Ability*. The chairman of every commission should combine with other qualities that of executive ability. Some of the commissions are in reality large business institutions. Each must have a capable head. Disregard of this policy must inevitably result in inefficient administration.

B. MANNER OF OBTAINING NEEDED QUALIFICATIONS

1. *Manner of Selection*. Public utility commissioners should be appointed by the chief executive. On this point there seems to be substantial unanimity of opinion. Of 169 positions falling within this category, 104, or 61.6 per cent, are appointive. The remaining 65, or 38.4 per cent, are elective. Mere cursory consideration of the qualifications needed should convince one that the electorate is not competent to find and select the best men for these positions. Subordinate positions in the commissions may be filled under civil service rules. It is not likely, however, that any system of promotion will be evolved in the near future for filling, from the ranks, the offices of commissioner. It seems doubtful whether any system of promotion will produce in commissioners the needed qualifications.

2. *Term of Office*. The term of office must be long enough to enable a new commissioner to become acquainted with the duties of the office and to attain a degree of proficiency which will repay him for the early effort. We recall a statement of a member of one of the important commissions that it requires no less than a year

for a new commissioner to be thoroughly broken in. Table I shows the number of terms prescribed by the various statutes today, the range of the several periods and the number of commissioners holding office for the period of each term.

TABLE I.—TERMS OF COMMISSIONERS³⁵

Terms in Years	Number of Commissioners
2	6
3	15
4	23
5	15
6	92
7	7
8	4
10	7
	169

	Years
Maximum.....	10.0
Minimum.....	2.0
Arithmetic average.....	5.63
Weighted average.....	5.48
Mode.....	6.0

From this table it appears that six years is the generally accepted term of office. More than 54 per cent of the 169 commissioners included in this computation hold office for this period. The term surely should be no less than six years and it would be a step in the right direction for the states having shorter terms to provide the 59 commissioners with at least six years of official life.

3. *Salary.* The salaries must be large enough to attract men possessing the needed qualifications. Table II shows the number and range of salaries paid public service commissioners and the number of commissioners receiving each salary.

³⁵ In making this computation all of the state commissions and the Interstate Commerce Commission were included with the exceptions of the commission of the District of Columbia and the Public Service Commission of South Carolina.

TABLE II.—SALARIES OF COMMISSIONERS

Amount of Salary	Number of Commissioners	Amount of Salary	Number of Commissioners
\$1,500	3	\$4,500	5
1,700	2	5,000	16
1,900	3	5,500	5
2,000	8	6,000	18
2,200	4	7,500	3
2,500	12	8,000	4
3,000	22	8,500	1
3,200	1	10,000	18
3,500	7	10,500	1
3,600	1	15,000	10
4,000	25		
			169
Maximum.....			\$15,000
Minimum.....			1,500
Arithmetic average.....			5,209
Weighted average.....			5,362
Mean.....			4,000
Mode.....			3,000-4,000
Number receiving more than weighted average.....			60
Number receiving less than weighted average.....			109

The minimum salary is \$1,500 a year and the maximum \$15,000. The arithmetic average is \$5,209 and the weighted average \$5,362. The mean is \$4,000 and the mode lies between \$3,000 and \$4,000. These figures indicate that under existing conditions most of the salaries are extremely small in comparison with corporation salaries. In fact, only 60 of the 169 commissioners receive more than the weighted average while 109 receive less.

The precise amount which should be paid is not susceptible of mathematical determination. It is quite evident that a salary less than \$5,000 cannot be expected to attract men of the high caliber desired. Commissioners possessing the proper qualifications would seem entitled to salaries at least as large as those paid members of the highest state court.

4. *Political Interference.* Commissioners should be free from political interference. Terms of office should overlap so that no complete change in the personality of the commission will occur in a single year. This is an element of protection for the capable commissioner.

Appointments to subordinate positions should be at the discretion of the commission unless they are under civil service. No objection seems to exist to the application of civil service rules except, perhaps, in the case of responsible department heads or experts. Appointments made by the commission should not be subject to executive approval or disapproval.³⁶ Otherwise the way is laid for political interference. Similarly, within appropriations made, the commission should fix the compensation of its employees at its own discretion.³⁷

All foreseen possibilities of political interference should be avoided in the law. Otherwise it is difficult to make the positions attractive to men of the right caliber.

5. *Facilities Afforded Commission.* Legislators must make ample provision for working equipment, employees and other facilities. Commissioners cannot perform their duties unaided. They should have ample means at their disposal and a large measure of discretion as to the use of such facilities. It is the practice of some legislators to make minute divisions of appropriations for commission purposes. This destroys flexibility. It would seem preferable to give the commission free rein within the limit of the aggregate appropriation. Similarly some legislatures limit the number of employees and fix by statute the compensation of each. Such a practice fails to take into consideration the varying needs of the commissions.³⁸

Some of the work of the commissions is expensive. Valuations, for instance, run rapidly into money. Where a valuation is essential to the determination of a case the valuation should be made,

³⁶ The Illinois public utilities commission law of 1913 provides that the commission shall have power "upon consultation with and the approval of the governor" to appoint or employ additional employees as it may deem to be necessary to carry out the provisions of the act. See sec. 3.

³⁷ Section 5 of the Illinois law provides that all employees of the commission shall receive the compensation fixed by the commission subject to the approval of the governor.

³⁸ The Missouri public service commission act of 1913 provides that all persons appointed by the commission shall receive a compensation fixed by the commission, but that no clerk, agent, special agent, examiner, auditor, inspector or other employee shall receive a salary or compensation exceeding \$150 per month and no stenographer shall receive a salary or compensation exceeding \$100 per month. Commissioners possessing the proper qualifications could be trusted not to waste appropriations in extravagant salaries.

otherwise discredit is brought on the system of regulation, the commission and the commissioners themselves. Men possessing the desired qualifications will hesitate to assume responsibilities for the discharge of which they are not provided with adequate facilities.

6. *Educational Aids.* In the long run some progress can be made towards equipping men for these positions by special courses of instruction in schools, colleges and universities.³⁹ Systematic distribution of authentic information on various phases of the subject assists directly by elevating the general standard of knowledge on the subject of public utility regulation. Voluntary associations of public utility employees, boards of trade, chambers of commerce, professional associations and other organizations of a similar type offer a forum for the discussion of public utility problems and frequently a means for coming in actual contact with the application of commission laws. The commissions themselves are doing much in an educational way through the medium of opinions rendered in deciding cases.

7. *Sustained Public Interest.* Nothing is more effective in obtaining the needed qualifications than an active and sustained public interest in regulation. A healthy public interest adds materially to the honor of the position and quickens the right kind of competition for preferment. Sound public opinion will do more to procure the qualities of mind and body than tomes of statutes. Such an interest will react favorably on the appointing and confirming powers. All the multifarious factors entering into the cultivation and maintenance of an active public interest should be kept in operation.

8. *Function of the Law-maker.* The chief function of the law-maker in procuring the needed qualifications for public utility commissioners is so to legislate as to make the positions attractive. As to the powers themselves, little need be said. In most cases they are large enough to stimulate the imagination and ambition of men far above the average in mental capacity and achievement. The same, however, cannot always be said about the conditions under which

³⁹ See excellent "Preliminary Report of the Committee on Practical Training for Public Service," in the Proceedings of the Am. Pol. Science Assn., Tenth Annual Meeting, 1913, published as supplement to *The American Political Science Review*, February, 1914. This report points the way to practical experience in public affairs under the auspices and direction of the university.

the duties are to be performed. Let the legislator, then, provide a rational method of selection! Let him provide a term of office and a salary that will be attractive! Let him provide adequate facilities for carrying on the work of the commission and let him make political interference improbable, if not impossible! Then let our educational forces begin their work, and, finally bring a healthy public interest in regulation to bear on the commissionerships! The problem of obtaining the needed qualifications for public utility commissioners then will be greatly simplified, if not entirely solved.

THE PUBLIC SERVICE COMPANY LAW OF PENNSYLVANIA

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State commission regulation of public utilities—regulation having the binding force of law—began in Pennsylvania on the first of the present year when the public service company law of July 26, 1913, went into full effect.

This legislation drafted by Attorney-General Bell, to carry out the policy expressed in Governor Tener's inaugural address and subsequent messages to the legislature, establishes a commission of seven members, which, acting upon its own motion, as well as upon complaint, has full power extending throughout the commonwealth to supervise, investigate, and, by its reasonable orders, to regulate the service and rates of public service companies to the end that such service shall be reasonably adequate and furnished without unreasonable discrimination or preference (as to either rates or service), at such rates of compensation as shall be just and reasonable to the public and the public utility alike.

Prior to this time there had been no regulation of the kind, which, applied by an administrative body of adequate powers, places upon a rational basis of control, and makes real, the true legal and economic relation existing between quasi-public corporations or unincorporated public service companies and the public whom they serve. Pennsylvania has moved more slowly and conservatively toward this end than have Wisconsin and New York, as if awaiting the result of the experience gained from the practical operation of similar statutes in these sister states during the past six years. In 1907, the same year which witnessed the enactment of the advanced Wisconsin and New York statutes, the Pennsylvania legislature passed an act pursuant to which the Pennsylvania State Railroad Commission was established, and which gave that body power to make investigations, to hold hearings, and to make recommendations as the result thereof, but gave it no power to order compliance with its recommendations when made. Within the limits of such restricted powers the work done by the

Pennsylvania State Railroad Commission was of much value and prepared the way for the adoption in 1913 of the more comprehensive and effective system for the regulation of all public utilities by the present Public Service Commission of the commonwealth.

There can be little doubt that there will always be some sort of governmental control of public utilities. By reason of the public nature of their business, the common law itself has, from the earliest times, prescribed general rules by which this business shall be governed, leaving the application and enforcement of these rules to such processes as the judicial department of the government has the power to employ for that purpose. With the progress of science and invention and the general advance of civilization, have come the steam railroads, the telegraph and the telephone among the great utilities of state-wide and country-wide operation. Under modern conditions these public utilities are practically public necessities. There are also the electric light, heat and power companies; the electric railways and the gas companies; the water companies and the like, whose activities in the interest of public economy tend to become more and more state-wide and to present social and industrial problems not merely of local concern but of state-wide importance. It has become apparent that no substantial progress can be made toward the practical adjustment of the true relationship between such utilities and the public, and of the rights and duties on both sides of that relationship, by resort either to the courts or to spasmodic legislation. The non-feasibility of either of these methods is perfectly obvious. Neither is there need to review the positive evils caused by such methods of dealing with this vital problem.

Intelligent and adequate regulation pre-supposes, in a continuing administrative agency of the government, that knowledge of operating and other conditions of the public utility business, which is wholly beyond the proper sphere of action of either the judiciary or the legislature, in periodical assembly met, to have, acquire or apply. There must be a governmental agency to which a complainant, without the means sufficient to carry on litigation, may go for redress of his particular grievance, and, moreover, obtain not merely the negative but positive remedy. This tribunal must be able to sift the merits of the individual complaint and the complaint of the public generally, in the light of the data and information which as a continuing body it either has, or in the exercise of its adequate powers for that purpose,

it can and should get, so as to make the proper application and adjustment of the general rules of law to the particular facts and conditions as they may be determined. Neither the general assembly nor the courts are institutions of a character adapted to the discharge of this indispensable function. An executive or administrative body such as the commission under the Pennsylvania public service company law, is so adapted, and best adapted, for that purpose. It is the clearing house for such public complaints as arise from lack of necessary information, as well as for those which prove well founded and require correction. The public and the utility are thereby equally protected; their respective rights and obligations under the law are weighed in the balance and adjusted; specific rules and regulations of uniform application under like circumstances are laid down for the guidance of the public and of the utilities, and are in the interest of both.

It will not be possible, within the limits of this brief résumé, to mention other than the more important provisions of the new Pennsylvania statute. The act has been drawn with a great deal of painstaking care. The provisions of the similar acts in Wisconsin, New York and New Jersey, have been subjected to considerable study in the light of their practical operation in those states. More recent legislation, such as that in California, Maryland and elsewhere, was also reviewed. The effort was to prepare a sound, comprehensive and effective measure.

In arrangement the act is divided into six articles. Article I is devoted to an enumeration of the classes of public utilities within its provisions—which enumeration includes all classes—and to the definition of such terms as “service,” “facilities,” etc., as these terms are used throughout the act. Article II sets out specifically the “duties and liabilities of public service companies.” Article III consists of the definition of the corresponding “powers and limitation of powers of public service companies,” and the provisions governing their creation. By article IV, the establishment of “the Public Service Commission of the Commonwealth of Pennsylvania,” its officers and employees, etc., is provided for. Article V is the article in which the “powers and duties of the commission” are defined; and article VI prescribes the “practice and procedure before the commission and upon appeal.”

It is made the express duty of every public service company to

furnish reasonably adequate and reasonably safe service at just and reasonable rates. Rates, and rules and regulations, etc., affecting rates, must be set forth in tariffs or schedules which the act requires shall be posted and kept open to public inspection. The posting of these tariffs is mandatory. The furnishing of any service without such posting of tariffs is unlawful. The commission may also require the tariffs to be filed as well as posted and will undoubtedly do so, now that the tariff bureau has been organized.

No change in either a posted or filed tariff can be made except upon 30 days' prior notice to the commission. Similar 30 days' notice of the effective date of change must also be given to the public by posting such notice. The commission is given the power, however, to allow a change in tariff on less than the 30 days' statutory notice if cause be shown. In the event that the commission has prescribed a rate, practise or classification, no change can be made therein, within a period of three years thereafter, without the express approval of the commission. These provisions of the law likewise apply to joint rates and joint tariffs. If the tariff be filed, the filed rate is the legal rate as against the company, otherwise, the published or posted rate is such legal rate.

When, after investigation and hearing, the commission finds that any rate is unreasonable, unjustly discriminatory or unduly preferential, it has full power to prescribe by its orders the just and reasonable maximum rates or joint rates as the case may be, and also to apportion the said joint rates. It has similar power to prescribe reasonably adequate and safe service, including facilities. In so doing, the commission may act as in the investigation of accidents, and as indeed, in all other matters, on its own motion as well as upon complaint.

The enumeration of specific duties as to the furnishing of facilities and service imposed upon common carriers and other public utilities by the statute would be prohibitively tedious. Among these duties of carriers, for example, are those relating to the equitable distribution of cars, reasonably continuous transportation, the construction of switch connections, the establishment of through routes and joint rates, the location of stations, grade crossings, the reporting of accidents, and the like.

An initial carrier receiving property for through shipment between points in Pennsylvania incurs, under the act, a liability for loss or damage in transit similar to that imposed by the Carmack

amendment to the interstate commerce act. There is, however, a little different treatment of the initial carriers' right of recovery over against the connecting carrier actually causing the loss, which perhaps provides a fairer adjustment than that prescribed by the corresponding provision in the Carmack amendment.

The commission has power to award reparation to the person actually sustaining damage by reason of the collection of rates found by the commission to have been unjust and unreasonable or unjustly discriminatory or unduly preferential, or in excess of the applicable rates contained in the tariffs. For the collection of the amount named, in the order of reparation, suit may be brought in any of the courts but no action can be brought in the courts for the recovery of reparation for the above mentioned wrongs until the commission shall first have determined the facts as to the violation of the law in these respects.

The commission has complete power to prescribe a uniform system of accounting to be followed by the various classes of utilities. In ascertaining fair value of property for rate making and other purposes of regulation, the commission is not in any wise confined to any particular formula. It may take into consideration such matters as original cost of construction, cost of reproduction, new, etc., etc., as referred to in Justice Harlan's famous opinion in *Smyth vs. Ames*, 169 U.S., 546, and may also consider such intangibles as developmental or going concern value. It is provided that "these and any other elements of value shall be given such weight by the commission as may be just and right in each case." These elastic provisions of the act, with regard to valuation, though drawn some time before the decision of the Supreme Court of the United States in the Minnesota rate case was announced, are in striking harmony with Mr. Justice Hughes' opinion in that case, viz., "the ascertainment of that value is not controlled by artificial rules. It is not a matter of formulae, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts." Around this vital, economic-legal problem as to what is the "fair value of the property used for the convenience of the public" and the fair return thereon, centers much of the whole problem of rate regulation itself. It was deemed wise to mention in the statute some of the considerations which enter into the ascertainment of this fair value, but the weight

to be given any one or more of them was left to the judgment of the commission.

The expediency of including municipal corporations in the scheme for the regulation of public utilities as prescribed by the act, is, of course, a debatable question. Their omission must be taken to mean that in the legislative judgment, it was for the time being, at least, unwise to subject to the regulative control of a state commission such utilities as are owned and operated by the various local governments throughout the state. There would seem on principle to be less necessity for regulation in such cases where the consumers are also in reality the owners and operators and thus have the remedies for abuses in their own hands. The act does provide, however, that where a municipality is engaged in the rendering of service of the kind rendered by a privately owned utility, it must, under the act, comply with the requirements of the commission as to uniform accounting in the same manner as public service companies.

Commissions have uniformly held that, where a public service company has made its investment for the furnishing of service within a municipality and is rendering, or can be required to render, reasonably adequate service to the community, at just and reasonable rates, another public service company should not, under a proper system of regulation, be allowed to enter into competition with the existing company, unless the commission is satisfied that the public interest and service will be promoted thereby. The same principle would apply, to a very large extent, to such competition by the municipality itself. Hence the act provides that the commission's certificate of public convenience shall be secured before any public service company may lawfully obtain any additional powers, franchises or privileges, and before any municipality may acquire, construct or begin to operate any plant, equipment or facilities for the furnishing to the public of any service of the kind or character already being furnished by any public service company within the municipality. A like certificate of public convenience must be obtained for the incorporation of a public service company, and no contract between a public service company and any municipal corporation is valid, unless it receive the approval of the commission, evidenced by the latter's certificate of public convenience. Such certificates of public convenience are given "if and when the said commission shall find or

determine that the granting or approval of such application is necessary or proper for the service, accommodation, convenience or safety of the public." In this way, needless competition with the long train of evils which it frequently engenders, to the detriment of the public service and rates and the consequent increasing occasion for regulation of such service and rates, is excluded before it becomes entrenched.

There are respectable authorities who still maintain that the sole function of a public utilities commission should be to regulate service and rates to the end that the service shall be reasonably adequate and the rates of compensation just and reasonable, and that the regulation of the subject of capitalization or the issues of stocks, bonds and other securities of public service corporations, has no proper place in a public utility statute. They take the position that it is the duty of a public service company to render, and the function of the commission to require it to render, reasonably adequate service, and to charge no greater rates for that service than will afford fair return upon the fair value of the property of the company, used and useful for the convenience of the public, and that the amount of stocks, bonds and securities outstanding has nothing whatever to do with the question. But it cannot, I think, be successfully contended that the over-capitalization, say of a gas company or an electric light or power company, does not have a direct tendency either to stint the adequacy of the service or the justice of the rates to the consuming public and thereby greatly increase the occasion for the regulation of such service and rates by the commission. If this be true, then the regulation of the issue of stocks and bonds becomes in effect a regulation *pro tanto* of service and rates, and moreover it gets rid of many embarrassing moral obligations having a tendency to confuse what should be the real issues in rate and service regulation. The bona fide investing public, who own the utilities, are entitled to some measure of protection as against what might be the effect of regulation by the government in the interest of the consuming public, and there is in any event the ever present public belief as to the detrimental effect of watered stock and inflated bonds on service and rates.

Whether this public impression proves in the particular case to be well or ill-founded, it nevertheless results in general public dissatisfaction and invites a multiplicity of complaints and therefore the cause of such impression should, as far as possible, be removed.

The best means of accomplishing this object was a question most carefully considered in the preparation of the Pennsylvania act. Wisconsin and New York, and I think, all other states which have undertaken the regulation of public utilities under a system like that now devised for Pennsylvania, have quite uniformly required that the consent of the commission be obtained before a public service company can lawfully issue any stocks, bonds or other securities. This was the method of dealing with this matter which was adopted in the bill originally presented to the legislature in 1911. The arguments urged against it at that time on the score of delay and great practical inconvenience, not only to the companies forced to await the decision of commissions upon the approval or disapproval of their financial arrangements, but on the ground of great practical inconvenience to the commissions themselves, were most forceful. In order to meet these objections and at the same time to provide ways and means whereby the provisions of the constitution of the commonwealth against the watering of securities might be practically enforced by the commission, instead of being allowed to remain the dead letter, as it has so largely been in the past, the attorney-general devised the plan of dealing with this matter which is the distinguishing feature of the Pennsylvania statute. This plan is an adaptation and modification of the certificate of notification or publicity plan, which the Railroad Securities Commission (of which President Hadley of Yale University was the chairman) after much study and solemn deliberation has recommended to Congress for the regulation of the issues of stocks and securities by the interstate railroads of the country. For the justification of this plan, the reader is referred to the very able report of the Railroad Securities Commission. As adapted and modified in the Pennsylvania statute, by means of the certificate of notification filed by the company with the commission at or before the time when the stocks, bonds or other securities are issued, the public is given a detailed description of the property, work or labor in consideration of which such stocks or securities are about to be issued, as well as all other needful information including the purpose of the issue. The commission may then, upon complaint or upon its own motion, investigate and determine whether any such issue has been made for other than "money, labor done or money or property actually received" in violation of the requirements of the constitution and the law of the commonwealth. In the event of such violation, it may

take the appropriate steps prescribed by the act for the drastic punishment of the individual and corporate offenders and the restraint of the consummation of the unlawful purpose. These provisions are supplemented by the requirement that the company shall report or account to the commission for the proper disposition and application of the proceeds of such issues in accordance with the purpose set forth in the published certificate of notification which remains on file with the commission. For such public service companies as desire to make application to the commission for the latter's certificate of valuation on the issue of stocks and securities, the way is left open, as they are given the option so to do. The effect of this certificate of valuation is specifically defined in the statute.

It would require too much space to attempt even a brief analysis of what is perhaps the best system yet devised in a statute of this character for the abolition of railroad and other grade crossings, dangerous to human life; and no railroad crossing of any character can be constructed, whether above grade or below grade or at grade, without the consent of the commission, evidenced by its certificate of public convenience being first had and obtained. Similar approval is necessary for the construction of other crossings including those of high tension electric power lines.

Every statute of the character of the public service company law of Pennsylvania contains provisions as to economic or legal policy about which the opinions of men, most competent to express them, might reasonably differ. Perfection in this kind of legislation perhaps must ever remain but an ideal toward the realization of which human effort in all probability can never reach more than an approximation. It is gratifying to know, however, that an authority, whose judgment is second to none in this country, has stated in a letter to the writer that "I certainly am not familiar with any law on the subject of public service companies which seems to me so good as that of Pennsylvania."

SOME DEFECTS IN THE PRESENT PENNSYLVANIA STATUTE ON PUBLIC UTILITIES

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The municipalities of Pennsylvania will be fortunate if they do not pay a heavy toll as a result of the mistaken policy of the public service company law of 1913 in dealing with the question of competition between municipalities and public service corporations. The lack of control by American cities over these corporations has resulted in an insistent demand that the states give to their cities power to exercise such control both by regulating these corporations and by enlarging the municipalities' power to engage in such enterprises. Aside also from any question of regulation, the steadily growing field of municipal functions has caused the cities constantly to enlarge the scope of their activities in the furnishing of public service. It is hardly germane to the purpose of this article to discuss the question of state regulation versus municipal regulation, but even if it be conceded that regulation by state commission is the proper method, there can be no justification for the restriction imposed by the act on the rights of municipalities to engage in the business of rendering public service.

The act provides that, before any municipal corporation may engage in the rendering or furnishing to the public of any service of the kind or character already rendered or furnished by any public service company in the municipality, the said municipality shall obtain the consent of the commission, except in certain cases where municipalities are already engaged in rendering such services. The commission may not give such consent unless it finds that the exercise of the right by the municipality is necessary and proper for the service, accommodation, convenience or safety of the public. This finding is subject to review by the courts. Since municipal competition will probably result in destroying or at least impairing the value of existing properties it must be an extreme case in which the commission and the courts will feel justified in consenting to such competition.

The protection from competition thus accorded to the public service companies is an asset of great value and should not have been given to these companies without exacting something in return. To do this it is not necessary to give municipalities the right of unrestricted competition. It is proper to protect public service companies from wanton destruction of their property, but in cases where the commission might refuse its consent to the municipality, the municipality should have been given the right to purchase the property of the private corporation at a valuation to be determined by the commission, which valuation should exclude any added value by reason of the protection from competition afforded by the act. It was proposed to accomplish this result by amending the provision so that municipalities should not be required to obtain the commission's consent except in cases where public service corporations had stipulated that they held their franchises upon indeterminate permits. This amendment was rejected by the legislature, probably because it applied the principle of the indeterminate franchise. In my own opinion, the legislature should have gone much further in this respect and provided for an indeterminate franchise not only in the cases specified in the amendment, but for all future grants. I include in my definition of the indeterminate franchise, of course, the obligation on the part of the municipality to purchase the property of the corporation when the franchise shall be terminated. The action of the legislature was a step backward that will tend to increase the tax paid by the public to the public service corporations, instead of lightening this burden.

The sections of the act dealing with the valuation of the property of public service corporations and the regulation of their securities issues will probably produce the same effects in their operation. When the bill passed the house the section dealing with valuations contained no reference to the stocks and bonds of the corporation or the earning capacity of the property. The senate inserted provisions permitting the commission to take into consideration the amount in market value of the corporation's stocks and bonds and the probable earning capacity of the property under particular rates prescribed by statute or ordinance or other municipal contracts or fixed or proposed by the commission.

It is true that this language has the sanction of the supreme court of the United States as expressed in the leading case of *Smythe vs.*

Ames. It must be remembered, however, that this case was a rate case, and the court expressly held that a fair rate was one based on the fair value of the property used in rendering the service. If the opinion had been followed in its entirety by the framers of the Pennsylvania statute, the language quoted would not have been so objectionable, although the case has always been subject to criticism for the reason that there is no necessary relation between the fair value of the corporation's property and the amount in market value of its stocks and bonds. The market value of the corporation's securities depends frequently upon the fact that it enjoys an unregulated monopoly, and has fixed its rates, not with a view to a fair return on the fair value of its property, but with the idea of charging what the traffic would bear. If it shall be held in such cases that the commission is bound to value the corporation's property with reference to the amount in market value of its bonds and stocks, since such valuation will furnish the basis for fixing the rates of the corporation, there will be a wide departure from the principle of *Smythe vs. Ames*.

In dealing with the vexed question of regulating the securities issues of public service corporations, the Pennsylvania law has adopted a compromise between the scheme of those who favored strict regulation and those who believed there should be no regulation at all. It may be conceded that it would be wise for the state not to interfere in this matter, if an ideal method of regulating rates and service could be devised, which would relieve operating officials from the double allegiance they now owe—to investors clamoring for dividends and to the public insisting on good service. So long as it is not possible to do this, I believe in the strict regulation of public service securities issues. Everybody admits that most of the trouble today is due to the over-capitalization of these properties. It seems obvious, then, that regulation to be effective should strike at the root of the evil and prohibit the issuing of these securities except for proper purposes to be defined in the law and in proper amounts to be determined by the commission.

I do not think the section in the act relating to this subject will prevent the issuing of watered stock. As the law now stands, a corporation may apply to the commission for a certificate of valuation before it issues any securities, or it may issue the securities first and notify the commission afterwards. It is urged in support of the latter provision that it is based on the recommendation of the Railroad Se-

curities Commission to Congress for the regulation of the issues of stocks and securities by interstate railroads. It must be remembered that the federal government has not the power in the first instance to control the security issues of corporations having state charters, and that the plan recommended to Congress is based on the only feasible method of regulation which the federal government can enforce. It is doubtful whether this method will be effective in this state for the reason that it leaves the determination of the purpose and amount of such issues to the corporations themselves. Under the constitution of Pennsylvania, corporations may issue stock for property or services. Now, the value of the property and services is a question of opinion, and opinions frequently differ widely. If the discretion is left to the corporation to decide the amount of stock to be issued in return for property or services, it will be possible to issue fictitious securities as easily in the future as in the past, and the prohibition in the act against the capitalization of franchises, leases and contracts of merger, will not prevent such practices, although this provision in the law, if it is sustained by the courts, will destroy the most fruitful source of watered stock in the past. I do not see, either, how the act will prevent the capitalizing of deficits and other improper practices. The New York law of 1907 limited the purposes for which securities could be issued to those which were proper charges to capital account and this should have been done also in Pennsylvania. It is not much use to prohibit the capitalizing of franchises if the corporation is permitted to issue stock or bonds to replace losses occasioned by extravagance, fraud or inefficiency.

In one other respect the act does not deal adequately with the question of securities issues. The commission is given power to investigate issues made after the date when the act becomes effective, and to institute proceedings for striking down fraudulent issues of such securities. It seems to me this power is too limited. I do not understand why fraud should have been privileged any more before January 1, 1914, than after that date. Aside from any question as to whether the commission should have the power to move to strike down fraudulent issues, there can be no doubt of the propriety of giving them ample power to investigate all issues. The act of Congress of 1913, under which the railroads of the country are being valued, granted the fullest power to the Interstate Commerce Commission in this respect, and it is necessary that any body charged with

investigating the history of a particular corporation should have the fullest power to inquire into its financial transactions.

A subject closely allied with the one just discussed is the acquisition of interests in public service corporations by other corporations. The act provides that no public service company may acquire a controlling interest in another such company or in its securities without the consent of the commission. It is well known that corporations are frequently controlled by minority interests. Even if this were not the case, the provision can be so easily evaded by dividing the control between two or more companies that it is hardly worth while to insert it in the act. It will be noticed also that no limitation is expressed upon the right of corporations other than public service companies to acquire such interest. The holding company as a rule is organized simply for the purpose of owning securities and is not affected by this provision. No control can be exercised in this matter without subjecting holding companies to the jurisdiction of the commission in this respect, as has been done in New York.

This discussion has up to this point dealt with the matters usually considered of most importance in public utilities legislation—franchises, valuations and capitalizations. I do not mean to overlook rates, as the rate question is without doubt the most important question. Some criticism is made of the law because it failed to provide that rates should be based on a fair return on the fair value of the corporate property used in rendering the service, in accordance with the principle of *Smythe vs. Ames*. There can be no doubt that this is the correct principle, but to place a declaration to this effect in the act would not make it any more binding on the courts, which must, in the end, pass upon all rate questions. I believe that the act has left the matter of rates just where it ought to be, and therefore do not feel it necessary to discuss this matter in this article. There are, however, a number of respects in which the law is technically defective, and these defects may cause more dissatisfaction in the practical workings of the law than those heretofore pointed out. These defects are principally cases where the commission is not granted any power, or sufficient power, to deal with a subject, and there can consequently be no corrective force of public opinion which may be depended upon to some extent to check evils resulting from the more important defects of the law, because in these cases the commission will have a rather wide discretion.

Article II of the act dealing with the duties and liabilities of public service companies omits several important provisions that were in the bill when it passed the house. By the provisions of clause c of section 1 of this article, public service companies are required to construct such extensions of their facilities as may be required to give adequate service. This does not include cases where the grant of a franchise is necessary before the extension can be constructed—for example, a street railway. The question of street railway extensions is one of the most difficult with which our cities have to deal. Public opinion today will not sanction the grant of street railway franchises upon the liberal terms in vogue twenty years ago, but the companies demand practically such terms before they will accept franchises for extensions. The result is a deadlock between the municipality and the company. Some parts of the community are left without transportation facilities and in other parts such facilities as are provided are inadequate. This is a condition which the municipality should have power to remedy without being obliged to grant franchises upon impossible conditions. If the city is willing to grant a franchise for an extension, the Public Service Commission should have the power to say whether or not the extension is reasonably necessary and whether the terms of the franchise are reasonable. If the commission should determine this to be the case then the street railway company should be required to build and operate the extension. The commission has the power to require gas and water companies to extend their mains. There is no good reason why street railway companies should not now be subjected to the same requirement. In practically every case the street railways of every urban district are operated as a unit and no opportunity exists for operating extensions independently. The law should take cognizance of this fact and require companies controlling the street railways of their respective districts to build the necessary extensions to their systems.

Another provision of the bill when it was originally introduced dealt with a subject similar to the one which has just been discussed; that is, the duty of one public service company to permit another company to use its facilities. This clause was stricken out entirely by the senate. If two public service companies are furnishing service to adjoining neighborhoods, it is desirable in many instances, if not necessary to the public convenience, that there should be an interchange of service between the two companies. It is true that the

supreme court of Pennsylvania in the case of Philadelphia, Morton and Swarthmore Street Railway Company's petition, 203, Pa., page 354 (1902), held the provision in the street railway acts of 1889 and 1895, giving one street railway company the right to use 2,500 feet of the tracks of another street railway company, to be unconstitutional. This decision was based, however, upon the view of the court that the legislature had no power to impose a servitude on the private property of one corporation for the benefit of another. If the Public Service Commission had been given the power to determine whether the proposed use was beneficial to the public interest, and could be exercised without substantial injustice to existing rights, and also the power of fixing the compensation to be paid for such use, it is probable that such a power would now be sustained by the courts.

The act does not deal satisfactorily with the subject of changes in tariffs and schedules. It leaves the right to initiate changes in tariffs and schedules with the public service companies but provides that no rate, practice or classification which shall have been determined by the commission shall be changed by the company within three years after such determination without the commission's consent. There is no objection to allowing the companies the right to make rates and tariffs, if this right be accompanied with the power on the part of the commission to suspend such rates or tariffs, pending an investigation, in which the burden of proof shall be upon the company to justify the change, as is now the case under the interstate commerce act.

In this connection it should be noted that the procedure before the commission is in accordance with the ordinary rule of law that the burden of proof is upon the complainant, except in cases where the complaint alleges an infraction of an order of the commission, in which cases the burden of proof is upon the parties complained against to establish the fact that they have complied with the order. The commission should have been given a wide discretion in matters of procedure, so that it might in any case require the public service company to assume the burden of proof. In contests between private individuals or municipalities and public service companies, the companies have a great advantage since the facts are almost entirely within their possession. In such cases, if the commission thinks it advisable, for the purpose of doing justice to all the parties to require the parties complained against to assume the burden of proof,

it should not only have the right to do this, but should also have the right to compel the defendant to submit inventories or other data pertinent to the issue before the case is tried.

The commission has not been given the power to deal with matters held to be optional with the public service companies, such as the granting of transit privileges by railroads on through shipments of freight and the carrying of express matter by street railways. In at least one of the large cities of the state the street railway company carries some newspapers and refuses to carry others and the court has held that with respect to this right the street railway is not a common carrier and has refused to prevent discrimination in its exercise. The result of course is the silencing of all adverse criticism by the papers enjoying the privilege.

A discussion of the defects of the law is hardly complete without some reference to the form of the measure, which is objectionable in several respects. There are too many definitions and they are not sufficiently concise. It does not add anything to the act to say that the term "common carriers" means "all common carriers, whether corporations or persons, engaged for profit in the conveyance of passengers or property, or both, between points within this commonwealth by, through, over, above, or under land or water or both." This appears to be simply saying that the term "common carrier" means "common carrier." Nor have I ever been able to understand why it was necessary to use nineteen lines in the attempt to define "facilities," only to conclude with the words "any and all other means and instrumentalities in any manner owned, operated, leased, licensed, used, controlled, furnished, or supplied for, by, or in connection with, the business of any public service company."

Section 12 of article III is another example of the invitation to litigation contained in the prolixity of the author's language and the drawing in of irrelevant matters. The first clause of this section provides that every public service company shall be entitled to the full enjoyment and exercise of all and every of the rights, powers and privileges which it lawfully possesses or might possess at the time of the passage of this act except as herein otherwise expressly provided. The second clause of the section provides that the duties, etc., of public service companies shall be subject to certain constitutional provisions. The construction of the act is a question for the courts, so that it would not seem wise to say in the act itself what effect it

shall have, and as every act of the legislature is subject to the constitution there can be nothing gained by inserting an expression to this effect.

This concludes the discussion of what seem to me to be the most important defects in the measure. Some objection has been made to provisions which give the commission discretion in dealing with certain matters—for example, depreciation. This is hardly a fair criticism. It must be assumed that the commission will administer the act honestly.

It should be said in conclusion that the act was the result of a compromise, as all important legislation usually is, and that in its present form it is a great improvement over the measure originally introduced. It is to be hoped that it will be still further improved by the next legislature so as to bring it into harmony with the best modern thought on public utility regulation as expressed in the statutes of other states—notably New York, New Jersey and Wisconsin.

METHODS OF JUDICIAL REVIEW IN RELATION TO THE EFFECTIVENESS OF COMMISSION CONTROL

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The effectiveness of the control of municipal public utilities by state commissions is determined by the thoroughness of their findings, the justice of their rulings and the extent to which the proceedings and orders of the commissions are sustained by the courts or made final and conclusive by statutory enactments. While the strength of commission findings and the validity of the orders issued thereon depend upon the scope and accuracy of their investigations and the integrity of their rulings, the force and effect of commission control depend ultimately upon the authority conferred on the commissions by the legislatures in the first instance and the extent to which action by commissions is made conclusive of the controversy. The right of review or appeal to the courts from the proceedings of commissions limits and defines the sphere of their efficiency and determines the extent to which the courts may supplant, modify or set aside the action of commissions; thereby making their findings and orders conditional and qualified, and not absolute and final.

After an investigation of the facts on due notice, usually of not less than ten days, and a public hearing, the proceedings of the commission have been concluded and disposed of with an order or regulation, an interested party may generally apply to the commission for a rehearing because of additional evidence, changed conditions or errors and omissions in its original proceedings. The time within which a petition for rehearing may be filed is limited by statute in Ohio to thirty days,¹ and in Pennsylvania to fifteen days;² while in Illinois only one rehearing may be granted, which, however, does not prevent any party after two years from again applying to the commission upon a new and different state of facts,³ and in

¹ *Laws 1911*, p. 549, sec. 45.

² *Laws 1913*, no. 854, art. VI, sec. 14.

³ *Laws 1913*, p. 459, sec. 67.

Washington any public service corporation, being affected and aggrieved by any order of the commission, may after two years file a petition for rehearing, and in cases where the order has not been reviewed by the court but complied with by the company, the petition may be filed within six months.⁴ An application for rehearing, which must specifically set forth the reasons therefor and be filed within a month, if not before the order takes effect, is frequently made a condition precedent to judicial review as in New Hampshire,⁵ Missouri,⁶ Ohio⁷ and California.⁸

The commission may exercise its own discretion in granting a rehearing or dismissing the petition, and on a rehearing may in its discretion sustain, modify, or revoke its original action. The time within which a petition for rehearing shall be determined by the commission is fixed by statute in some states, being limited to thirty days after the same is finally submitted in Idaho,⁹ Missouri,¹⁰ and New York.¹¹ And it is sometimes expressly provided that no legal proceeding to contest any order or regulation of the commission can be taken until it acts upon an application for a hearing as in Illinois¹² and Nebraska.¹³

While the commission has authority to make summary investigations they are generally supplemented later by formal hearings on due notice, if in the opinion of the commission sufficient ground exists to justify a further hearing, in which case it may be granted on motion of the commission itself or upon application by an interested party, as provided by statute in Indiana,¹⁴ Oregon,¹⁵ Maine,¹⁶ Wisconsin¹⁷ and in the District of Columbia.¹⁸

⁴ *Laws 1911*, c. 117, sec. 89, as amended 1913, c. 145.

⁵ *Laws 1913*, c. 145, sec. 18.

⁶ *Laws 1913*, p. 556, sec. 110.

⁷ *Laws 1911*, p. 549, sec. 32.

⁸ *Stats. 1911*, 1st ex. sess., c. 14, sec. 66.

⁹ *Laws 1913*, c. 61, sec. 62.

¹⁰ *Laws 1913*, p. 556, sec. 110.

¹¹ *Laws 1910*, c. 480, pub. ser. com. law sec. 22.

¹² *Laws 1913*, p. 459, sec. 68.

¹³ *Stats. 1911*, sec. 10655.

¹⁴ *Acts 1913*, c. 76, sec. 62.

¹⁵ *Laws 1911*, c. 279, sec. 10.

¹⁶ *Laws 1913*, c. 129, sec. 46, pending on referendum.

¹⁷ *Stats. 1911*, sec. 1797 M-7.

¹⁸ Appropriation act, March 4, 1913, sec. 9, par. 45.

Ample provision is made for a full and thorough investigation of all material facts after notice to interested parties and a complete public hearing in connection with practically all proceedings of any commission, which serves as the basis of the findings and orders or regulations in the forty or more jurisdictions which now have commissions. The commissions are created for the sole and express purpose of making such investigations and issuing the proper orders thereon. The members of the commissions are selected and trained especially for this service to which they devote their exclusive time and attention. They are peculiarly fitted for such work and their findings and orders are very properly and necessarily presumed to be reasonable, lawful and correct. The burden of proof is placed on the party attacking their action and unless the weight of evidence is clearly against the findings of the commission they will be sustained and their orders enforced on appeal to the courts, unless they are clearly illegal.

By statute in California the findings and conclusions of the commission on question of fact are properly made final and not subject to judicial review; and it is provided that questions of fact shall include ultimate facts and the findings and conclusions of the commission on reasonableness and discrimination.¹⁹ In Colorado it is provided that the findings and conclusions of the commission on disputed questions of fact shall be final and shall not be subject to review by the courts.²⁰ The statutory provisions of Idaho make the findings and conclusions of the commission on questions of fact *prima facie* just, reasonable and correct; such questions of fact to include ultimate facts and the findings and conclusions of the commission on reasonableness and discrimination.²¹ In Illinois the statute provides that the findings and conclusions of the commission on questions of fact shall be *prima facie* true, and their rules, regulations, orders or decisions *prima facie* reasonable; thereby shifting the burden of proof on all issues, as is done in practically all other states, upon the party appealing therefrom.²² The New Hampshire statute provides that all findings of the commission upon all questions of fact properly brought before it shall be *prima facie* lawful and rea-

¹⁹ *Stats. 1911*, 1st ex. sess., c. 14, sec. 67.

²⁰ *Laws 1913*, c. 127, sec. 52.

²¹ *Laws 1913*, c. 61, sec. 63.

²² *Laws 1913*, p. 459, sec. 68.

sonable.²³ And in Pennsylvania the orders of the commission are made *prima facie* evidence of their reasonableness.²⁴

Within a limited time, usually thirty days, after the final action of the commission, appeal therefrom lies to the county or district court where the matter in question arose, to such courts having jurisdiction where the commission sits or to the supreme or the court of last resort in the state. Appeals may be taken only within thirty days and directly to the supreme court in the state of California, where on review the court may only determine whether the commission has regularly pursued its authority and whether the order or decision being reviewed violates any constitutional right of the petitioner; and the judgment of the supreme court must either affirm or set aside the order or decision of the commission.²⁵ In Colorado the right of appeal is likewise limited to the supreme court which has authority in addition to that granted the California court to determine whether the order of the commission is just and reasonable and whether its conclusions are in accordance with the evidence, and the court may affirm, set aside or modify the order or decision of the commission.²⁶ Similar provisions for review on *certiorari* by the supreme court are made by the statutes of Idaho where, however, the judgment of the court must either affirm or set aside the action of the commissions.²⁷ In Maine the right of appeal is expressly limited to a decision by the supreme court on questions of law, submitted on an agreed statement of facts or on facts found by the commission which together with copies of the arguments of counsel must be filed with the court.²⁸ The supreme judicial court of Massachusetts is given jurisdiction in equity to review, annul, modify or amend rulings and orders of the commission in so far as they are unlawful.²⁹

Any party affected and dissatisfied with the action of the commission in Nebraska may resort to the supreme court which may reverse, vacate, or modify such action.³⁰ In New Hampshire provi-

²³ *Laws 1913*, c. 145, sec. 18.

²⁴ *Laws 1913*, no. 854, art. VI, sec. 23.

²⁵ *Stats. 1911*, 1st ex. sess., c. 14, sec. 67.

²⁶ *Laws 1913*, c. 127, sec. 52.

²⁷ *Laws 1913*, c. 61, sec. 63.

²⁸ *Laws 1913*, c. 129, sec. 53, pending on referendum.

²⁹ *Acts 1913*, c. 784, sec. 27.

³⁰ *Stats. 1911*, sec. 10655.

sion is made for appeal direct to the supreme court which shall not set aside the order or decision of the commission except for errors of law unless the court is clearly satisfied under the evidence that the order is unjust and unreasonable, when in its judgment the court must dismiss the appeal or vacate the order in whole or in part, in which case the matter may be remanded to the commission for such further proceedings not inconsistent with the judgment, as in the opinion of the commission justice may require.³¹ Review of the proceedings of the commission by the supreme court alone is also provided for in New Jersey,³² New Mexico,³³ Ohio,³⁴ Oklahoma,³⁵ Rhode Island,³⁶ Vermont,³⁷ Virginia,³⁸ and in West Virginia.³⁹

Within fifteen days after final action by the Connecticut commission, which it may extend to thirty days, an appeal lies to the superior court of the county in which the matter arose, or if the question is not local, to the court of Hartford County, the seat of the commission. The decision of this local court is made conclusive, subject to review by the supreme court of errors on questions of law.⁴⁰ In Georgia the court of Fulton County, the domicile of the commission, is given exclusive jurisdiction of appeals, except that the supreme court may be resorted to in enforcing penalties⁴¹ as also in Alabama⁴² and Arizona where the judgment of the local court is final unless notice of appeal therefrom is given at the time judgment is entered.⁴³ Within thirty days after action by the commission and a hearing or petition therefor under the statutes of Illinois appeal lies to the circuit court of Sangamon County, the seat of the commission, and from its decision to the supreme court within sixty days.⁴⁴ Similar

³¹ *Laws 1913*, c. 145, sec. 18, adding sec. 22 to 1911, c. 164.

³² *Laws 1911*, c. 195, sec. 38.

³³ Const., art. XI, sec. 7.

³⁴ *Laws 1911*, p. 549, sec. 33.

³⁵ Const., art. 9, sec. 20.

³⁶ *Laws 1912*, c. 795, sec. 34.

³⁷ *Laws 1908*, c. 116, sec. 12.

³⁸ Const., sec. 156.

³⁹ *Acts 1913*, c. 9, sec. 16.

⁴⁰ *Pub. acts 1911*, c. 128, as amended 1913, c. 225.

⁴¹ *Code 1910*, secs. 2625, 2668.

⁴² *Acts 1907*, sp. sess. no. 17, sec. 15.

⁴³ *Laws 1912*, c. 90, sec. 67.

⁴⁴ *Laws 1913*, p. 459, secs. 68, 69.

provisions for appeal to the court of the county in which the commission sits and thence to the supreme court of the state are made in Louisiana,⁴⁵ Pennsylvania,⁴⁶ Tennessee⁴⁷ and Wisconsin.⁴⁸

In Indiana the appeal lies within sixty days to the court of any county in which the order is operative and thence within sixty days to the supreme court. A transcript of the evidence and of all the proceedings of the commission, as in most states, constitutes the record on appeal and the commission is required to file a certified copy of such transcript with the clerk of the court before the trial. The answer of the commission to the complaint or petition on appeal must be filed ten days after it is served with notice of the appeal, and all such actions are given precedence over other civil cases. If evidence is introduced in the trial on appeal which the court finds to be different from that considered by the commission or additional thereto, unless by agreement the parties stipulate to the contrary, the court must transmit a copy of such evidence to the commission and stay court proceedings for fifteen days. After considering such evidence the commission may sustain, modify or revoke its order and must report its action thereon to the court in ten days. The judgment of the court is then rendered on the case as modified, if any, by the commission.⁴⁹ Similar provisions as to additional or different evidence being transmitted to the commission, pending the consideration of which the court stays its proceedings, is made by statute in the District of Columbia,⁵⁰ Maryland,⁵¹ Michigan,⁵² Montana,⁵³ Nevada,⁵⁴ New Hampshire,⁵⁵ Oregon⁵⁶ and Wisconsin.⁵⁷

Where new or different evidence is discovered in Pennsylvania the case may be remanded to the commission.⁵⁸ In this state, also,

⁴⁵ Const., art. 285.

⁴⁶ *Laws 1913*, no. 854, art. VI, sec. 17.

⁴⁷ *Acts 1913*, c. 32, sec. 13.

⁴⁸ *Stats. 1911*, sec. 1797 M-64.

⁴⁹ *Acts 1913*, c. 76, secs. 69-83.

⁵⁰ Appropriation act, March 4, 1913, sec. 8.

⁵¹ *Ann. code 1911*, art. 23, sec. 458.

⁵² *Pub. acts 1913*, no. 206, sec. 16.

⁵³ *Laws 1913*, c. 52, sec. 26.

⁵⁴ *Rev. laws 1912*, sec. 4564.

⁵⁵ *Laws 1913*, c. 145, sec. 18, adding section 22 to 1911, c. 164.

⁵⁶ *Laws 1911*, c. 279, sec. 56.

⁵⁷ *Stats. 1911*, c. 9, sec. 1797 M-67.

⁵⁸ *Laws 1913*, no. 854, art. VI, sec. 25.

it is interesting to note, the party taking the appeal must make affidavit that it is not taken for the purpose of delay but in the belief that injustice has been done. In Illinois, if the commission refuses to receive proper evidence, the court must remand the case to the commission with instructions to receive the same and enter a new order based upon all the evidence.⁵⁹ In Massachusetts a petition for appeal must be accompanied by a certificate of opinion that the case is a proper one for judicial inquiry and that the appeal is not intended for delay, and in the event the court finds to the contrary it shall assess double costs upon such appellant.⁶⁰

The effectiveness of the orders of the commission and the extent of its control are largely determined by the conclusiveness of its findings and the validity of its orders pending appeals taken therefrom. For the same reasons and practically to the same extent that as a matter of evidence on appeal presumptions are indulged in favor of the action of the commission, their orders are generally not suspended while an appeal for judicial review is pending except on motion of the commission or by the court after notice and the giving of sufficient bond. For the commission to be most efficient and of the greatest practical value many of its orders and regulations issued after due investigation must become and remain effective with the final disposition of the commission. The necessary delay attending reviews by the courts and their lack of time and opportunity for investigating situations at first hand and as a current operating concern constitute at once the occasion and the chief reason for commission control. Suspending their orders pending appeals and while the same are being reviewed by the different courts interferes materially with the effectiveness of the commission, detracts from the validity of its action and often postpones indefinitely the enjoyment of the results of its investigations and findings.

By constitutional provision as well as statutory enactment in Arizona the rules, regulations, orders and decrees of the commission remain in force pending the decision of the courts.⁶¹ In Florida it is expressly provided by statute that all orders, judgments or decrees of inferior courts in favor of the commission shall remain effective

⁵⁹ *Laws 1913*, p. 459, sec. 68.

⁶⁰ *Acts 1913*, c. 784, sec. 27.

⁶¹ Const., art. XV, sec. 17; *Laws 1912*, c. 90, secs. 66-68.

until finally disposed of by the appellate court.⁶² The constitution of Louisiana provides also that orders of the commission shall remain in force until set aside by the final judgment of a court of competent jurisdiction.⁶³ In Montana all rates fixed by the commission remain in full force and effect until final determination by the courts having jurisdiction,⁶⁴ and similar provision is made by statute in Nevada⁶⁵ and North Dakota.⁶⁶ When a rate which has been effective for a year or more is advanced, the order of the commission, reinstating the former rate in whole or in part, may not be suspended pending the final determination of the matter by the courts according to the provisions of the statutes in Illinois⁶⁷ and in Washington.⁶⁸

In Connecticut, however, appeals supersede the order or decision appealed from as a rule, although the court may order to the contrary if the appeal is for purposes of delay, or if justice, public safety or expediency may require;⁶⁹ and this same provision is made by statute in Rhode Island;⁷⁰ while in Tennessee the rate, rule, order or regulation is suspended only in case legal proceedings are instituted within ten days, and then only upon injunction issued after notice and subject to large penalties if procured in bad faith.⁷¹

As a general rule in most jurisdictions having commissions their orders and regulations may be enjoined by the courts after a hearing and notice upon good cause shown and the giving of sufficient bond to cover costs and damages resulting in case the action for injunction was not well founded and the order is finally sustained; but the fact that a writ of appeal or review is pending does not suspend the order or regulation. In addition to the ordinary cost bond which is generally required as a condition of granting an injunction and suspending the order of the commission, the statutes in a number of jurisdictions having commissions, provide for the giving of a *super-*

⁶² *Gen. stats. 1906*, sec. 2923.

⁶³ *Const. art. 286*, as amended 1908.

⁶⁴ *Laws 1913*, c. 52, sec. 26.

⁶⁵ *Rev. laws 1912*, sec. 4546.

⁶⁶ *Rev. codes 1905*, sec. 4351.

⁶⁷ *Laws 1913*, p. 459, sec. 71.

⁶⁸ *Laws 1911*, c. 117, sec. 82.

⁶⁹ *Pub. acts 1911*, c. 128, sec. 33.

⁷⁰ *Laws 1912*, c. 795, sec. 35.

⁷¹ *Acts 1913*, c. 32, sec. 13.

sedeas or suspending bond conditioned and sufficient in amount to insure the prompt and complete refunding to all parties entitled thereto of all charges or rates for service paid in excess of the rate fixed by the commission and sustained by the courts on review. Verified accounts showing the amount of such excess rates and from whom received and to whom payable are often required of all parties as a condition for the suspension of any order or rate regulation of the commission, as is expressly provided in California,⁷² Colorado,⁷³ Idaho,⁷⁴ Illinois,⁷⁵ Missouri,⁷⁶ Nebraska,⁷⁷ Ohio,⁷⁸ Oklahoma,⁷⁹ Oregon,⁸⁰ Pennsylvania,⁸¹ South Dakota⁸² and Washington.⁸³ In North Carolina the additional amount collected because of the excess rate being in effect must be paid to the state every three months.⁸⁴ In New Hampshire the conditions for securing the repayment of the amounts received under the excessive rates to the parties originally paying the same are fixed by the court, and a failure to make such repayments promptly as provided by the court is punishable as a contempt of court.⁸⁵

The effectiveness of the control of municipal public utilities by state commissions is largely determined by the attitude of the courts in their construction of the public utility acts and in their review of commission findings and orders on appeal. That public utility commissions are practical business necessities and entirely consistent with constitutional rights has been fully recognized by all the courts which have been called upon to construe these statutory enactments, and their decisions freely admit that such state commissions are necessary administrative agencies and furnish the most satisfactory

⁷² *Stats. 1911*, 1st ex. sess., c. 14, sec. 68.

⁷³ *Laws 1913*, c. 127, sec. 51.

⁷⁴ *Laws 1913*, c. 61, secs. 63-64.

⁷⁵ *Laws 1913*, p. 459, sec. 71.

⁷⁶ *Laws 1913*, p. 556, sec. 112.

⁷⁷ *Stats. 1911*, sec. 10655.

⁷⁸ *Laws 1913*, p. 804, secs. 37-41.

⁷⁹ *Const.*, art. 9, sec. 21; *Laws 1913*, c. 10, sec. 3.

⁸⁰ *Laws 1911*, c. 279, sec. 55.

⁸¹ *Laws 1913*, no. 854, art. VI, sec. 19.

⁸² *Laws 1913*, c. 312, sec. 5.

⁸³ *Laws 1911*, c. 117, sec. 87.

⁸⁴ *Rev. 1905*, sec. 1082.

⁸⁵ *Laws 1913*, c. 145, sec. 18; adding sec. 22 to 1911, c. 164.

solution of the many intricate and comprehensive business questions that are constantly arising in increasing numbers in connection with the regulation and control of public utilities which everyone now regards as natural monopolies and every-day business necessities.

The federal court in the case of *Des Moines Gas Company vs. Des Moines*⁸⁶ frankly recognized the necessity and practical advantage of this method of regulation and control by conceding that:

Much of this kind of litigation, and practically all of the expense, would be avoided if Iowa, like so many of the other, including some neighboring, states, had an impartial and city non-resident commission or tribunal, with power to fix these rates at a public hearing, all interested parties present, with the tribunal selecting its own engineers, auditors and accountants.

The court of New York concurring with those of many other jurisdictions expressed unqualified approval of the plan of commission control in the case of *Saratoga Springs vs. Saratoga Gas, etc., Company*⁸⁷ in saying:

That the most appropriate method (speaking from a practical, not necessarily constitutional, point of view) is the creation of a commission or body of experts to determine the particular rates, has been said several times in the opinions rendered by the supreme court of the United States in the various railroad commission cases and in those of state courts.

And in the recent case of *People ex rel. New York Edison Company vs. Willcox*⁸⁸ this same court said:

That law (i.e. public service commissions law) was enacted in response to a pronounced and insistent public opinion, and was a radical and important modification of the relations and policy of the people toward the corporations, which are its subjects. Its paramount purpose was to protect and enforce the rights of the public. It made the commission the guardians of the public by enabling them to prevent the issue of stock and bonds for other than statutory purposes, or in appreciable and unfair excess of the value of the assets securing them, and to prevent also unneeded or extortionate competition, or indifferent and unaccommodating methods of operation, or oppressive or discriminating charges or rates. It provides for a regulation and control which were intended to prevent, on the one hand, the evils of an unrestricted right of competition, and, on the other hand, the abuses of monopoly.

⁸⁶ 199 Fed. 204.

⁸⁷ 190 N. Y. 562; 83 N. E. 693; 18 L. R. A. (N. S.) 713.

⁸⁸ 207 N. Y. 86; 100 N. E. 705.

The supreme court of Wisconsin has also fully sustained and very frankly approved the plan of commission control in the case of *Calumet Service Company vs. Chilton*,⁸⁹ where the court says:

Control by the trained impartial state commission, so as to effect the one supreme purpose, i.e., the best service practicable at reasonable cost to consumers in all cases and as near a uniform rate for service as varying circumstances and conditions would permit [is] a condition as near the ideal probably as could be attained.

This uniformly favorable attitude of our courts towards the principle of commission control is pertinent and deserves consideration in connection with their holding that the right of appeal and judicial review is statutory and therefore subject to the will of the legislature within the constitutional limitations of due process and equal protection of the law with respect to the preservation of property and contract rights. The nature and extent of the right to appeal from the commission's action, together with the reason for the rule, are well expressed in the case of *Minneapolis, etc., Company vs. Railroad Commissioners*⁹⁰ where the court said:

Being purely the creature of statute, the right of appeal from the decision of the commission to the district court, if it exists, must be found in express provisions of the act. . . . But it is not to be presumed that the legislature intended to turn the courts into appellate railroad commissions, which should retry the facts, and pass upon matters of a purely administrative nature, relating to the maintenance and operation of railways, and involving merely questions of policy affecting the security or convenience of the public. Indeed, if the act assumed to confer upon the courts jurisdiction over matters so entirely foreign to the judicial function, it would be of doubtful validity to say the least of it.

There being no inherent right of appeal, the nature and extent of the power and authority of such commissions to issue orders, from which there is actually no such right, are concisely stated in the case of *Interstate Commerce Commission vs. Union Pacific Railway Company*⁹¹ as follows:

The orders of the commission are final unless (1) beyond the power which it could constitutionally exercise, or (2) beyond its statutory power, or (3)

⁸⁹ 148 Wis. 334; 135 N. W. 131.

⁹⁰ 44 Minn. 336; 46 N. W. 559.

⁹¹ 222 U. S. 541.

based upon a mistake of law. But questions of fact may be involved in the determination of questions of law, so that an order, regular on its face, may be set aside if it appears that (4) the rate is so low as to be confiscatory and in violation of the constitutional prohibition against taking property without due process of law, or (5) if the commission acted so arbitrarily and unjustly as to fix rates contrary to evidence, or without evidence to support it, or (6) if the authority therein involved has been exercised in such an unreasonable manner as to cause it to be within the elementary rule that the substance, and not the shadow, determines the validity of the exercise of the power.

"The findings of the commission are made by law *prima facie* true and this court has ascribed to them the strength due to the judgments of a tribunal appointed by law and informed by experience. Its conclusion of course is subject to review, but, when supported by evidence, is accepted as final."

LOWER TELEPHONE RATES FOR NEW YORK CITY

By E. H. OUTERBRIDGE,

Chairman of the Committee on Public Utilities of the Merchants
Association of New York.

In 1905 complaints were made to the Merchants Association by numbers of its members alleging that telephone charges were excessive. The association thereupon appointed a special committee to investigate the subject.

This committee gathered a large amount of data including the service rates for telephones in the principal cities of the United States. A great diversity was found to exist in these rates, as well as in the principles upon which they were based. The committee reached the conclusion that a comparison of rates without knowledge of the costs of operation and of the particular circumstances relating to the various localities would afford no sound basis for testing the equity of the rates in this city. The committee therefore entered upon negotiations directly with the telephone company, with the result that the company consented to give the committee's accountants access to its books and records for the purpose of learning the relation of the company's net earnings to the costs of operation and to the value of its property. The committee further stated that in its opinion the net earnings of the company (including dividends, provision for depreciation and reserve for contingencies) should be limited to 10 per cent upon the value of the property, and the company accepted this as a basis for a revision of its rates.

The committee's accountants made an examination of the company's books covering their operations during a period of sixteen years and found that the net earnings during that time had averaged between 11 and 12 per cent, but that during the year previous to that in which the examination was made the net earnings had been approximately 15 per cent. The company thereupon, acting in concert with the association's committee, prepared a new schedule of rates, adjusted, as near as practicable, to reduce their earnings to the stipulated 10 per cent. The aggregate amount of the reductions for the year 1906 was about \$1,525,000.

Although all the members of the committee were very large users of the telephone company's service at the lowest rate then prevailing, it was the opinion of the committee that the reductions then made should mainly apply for the benefit of small users, and the maximum rate was therefore reduced from 10 cents per message to 8 cents per message in the case of measured service, with a corresponding reduction in those local areas where flat rate service prevailed. It was the view of the committee that as low a rate as possible should be made for small users in order to stimulate the use of the telephone by the class who would otherwise be debarred by its cost. Beginning with the maximum stated the successive rates at the higher part of the scale were likewise graduated downward, but no reduction was made in the message rate charged the larger users, although a concession in the annual charges for extra equipment was allowed.

The rates as revised in 1906 were received with very general public approbation, as was also the method of reaching an agreement by negotiation rather than by hostile legal proceedings.

In 1907 the public service commission's law was passed, whereby railroads, gas and electric companies were subjected to public regulation, but telephone companies were not included. Public sentiment in favor of subjecting telephone companies to regulation by the public service commission rapidly developed, and also manifested itself by the introduction in the legislature of successive bills for arbitrarily fixing the rates which the New York Telephone Company might charge. The maximum rate usually specified in these bills was 5 cents per message. Although these measures received considerable support none of them became law, but they had the effect of crystallizing the demand for public regulation of the telephone company's charges and in 1910 the public service commission's act was amended to include the regulation of telephone companies.

For a year or two after the telephone company was subjected to the public service commission's act no proceedings of importance were brought against it, although public dissatisfaction with its system of toll charges was steadily growing. Owing to the large area covered by the city of New York and the adjacent districts, as well as to the topography and distribution of the population, the zone system had been put in operation by the company. Under this system subscribers were entitled to the use of telephone service at

the regular message rate only within the zone within which they were respectively located, and an additional toll charge was exacted for communication with other zones.

The demand for a 5 cent maximum rate of service, co-extensive with the city became frequent. The matter was first brought to the public service commission in the form of a complaint against the toll charges for communication between Manhattan and Brooklyn. The zone system and the exaction of an excess charge for a communication between the different zones were sustained by the public service commission as reasonable, but certain of the zones were enlarged and the amount of the charge between Manhattan and Brooklyn materially reduced.

Meanwhile bills regularly appeared in the legislature seeking to fix the maximum charge of 5 cents per message, abolishing the zone system, and making the service for a single charge co-extensive with the city. Such a bill in 1913 passed both houses of the legislature, but owing to a defect in its form was withdrawn when before the governor.

Immediately thereafter two proceedings against the telephone company were brought before the Public Service Commission, the first seriously to attack the company's schedule of rates. One of these bills proposed to reduce the maximum charge per message from 8 cents to 5 cents and to abolish the zone system. The other proposed to reduce greatly the annual charge for extension telephones. A great deal of publicity was given to these proceedings and numerous small civic associations were induced to give their approval to the movement.

The Merchants Association was requested, among others, also to lend its support. A careful study of the scope of the pending proceedings was thereupon made, and it was found that, although sweeping reductions were demanded, the scope of the proceeding was in reality so limited as to deal very inadequately and unjustly with the situation. The reduction proposed would have affected only the small users of the telephone service who would have received a very large concession in rates, while large users would have received no benefit whatever. The latter class of users pay a message rate of 3 cents in addition to which they pay rental charges for extra equipment. Taking into consideration these rental charges, it was found that a subscriber having a 3 cent rate and using 4800

messages would in reality pay $5\frac{1}{4}$ cents per message, while a subscriber using but 600 calls per year would pay but 5 cents. As a result of the change proposed by the complaint, therefore, the large user would actually pay at a higher rate than the small user.

The association's committee further found that there were substantial differences in the conditions, and presumably in the cost of supplying service to the various classes of users, and that these differences in conditions and costs warranted a graduated scale of rates determined with relation to the varying costs.

The committee was further convinced that no readjustment of any part of the company's scale of charges could be intelligently made until the company's property had been appraised, the extent of that property applied to the service of various classes of users determined, and the cost of supplying each class of service fully developed. Instead, therefore, of supporting the pending proceedings to which it found such serious objections, its committee took the matter up directly with the New York Telephone Company, with the purpose of establishing a basis for a more comprehensive proceeding, which should cause a complete revision of the company's scale of charges based upon the cost of supplying each class of service.

The committee deemed that the first step in such a proceeding would be a valuation of the company's property, both with reference to its aggregate and to the portions used by different classes of users. It was found that the Public Service Commission was without funds to undertake so large and extensive a task, and application was therefore made to the Interstate Commerce Commission, which body was about to begin, under an act of Congress, an appraisal of the property of all public carriers. It was found however, that the Interstate Commerce Commission could not at the time definitely state when it could undertake the proposed appraisal. The Public Service Commission of this state, moreover, was unwilling to assent to the proposal that the appraisal should be made by the Interstate Commerce Commission, and it was also unwilling to suspend the pending proceedings unless such an appraisal were provided for. In view of the fact that the legislature had made no appropriation for such expenses, and further, that hostile bills reducing the rate to 5 cents would certainly be pressed in the legislature, this association suggested to the New York Telephone Company that it voluntarily consent to an appraisal by the public service

commission, that it pay the expenses thereof, and that, pending a general revision of its rates, it should make an allowance of 10 per cent upon certain of its existing charges.

These suggestions were favorably received by the telephone company, were presented by them to the Public Service Commission and accepted by the latter. This result was brought about by the fixed determination of the association to see that any review and alteration of rates were based upon a proper scientific determination, and that all users might share, in proper proportion to the cost of their respective services, in any reduction of rates.

The effect of the association's attitude, therefore, was to supersede the pending proceedings to which the association objected, and to substitute therefor a broad and comprehensive proceeding which should determine rates upon a scientific basis with due regard to the rights of all classes of users, and with justice to the company itself.

The basis contended for by the association having been accepted by the Public Service Commission and the New York Telephone Company, the actual work of revision yet remains to be done. This will be undertaken by a staff of engineers and examiners selected by, and solely under the control of, the Public Service Commission, all of the expenses being paid by the telephone company.

An appraisal of the company's property will be made, the value of the property applying to the use of any particular class of patrons will be determined, and operating and overhead charges will likewise be ascertained and distributed pro rata to each class of users. By this procedure the costs of each class of service will be fully developed and rates can be made, on the basis of such costs, that will be fairly proportioned thereto.

Hitherto such a distribution of costs and charges has been impracticable, and it has necessarily followed that the commission has been unable to exercise its rate-making power with a knowledge of the facts essential to just determination. A revision of rates on the basis proposed will undoubtedly result in a scale of charges which will be entirely equitable and satisfactory to the public.

EFFECTS OF STATE REGULATION UPON THE MUNICIPAL OWNERSHIP MOVEMENT

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The policy of regulating public utilities by state commission may be said to have been inaugurated by Governor Hughes of New York and Senator La Follette of Wisconsin in 1907. Prior to that time there had been a good deal of agitation in the United States for municipal ownership and operation of street railways and other local utilities. The reports of successful municipal operation in Great Britain and Germany, coupled with intense dissatisfaction in many American cities with the results of private operation here, had made municipal ownership a nation-wide local issue. Mr. Hearst had come within a very few votes of being elected mayor of New York City on this issue, and Mr. Dunne had been elected mayor of Chicago on the definite platform of immediate municipal ownership and operation of street railways. The policy of regulation by state commissions, injected into American politics by the political prestige and constructive genius of Hughes and La Follette, and subsequently strengthened by the support of such strong progressive state executives as Woodrow Wilson in New Jersey and Hiram Johnson in California, has displayed more aggressive vitality than almost any other constructive political idea ever launched in state politics. In seven years' time this policy has swept across the country until now two-thirds of the states having large cities within their borders have established strong state commissions with regulatory powers.

The public control of public utilities is a problem of far-reaching and rapidly increasing importance, and that it will continue to be such a problem for an indefinite period in the future, cannot be questioned. The social, civic and political importance of the issue can hardly be over-estimated. Rapidly as cities are growing, and rapidly as their debts and expenditures are increasing, the activities and the investments of public utilities are increasing even more rapidly. Indeed, public utilities are coming to be what might be called the artificial natural environment of urban communities. They are, so to

speak, the second nature of cities. They supplement the sunshine and the air.

When the policy of state regulation was launched seven years ago, it received the cordial support of three classes of citizens: (1) those who were utterly opposed to municipal ownership, but who recognized either the necessity or the inevitableness of stringent public control; (2) those who were uncertain about municipal ownership and deemed it desirable to try the experiment of regulation, with the hope that it might succeed and thus make public ownership unnecessary; and (3) those who were definitely convinced that municipal ownership was desirable or necessary as an ultimate policy, but believed that regulation would be a good thing as a stop-gap while public opinion and public administration were getting ready for the inevitable. Influenced by these various hopes and expectations, the supporters of the new policy formed a somewhat motley political group. They included not all, but the major portion of, the progressive citizens of the country who desired to redeem the state and local governments from the domination of public service corporations.

At first the opposition to state regulation was made up primarily of three elements, viz., (1) the public service corporations, which were naturally hostile to a movement promising more minute and more rigid public control of their activities, and which, much as they disliked the interference of local governments and state legislatures, had by long practice learned how to meet these interferences and, therefore, preferred to keep on fighting in the old way rather than to face a new enemy and have to learn new tactics; (2) the corrupt and semi-corrupt political leaders and organizations which had acquired and maintained their power largely through their alliances with public service corporations under the old system of "give and take;" and (3) a comparatively small number of uncompromising municipal ownership men and municipal home rule advocates, together with a number of city politicians who had made political capital out of local feuds with the public service corporations. This third element of opposition manifested itself in spots where, through long local agitation, cities thought they were getting near the municipal ownership goal, or at least were getting into a position where they could, through franchise contracts and local regulation, secure better conditions as to rates and service, and where they feared that the sudden transfer of all powers of control to a state commission, subject

to the domination of state politics, would constitute a serious setback locally.

The sentiment of those who were definitely opposed to municipal ownership, and who welcomed regulation as a permanent solution of the problem of the control of public utilities, found remarkable expression only two years ago in the majority opinion of the supreme court of the state of Washington in the celebrated Seattle telephone case.¹ In this case the Washington court upheld an order of the state public service commission raising the rates of the independent telephone company in Seattle above the schedule fixed in the local franchise which had been granted by the city a few years before on the company's application and which had been subsequently accepted and used. In its enthusiasm for state commission regulation, the court said:

In its search for remedies and while seriously considering municipal, state or government ownership, the public, by reference to the police power of the state, has almost unwittingly—unwittingly in the sense that it is not generally appreciated—solved the problem, and has, by the application of fundamental as well as established relative propositions of law, gained every advantage of ownership without assuming its burdens. . . . The benefit of ownership is enjoyed, while its dangers—not the least of which are the political activities of great armies of public employes—are no longer a menace to those who, to avoid the hazards of public ownership, have unwillingly subscribed to the conditions prevailing before this and other states entered upon the policy of public control.

While the Washington commission and the Washington courts have gone further than most other commissions and courts in undermining the power of cities to control local utilities either by franchise contract or by ordinance, the aggressive sentiments just quoted give articulate expression to the general trend of commission and court opinion.

In the same case the Washington court forcibly defended the increase in the Seattle telephone rates, even though it involved the abrogation of the contract between the city and the company. "If we assume the right to lower rates to make the return conform to a fair interest rate upon a fair valuation," said the court,

it follows that we must, in conscience, yield the right to those affected to petition for a rate, though it be higher than a present one, that will accomplish

¹ State ex. rel. Webster vs. Superior Court of King County, 67 Wash. 37, decided January 27, 1912.

the purpose of the law. These principles have their foundations laid deep in the doctrine of common honesty between man and man, between the public and its servants. They are sustained upon the theory that the public is willing to pay a full return and no more, a fair return and no less, to those who have lent their capital for its benefit. . . . To hold that the public service commission is without jurisdiction to raise rates to the point of fairness, as it finds that point to be, would deprive the commission of the right to lower rates. To dissent from these views would be to hold that the state could not relieve the people of a municipality of an improvident contract, or one entered into in defiance of the will of the people, instances of which might be easily multiplied were we called upon to do so.

Largely as a result of the attitude assumed by the regulating authorities as set forth in the quotations just given, the line-up of forces on the political issue involved in state regulation of public utilities has considerably changed from what it was seven years ago. The public service corporations themselves, instead of being unanimously hostile to state regulation, as they were in 1907, have veered about until they appear to furnish the chief motive power behind the movement in those communities where state regulation has not yet been fully established. Doubtless the corporations have been and still are greatly annoyed by some of the positive or negative requirements of state commissions, and doubtless some corporations would gladly go back to the old system of haphazard regulation rather than submit to the systematic regulatory procedure now in vogue. Nevertheless, most corporations have come to see advantages in regulation itself and very great advantages in state as opposed to local regulation. By means of state regulation, they escape from the annoyance of local nagging and the immediate political pressure for lower rates, and appear to feel that they are stealing a march on the municipal ownership forces by a short cut across country. They expect to get so far out of sight of the municipal ownership movement that they hope never to see it again, or be seen by it.

On the other hand, it is fairly certain that the general public has been as unhappily disappointed in the general results of state regulation as the companies themselves have been happily disappointed. As in the case of the corporations, the extent and nature of this disappointment are not uniform either in time or place. Some commissions, as notably the Railroad Commission of California (which, however, does not have uniform jurisdiction over strictly local utilities), have borne down upon the corporations with a pretty firm

hand, and have thereby maintained their prestige with the people, while at the same time they have disarmed the opposition of the companies by the fairness of their severity. Generally speaking, however, the popular prestige of public service commissions is waning. The people are disappointed in the results obtained for the money spent, and a great many are coming to fear that the commissions as organs of government are primarily organs of the public utility interests to protect themselves from the mosquito-bites of rampant democracy. At the same time, there is a noticeable revival in the movement for municipal ownership and a strengthening of local resistance to the practical abrogation of municipal home rule as it relates to public utilities.

In order fairly to determine the underlying basis of fact or fancy for these changes in public sentiment and these shifting political alliances, we need to examine somewhat analytically the direct and indirect effects of state regulation upon municipal ownership as a business proposition.

Let us first consider the direct changes in the powers of cities to undertake municipal ownership, resulting from the enactment of public utility laws.

The Wisconsin law and the Wisconsin commission probably typify the state regulation movement as it exists in practice better than those of any other state. In certain respects, the Wisconsin law is still in advance of most of the other commission laws. This is particularly true with reference to the indeterminate franchise, which has been made to apply by legislative mandate to all of the public utilities operating in Wisconsin. This law, while not depriving the municipalities of the right to withhold their consent to the operation of public utilities in their midst, makes every franchise heretofore or hereafter granted a perpetual franchise subject to termination on one condition only, viz., that the municipality shall purchase the plant of the utility at a valuation to be fixed by the state commission. Under this law, the legal right of the municipalities to embark upon the policy of municipal ownership of local public utilities has been made universal, but the cities have been deprived of any right to build competing public utilities without the consent of the state commission or to acquire existing utilities by negotiations or under the terms of franchise contracts. For example, it would appear that no city in Wisconsin now has the authority to grant a franchise under

which the utility would be required to withdraw its capital out of earnings and transfer its property to the city at some future time without payment. No method of bringing about municipal ownership is contemplated except the single method of paying for the property a sum equal to its value as fixed at the time of its transfer by the state commission.

Under these conditions about a dozen public utilities have been acquired by municipalities in Wisconsin during the past seven years, but for the most part, these utilities are in small towns and represent a comparatively small investment. No street railways have as yet been taken over in Wisconsin under this law. It is too early to predict with certainty just what practical effect the Wisconsin indeterminate franchise plan will have upon the municipal ownership movement, but it is clear that it provides an inflexible procedure with no opportunity for adjustment to the varying conditions of different localities, and that a city cannot proceed to municipal ownership without submitting to the judgment of the state commission in fixing the price to be paid for the property, and the terms and conditions of the purchase, subject to appeal by either party to the courts. Moreover, without the consent of the state commission no city can build a plant of its own in competition with an existing private plant.

In California, where the right of municipal ownership and operation has been established by constitutional provision and where the control of local utilities remains for the most part in the hands of the local authorities, the state commission, nevertheless, has it within its power to hinder and possibly to prevent municipal ownership in particular cases by refusing its consent to the sale of a public utility to a city on the terms agreed upon between the parties.

In New York and New Jersey franchises granted by local authorities require the approval of the state commissions, and in New Jersey, when such franchises are approved, the state commission may impose its own conditions as to construction, equipment, maintenance or operation.

These illustrations show the tendency of the more radical state commission laws to check the freedom of the municipalities to advance toward municipal ownership in their own way. Some of the commission laws bring municipal undertakings under the control of the state commission practically to the same extent as private undertakings, and while such regulation is not necessarily inimical to municipal

ownership, it may, in some instances, make cities feel uncomfortably dependent upon the will of a state commission, which may be hostile politically or otherwise to the cities' aims.

This restriction and definition of the methods by which municipal ownership may be attained, and even the supervision of municipal undertakings by the state commissions, may in practice help rather than hinder the municipal ownership movement. But whether they help or hinder, it certainly cannot be claimed that the movement will be unaffected by them.

The indirect effects of state regulation upon the municipal ownership movement are even more numerous and important than the direct effects.

Except in those cases where perpetual franchises have been granted or where franchises have been granted binding the municipality to acquire the property at the expiration of the grant, public utility investments have not been legally recognized as permanent. The ultimate status of the investments has been more or less uncertain, but the definite limitation of a franchise has itself constituted a warning that the company ought to calculate upon getting its capital back out of earnings during the franchise period. Regulation assumes, however, that the investment is to be permanent, and, therefore, that the franchise-holding corporation has no reason for withdrawing its capital. Regulation assumes continuity and permanency, and is surprised and annoyed when the local authorities do anything to interfere with such continuity and permanency. Regulation does not even permit the companies to invest their earnings in extensions of plant, but practically requires that all such extensions shall be provided for from the proceeds of the sale of additional stocks and bonds. In this way, regulation often encourages the increase of the nominal capitalization of a utility. The general theory of regulation is that the capital investment shall grow with all improvements and extensions, and shall never be diminished except to the extent that property disappears or is withdrawn from use.

This theory is modified in certain cases to meet the actual requirements of local franchise contracts, as for example, in the city of New York, where the limited franchise now granted by the city authorities provides for the reversion of the fixed property located within the street limits to the municipality at the final expiration of the grant. In providing for the capitalization of the corporations

constructing plants under such franchises, the state commission requires that provision shall be made for the amortization of that portion of the investment which, at the expiration of the franchise, will be transferred to municipal ownership without payment, but no provision is made for the amortization of any of the property not fixed within the streets, whether or not its value is dependent upon its continued use in connection with a franchise. If, for example, a street railway is laid out so that a portion of its route lies on a private right of way, even though this private right of way may already have been placed on the city map as a future public street, the cost of the track laid on the private right of way is excluded from the amortization requirements. Moreover, if the franchise runs for a period of twenty-five years with an option for a renewal for a like period on a readjustment of the compensation paid for it, the commission bases its amortization requirements on the assumption that the franchise will be held for fifty years. Indeed, if the commission permitted the company to amortize its investment except to the extent that such investment represents property which will definitely pass out of the company's ownership and control at a fixed time, it would be permitting the company to pay for its property out of earnings derived from the public and still retain the property itself. It is for this reason that, in the absence of a definite, conclusive contract providing for the transfer of property to city ownership, regulating commissions will not look with favor upon the amortization of capital, unless they abandon the public point of view in an effort to "help out" the corporations.

The only contrary instance that has come to my attention is in the case of *Fuhrmann vs. Cataract Power and Conduit Company*, decided by the Public Service Commission for the second district of New York, April 2, 1913. This was a rate case. The company had been handling its amortization upon the theory that the life of its property would be equal to the term of its franchise, which would expire in 1932. The commission approved this general policy and authorized the company to withdraw from earnings from time to time an amount sufficient to complete the amortization of its depreciable property within the franchise period. The commission then called attention to the fact that at the expiration of the franchise the company would be the owner of a well-equipped plant in excellent operating condition which would have been fully paid for by the public.

The commission warned the city of Buffalo, as a franchise-granting authority, to jot this fact down in its notebook for reference in 1932, with the suggestion that, should the franchise be renewed, the company would not be entitled to a return which would enable it to amortize this property all over again. By a curious piece of reasoning, however, the commission intimated that, although the property would have been paid for by the public, the company, under a renewal of its franchise, would still be entitled to the regular fair return for the use of the property. This exceptional instance shows that, where regulation departs from the general theory above set forth, the result is still advantageous to the company and disadvantageous to the public.

One of the ways in which state regulation indirectly affects the municipal ownership movement is by the control over public utility construction accounts and capitalization exercised by state commissions. It is not easy to predict either the nature or the extent of this effect. So far as state regulation of stock and bond issues results in the actual squeezing out of water from the existing capitalization of a company or in keeping water out of future capitalization, it would appear that regulation must tend to make municipalization easier rather than more difficult. On the other hand, the extent to which the sanction of the state commission has the effect of bolstering up existing over-capitalization or of putting the state's guaranty upon new capitalization which in the course of time may come to be out of proportion to the real value of the depreciated plant, just so far will regulation tend to make the purchase of public utilities by cities difficult and burdensome. The ruling of the United States supreme court in the Consolidated Gas case to the effect that franchise values, once capitalized with the consent of the public authorities of a state, become an inviolable portion of the capital investment of a company, upon which it is entitled to earn a fair return the same as on its tangible assets, makes it extremely important that public regulating bodies should exercise the utmost care in approving capitalization, lest it be found that such approval, though improvidently given, be interpreted by the courts as a final guaranty both for future rate and service regulation and for purchase.

The right of the state commission to fix the value of a public utility property for the purpose of municipal purchase, whether directly as under the Wisconsin law or indirectly through the prior

approval of stock and bond issues, goes to the very core of the municipal ownership problem. Only a few years ago, constitutional and statutory restrictions, or the mere absence of delegated power, constituted a serious legal obstacle to the general acquisition of public utilities in most states and cities. This legal obstacle is gradually being removed, and we may confidently expect that in the near future the abstract right of cities to own and operate public utilities will be all but universally recognized in the United States. The next important obstacle in the way of the actual realization of the municipal ownership policy is the contractual relations existing between the cities and private corporations under franchises already granted. So far as the indeterminate franchise principle is applied, this obstacle will be wholly removed, and wherever the limited term franchise applies, it will be removed as the franchises expire. Even where unlimited or perpetual franchises have been granted, this obstacle is being overcome in some cases, and may be overcome in all, by the enactment of laws conferring upon the cities the right to take over public utilities by condemnation proceedings. The third great obstacle, which is of much more permanent practical importance than the other two, is the financial difficulty of paying for the property either out of taxes or out of earnings, with the temporary assistance of municipal credit. The purchase price of the utility is bound to be the sticking point. If the price can be beaten down low enough, the movement for municipal ownership will thereby receive a great impetus. If, on the other hand, the price can be beaten up high enough, the movement will suffer a corresponding check. Both from the standpoint of the city and from the standpoint of the corporation, the desirability or undesirability of municipalization in any particular case will largely be a matter of the price. The action of the regulating commissions, therefore, in substantially guaranteeing investments and capitalization in advance of the determination of the purchase price is bound to exercise a far-reaching though indirect effect upon the municipal ownership movement.

Valuations have come to be the big thing in the public utility world. Though for the present these valuations are usually made to serve as a basis for rate regulation, it is clear from the attitude of the courts that still higher valuations would be required in many cases as a basis for municipal purchase. In the play for advantages in the regulatory system now being established, the public service corpo-

rations have not been slow to see the critical importance of the valuation. Accordingly, all their ingenuity, power and influence, direct and indirect, are being brought to bear upon the problem of discovering new elements of value, and of persuading or coercing the commissions and the courts to recognize them. In this way, the almost inevitable trend of valuations is upward. Commissions, both out of the desire to be fair and even liberal to the companies, and also out of fear that their decisions may be upset by the courts, are continually giving the benefit of the doubt in valuation cases to the corporations owning the property. It seems reasonably certain, therefore, that, while the most scandalous abuses in capitalization will be corrected by means of regulation, nevertheless the recognized value of the actual property will be gradually swollen until it includes every conceivable element of "overhead charges" so-called, with certain additions thrown in for good measure. This tendency is the more inevitable because the commissions usually make their valuations as a basis for rate fixing, and the rate of return allowed on capital investment is a much simpler element of the problem than the valuation itself. Therefore, it is much easier for public opinion to force the rate of return down, say from 10 per cent to 8 per cent, or from 7 per cent to 6 per cent, than it would be to effect a corresponding reduction in the recognized capital value.

The possible effect of this double tendency upon the municipal ownership movement can be readily seen. Under the theory of the permanency of the investment usually recognized by the state commissions, no provision will be allowed for the amortization or retirement of the capital except such as is included under so-called "general amortization," which is nothing more than provision for the replacement of the property when it is worn out or obsolete. But when the city comes to take over a utility or proposes to enter into a contract by which the utility shall be made to pay for itself pending its transfer to public ownership, it is apparent that the rates, which have been scaled down without any provision for the amortization of the capital, may have to be increased again in order to take care of this new factor. If this should prove to be the case, the movement for municipalization would lose much of its political driving power. There is reason to believe that the average citizen who favors municipal ownership is still moved primarily by the expectation that under it he would secure better service, or lower rates, or both, and if it became clear that

in order to make municipal ownership successful, the rates would have to be raised, it is more than likely that the citizen's enthusiasm for the change would cool off rapidly.

Clearly, the effect of any system of regulation upon the movement for municipal ownership must be considered very carefully from the point of view assumed relative to the permanency of the investment, the guaranty of capital value and the limitation of rates. If public regulation says that the utilities are here to stay and we need never pay for them, and fixes values and rates accordingly, then the municipal ownership movement, when it comes along, will have an additional obstacle to overcome; for all *public* improvements have to be paid for either out of earnings or out of taxes. The danger of making public utility rates so low as to hinder municipalization is not limited to the activities of state commissions, however. The same result may be brought about by local regulation or even by franchise contract. It is quite conceivable, for example, that the Cleveland plan of automatic rate regulation will result in holding street-car fares down to so low a point that it would be entirely impossible for the city to maintain the same fares under municipal ownership while retiring the capital out of earnings.

One of the most effective arguments in favor of state regulation of public utilities is the fact that, under modern conditions, comparatively few utilities are confined within the physical limits of a single municipality, while many utilities have spread themselves over numerous municipalities, and some have become state-wide or even interstate in their ramifications. It is said that every utility should be operated as a unit and that the attempt to regulate it in geographical sub-divisions by several independent local authorities is illogical and impossible. Obviously, this argument has even greater weight against municipal ownership and operation than it has against local regulation. In so far, therefore, as state regulation represents a triumph of the unified operation idea as opposed to the geographical sub-division idea, it makes municipalization logically and practically more difficult. While various municipalities are actively engaged in regulating the operations of a utility within their respective limits, it is not hard to see how they could severally take over the utility, making such mutual agreements and concessions as might be necessary to enable them to operate it. But when the very idea of local control has been abandoned in favor of unified state control, the difficulty that would be

encountered in reviving the belief in the possibility of independent municipal operation is sufficiently obvious.

As a further incidental result of the transfer of regulatory powers from the local authorities to state commissions, there comes an atrophy of the municipal organs previously engaged in regulatory efforts, which are naturally the very organs to be developed into more active functioning if the utility is to be taken over for municipal operation. In other words, if the regulation of public utilities is taken out of the hands of the cities, the very activities which might gradually prepare the cities for the responsibilities of ownership and operation are prevented, with the result that the city is likely to become less fit as time goes on for the enlargement of its functions. In brief, state regulation is likely to result in a case of arrested development so far as the municipality is concerned.

Another way in which state regulation is likely to have a tendency to check the municipal ownership movement is in the creation of a powerful organ of government, state-wide in its ramifications and interests, which, like all established organs of government, straightway develops a strong instinct of self-preservation and self-perpetuation. To the state commission, a movement for municipal ownership in general or in a particular locality spells an indictment of the commission's success as a regulating body, and also means the curtailment of its functions and influence in the future. For these reasons, it is clear that, on the whole, the commissions, with all their tremendous power over legislation, politics and finance, will be actively or passively hostile to the municipalization of utilities under their jurisdiction. This hostility may not manifest itself in unimportant cases and may not even be manifested openly in very important cases. But that such hostility should exist and make itself felt in a general way, is, I think, an inevitable result of the constitution of human nature as we know it in American politics.

There are some reasons on the other hand for expecting that state regulation will hasten rather than hinder the municipal ownership movement. In so far as regulation is effective it will result in the training of a large body of technical men to look at public utility problems from the public point of view. This development will make the municipalization of public utilities more practicable and the success of municipal operation more likely. From this point of view, regulation is merely training men for the more direct and far-reach-

ing responsibilities of public ownership and operation. Moreover, in so far as regulation is effective, it will eliminate the speculative element from public utility investments and thereby drive out of the field a great many gamblers who are seeking to make personal fortunes through the exploitation of public privileges. It is from them that the bitterest and most dogged resistance to municipalization now comes. With the steadying down of the business so that no one can have any hope of receiving more than a just reward for a just service rendered, many of the public utility magnates will get tired of the game, and there may be a great accession to the ranks of the municipal ownership enthusiasts from those of the promoters who would be glad to sell at the best price possible and withdraw to other fields. It is further to be expected that the public knowledge which comes from uniform, accurate and detailed publicity will make municipal ownership more feasible and private ownership less alluring than heretofore.

It is possible that state regulation, through its failures, may result in greatly strengthening the demand for municipal ownership at the same time that it puts new obstacles in its way. If this proves to be true, we shall have a repetition of the many lamentable experiences of the past in American cities where it has often been found that the people, though in favor of a particular policy by a great majority, are helpless to put it into effect, with the result that political discontent, cynicism and civic paralysis ensue.

Perhaps one of the most likely effects of state regulation will be to enlarge the ambitions of the state itself and to create a strong movement in favor of state ownership of the inter-municipal utilities such as interurban railways, water power developments and transmission lines. In several respects, a movement for *state* ownership of utilities not strictly local in their character would not be handicapped by the tendencies of state regulation to the same extent that the movement for *municipal* ownership of even strictly local utilities might be so handicapped.

EFFECT OF STATE REGULATION OF PUBLIC UTILITIES UPON MUNICIPAL HOME RULE

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That some form of public control must be exercised over the privately owned and operated utilities in cities is no longer an open question. It is now generally recognized that private corporations supplying such necessities of present day urban life, as gas, electric light and power, telephone service and street railway transportation, must be regulated by public authority in order to protect the people against poor and inadequate service and excessively high rates. The only question about which we have not yet been able to reach an agreement pertains to the choice of a regulating agency. Would adequate regulation be best secured by leaving the initiative in such matters in the hands of the local authorities directly interested, with such general and supervisory power in the state government as may be deemed necessary to protect all interests involved, or would it be better to take this power to regulate entirely out of the hands of cities and give to the state government exclusive control over such local utilities?

It is evident that the present tendency is strongly in the direction of exclusive state regulation. No other proposed reform in recent years has had so much influential support, or encountered so little opposition from the sources which usually offer more or less determined and effective resistance to every legislative proposal designed to increase popular control over corporations of this sort. But the fact that the corporations subject to regulation favor state as opposed to city control, is no evidence that this plan of dealing with the problem will benefit the public. If it has any significance, it doubtless means that the representatives of such interests expect less exacting treatment at the hands of the state than under a policy of local control.

The advocacy of exclusive state regulation is not confined, however, to the representatives of the public utility interests. Many who desire effective regulation believe that complete state control

offers the best solution of this difficult problem. This conviction is partly due to the belief that cities, as mere local governmental units, do not have and can not be expected to have, the powers needed for effective control, even when the principle of local self-government is fully recognized by the state. The ramifications of such corporations often extend, it is said, beyond the limits of a given city and therefore make the question of regulation more than a merely local one. That this is true in many cases must be admitted.

It is also claimed that municipal control over these matters has not been a conspicuous success. This contention may, however, be admitted without concurring in the belief that exclusive state control would be more advantageous than or even as advantageous as a policy under which cities exercise substantial powers of regulation. There are obvious reasons for the failure of local control in the past. In the first place municipal authorities have been too much restricted in the exercise of such powers. The failure of local regulation must to this extent be placed, where it properly belongs, upon the state government. The attitude of both state legislatures and courts has not been such as to give much encouragement to the hope that exclusive state control will be an entirely satisfactory solution.

Another reason for the failure of local regulation in the past has been the lack of what may be called municipal democracy. Cities have not had a form of local government adapted to local needs. Their organization for governmental purposes has been cumbersome and not directly responsive to local public opinion. For this situation also the state government is largely to blame. The people of American cities have had to make a long and often discouraging fight to secure from the state government permission to exercise powers needed for their protection and the right to adopt a type of local government suited to local needs.

It is an interesting coincidence that just at the time when cities are being reorganized in accordance with democratic principles, a nation-wide movement should be inaugurated to deprive them of all participation in the control of local public utilities. It is also significant that this movement, though ostensibly designed to give cities more effective protection against public utility abuses, has not had its origin in any popular demand from urban communities. The initiative in this matter seems to have come very largely from the public utility interests.

But whatever the facts may be as to the origin of this movement, it can hardly be denied that local participation in public utility control has not had sufficient trial, under conditions affording a fair test of its merits, to warrant the conclusion which is implied in the demand for exclusive state control. If experience is the criterion by which we should be guided in this matter, there is much that might be said against the policy of exclusive state control. Even with respect to matters that vitally concern the entire state, state regulation has not been always or even generally a conspicuous success.

Whether cities should have an active part in regulating local public utility corporations, or whether this power should be lodged wholly in the state government, is a question that should be decided in favor of that agency which seems most likely, in view of all the facts and forces involved, to guarantee adequate control. If it could be shown by the advocates of exclusive state control that a state commission is not only better able, but also as likely to exercise its powers to secure effective regulation in the interest of the local public, a strong point would be made in favor of state control. Nor could cities claim under any reasonable interpretation of the doctrine of local self-government the right to exercise a function that would be more efficiently exercised by the state.

It is not, however, merely a question of placing this function in the hands of that governmental agency which has most power and prestige behind it. For the power to exercise a particular function is of little consequence, unless there is an adequate guarantee that such power will be exercised in the interest of the local public for whose protection it is designed. Here is where we find the weak point in this new program of exclusive state control. A state appointed commission, theoretically responsible to the entire state, may be as satisfactory a device as it is possible to secure for the purpose of regulating utilities in which the entire state has a direct interest. But when such a commission is clothed with the power to regulate utilities that are purely local in character, this guarantee is in large measure lacking. A state commission, in exercising the power to regulate local utilities, can not be regarded as responsible to the state in the sense that it is responsible when exercising a power in which the whole state is directly and vitally interested. In the former case the commission is very largely in the position of an irresponsible authority. The community or communities directly affected by its acts lack the power

to control it. It is a well established principle of political science that to ensure an efficient exercise of a given power, it should be lodged in some governmental agency directly responsible to a constituency that would be benefited by having it enforced. It is for this reason that exclusive state control of local utilities fails to meet the requirements of democracy. In so far as it substitutes an irresponsible for a responsible control, it strikes at the foundation of that essential of democracy—local self-government.

Some of the arguments advanced in support of this policy of exclusive state control indicate an attitude of mind more or less unfriendly to municipal democracy. The suggestion that public utility corporations can not expect fair treatment at the hands of the local communities which they serve, is virtually an assertion that the basic principle of popular government is wrong. If the people of a local community are to be denied all power to regulate local public utility corporations merely because they would be benefited by effective regulation, it would also be true that the state as a whole should not be trusted with the power to regulate corporations in the control of which the people of the entire state are interested. The same line of argument would deny to the federal government the power to regulate railways and trusts. It is in reality a demand that the power to regulate, in so far as it applies to local public utilities, be placed beyond the control of the local public.

The question may properly be asked in reply to this suggestion whether the facts concerning local regulation support the contention that a local community, such as a city, can not be depended upon to deal justly with its public utility corporations. Indeed it may be said that if such power as local communities have had in this respect has been unwisely exercised, the mistakes have been those of leniency and undue concession of privileges rather than those of unjust and unreasonable regulation.

But even if local sentiment should insist upon unreasonable regulation, local public utility corporations would not be exposed to any real danger, inasmuch as there is always an appeal from this local authority to the courts. Just why so much emphasis is placed upon this alleged tendency on the part of a local regulating agency toward unjust treatment of such corporations is difficult to understand, in view of the fact that its acts are subject to review in the courts of the state. There is little evidence to support a belief that our state su-

preme courts are inclined to uphold acts of local authorities which have the effect of unjustly restricting the rights of public utility corporations. In view of all the circumstances, it is difficult to resist the conclusion that public utility corporations are opposed to the participation of the local public in the exercise of regulation, not because they fear injustice, but rather because they hope to secure through exclusive state control, advantages which it would be extremely difficult to obtain if the initiative in such matters remained with any authority which is responsible to local public opinion.

One fact which should be referred to in this connection is the disproportionately small representation in the legislature given to the large cities under some of the state constitutions. This is indicative of an attitude toward the city on the part of the state which has some bearing upon the question of state control. If a state government is really in the position of an irresponsible authority when it exercises a function that directly affects only the population of a single city, that irresponsibility is made more pronounced when by the constitution of the state the city is denied its proportionate share of representation in the state government.

It is not difficult to see why public utility corporations operating under franchises from cities should desire immunity from local regulation. The progress which has recently been made toward municipal democracy is an indication that such powers as municipal governments are allowed to have will be exercised more largely for the protection of the people than they have been in the past. The easy, indulgent attitude on the part of irresponsible municipal authorities, which heretofore has redounded so greatly to the advantage of public utility corporations, is giving place to a more solicitous regard for the interests of the municipal public. The period has now practically passed when corporations can secure from local authorities franchises without provisions safeguarding the rights of the public, or expect lax local regulation.

Having secured privileges under conditions such as these in the past, public utility corporations are now seeking to evade the consequences of democratic control. No general opposition on the part of these corporations to local participation was in evidence during the time that municipal government was amenable to corporate influence. It is only since the appearance of responsible municipal government that public utility interests have been so actively opposed to local

regulation. This may be regarded as merely one manifestation of that disapproval of local self-government, which has so often found expression in legislative acts and in court decisions. It is but natural that the present attitude of public utility corporations toward local regulation should reflect to some extent the old distrust of popular government. Efficient democratic organization necessarily means the strict regulation of such corporations. With the progress of democracy in city and state there is less opportunity than heretofore for the direct control of political agencies by corporate interests. From the point of view of those identified with the management of public utilities, popular government is a danger as real as class government was to the masses when the latter had little direct voice in public affairs. They are therefore as much interested in limiting effective popular control as the people were formerly in restricting control by a class. It is not easy to accomplish this, however, by an open and direct attack upon the principle of popular control.

As the sentiment in favor of democracy becomes more intelligent and active, the efforts to thwart democratic control must, in order to accomplish their purpose, employ means that are less obviously at variance with the predominant tendency of the time. It is for these reasons, in part at least, that so much impetus has been given to the movement to take the control of public utilities entirely out of the hands of cities. To establish a plausible justification for the policy, one which can be reconciled with the idea of democracy, an attempt is made to show that local participation in such control results in no real benefit to cities, that the greatest advantage to cities themselves lies in the direction of exclusive state regulation. But behind this argument, and only partially concealed from view, is the fear that municipal control will be too largely exercised from the view point of the local public and not sufficiently regardful of the interests of the corporations subject to its authority. To transfer a function which is properly a local one to the state government is to make the exercise of that power irresponsible and to defeat to that extent the purpose of government by the people.

Changes in economic conditions throw some light upon the origin of this movement for exclusive state control. If general prices had continued to decline as was the case throughout the period from 1873 to 1897 it is unlikely that franchise holding corporations would have been interested to the extent that they now are in securing immunity

from local regulation. Wherever a franchise fixes a maximum price which the company may charge, it has been treated as a contract under which the company has the right to charge up to that amount for service. During the period that general prices were declining, public utility corporations operating under franchises of this sort were in a peculiarly advantageous position as against the general public. The legal right to charge a fixed price, while prices in general were falling, was in effect the right to an increasing rate for service.

But when after 1897 the purchasing power of money began to decrease, this advantage disappeared. Such corporations were now confronted by increasing cost of operation along with a charge for service which was fixed in terms of money. One can easily see that, if prices should rise sufficiently, such corporations might find themselves in financial straits unless the effect of rising prices on cost of operation could be overcome by increase in the volume of business, or by more economical and efficient management. Of course it does not follow merely because the charge for service has been automatically reduced through the decrease in the purchasing power of money, that the price for service, as fixed in the franchise, is too low. It may still be higher than is sufficient with efficient management to ensure a reasonable return on the actual investment. It is true, however, that such companies have lost a very real advantage. The change in economic conditions has converted what was in effect a constantly increasing charge for service into one that is now decreasing. It is not surprising that corporations thus obligated to supply service on the basis of a fixed money charge should seek some means by which to avoid the consequences of rising prices. It is doubtless largely due to this desire to safeguard their interests that the representatives of public utility corporations are so actively pushing the movement for exclusive state control. They realize that cities may not easily be convinced that a franchise provision which protected the company against reduction in the price for service when all other prices were falling, should not also protect the public against an increase in the charge when all other prices are rising. If the franchise is in the nature of a contract, as has been held by the courts, then both parties are entitled to have it enforced for their protection. If a particular provision is enforced when it is advantageous to the company and disadvantageous to the public, the question naturally arises, why under changed conditions it should not also be enforced when it is advantageous to the public

and disadvantageous to the company. Any other view of the matter would jeopardize the rights of the local public. There is altogether too much tendency to regard a franchise as a contract only in so far as it protects the interests of the grantee. Indeed this seems to be one of the chief dangers of state control. The public utility corporations at the same time that they are seeking immunity from municipal regulation are claiming whatever legal rights and advantages they have secured from local franchise grants. There does not appear to be any indication that public utility interests now in favor of state control are willing to relinquish any of the advantages which are secured to them by having a franchise regarded as a contract; but while retaining these they hope to secure relief from such franchise provisions as have become burdensome.

It would doubtless be too much to expect that a responsible municipal government would take kindly to this view of the matter. It is more likely to act on the theory that, if the franchise binds the city, it also imposes a like obligation upon the company. For in no respect is local control more sensitive to local public opinion than when it concerns the question of advancing the price for a public utility service above the maximum fixed in the franchise. A change such as this, imposing as it would, an additional and obvious burden upon the public, could not secure popular approval, unless the people who are required to assume it were fully convinced of its justice.

The most serious objection to state control, from the point of view of municipal home rule, is the effect it may have upon publicly owned utilities. The efforts now being made, wherever public ownership exists, to bring municipally owned plants under state control, may be due only in part to public utility influence, but they are certainly in line with the political program of the public utility interests. Let the state determine the price to be charged for service by municipally owned plants, and private corporations will have less to fear from public ownership. This would be the most effective way of checking the increasing tendency to municipalize such industries.

It is now too soon after the inauguration of the movement for exclusive state control to permit any sweeping conclusion as to its results. These will depend upon the extent to which the urban communities within a state can make their influence felt in the state government and especially upon the attitude of the judiciary, state and federal, toward franchises and franchise legislation. Unless the courts

completely abandon the idea that a franchise is a contract, the new policy of exclusive state control is fraught with danger to the public. The power to authorize a local public utility corporation to increase the rate charged for service above the amount fixed in its franchise is one over which such corporations would have most influence when it is taken entirely out of the hands of the local government. And unless this power to raise rates is also accompanied by the power to reduce them below the maximum permitted by the franchise, cities have much to fear and little to gain from state control.

But even if exclusive state control of public utilities secured better and cheaper service, it would still be a questionable policy. An economic advantage such as this might be secured at too great a political sacrifice. The probable effect of state control upon the attitude of the people towards, and their interest in, municipal government, is of much more consequence than any possible material advantage. There is no problem in which the people of American cities are more actively and vitally interested than that of public utilities. To take from them all power to deal with this important local matter would necessarily weaken their interest in municipal politics. It is too much to expect an alert and active general interest in municipal government, unless it can be used to accomplish important local results. The failure on the part of the state to grant cities adequate powers of local self-government has been in no small degree responsible for the apathy and indifference of the public towards corruption and inefficiency.

The progress in recent years towards municipal democracy has made public ownership a more advantageous method of dealing with the public utility problem. With the extension of municipal activities in this direction, local government would acquire an importance which it has not had in the past. The effort now being made by private corporate interests to tie the hands of cities in relation to publicly owned utilities will, if it succeeds, be the most effective blow yet directed at the principle of municipal home rule.

STATE VERSUS LOCAL REGULATION

BY STILES P. JONES,

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Regulation of public utilities by the state, the popular program in the regulation field during the last few years, is receiving some serious setbacks of late.

The alleged Tammanyizing of the New York state commission under Governors Dix and Sulzer, and the later demoralization of the up-state commission through the influence of state politics, have called public attention to these bodies with such effect that they will be of little use in securing legislation of this character in the newer states. They are no longer assets to the state regulation propaganda. They are of more value, in fact, as examples of the possibilities for evil that the system contains. New Jersey and Maryland, the only other eastern states having state regulation in effect long enough to afford any test at all of its worth, have done little and some of that little so badly that they are not useful for "boosting" purposes, especially in states where there is a fair proportion of men of democratic minds. In California, where they are apparently doing some things well in this field, the public utility law is of such a character as to afford no fair comparison, as it gives communities the right of home rule, and has no city of considerable size as yet under its jurisdiction.

But there remains Wisconsin, which with New York was the pioneer in the movement for state regulation of public utilities. The system has been in effect there for almost seven years, ample time for a fair test of its merits. The experience of Wisconsin has been used everywhere to buttress the claims of the advocates of the state regulation principle. The most extravagant statements have gone forth of the success of the Wisconsin system of regulating its public utilities. Hardly a voice has been raised in opposition. Legislatures in many states have been induced to adopt similar legislation on the strength alone of the Wisconsin claims. The Wisconsin act has been a popular model for the laws of nearly all of the states that have adopted such legislation.

Now comes the Minnesota Home Rule League with an interesting story of an investigation of the results of state regulation in Wisconsin which, if it stands the test of controversy, will make it more difficult hereafter to use that state as an example for other commonwealths in this regard. The old claims will at least no longer pass unchallenged. The league puts the Wisconsin system under a pretty severe fire. The indictment is strong and comprehensive and uncompromising.

The inspiration for the league's investigation came from the controversy in the legislature of 1913 over the question of adopting a state regulation program for Minnesota. This was pushed strenuously by the governor, backed by the state machine, and behind the state machine the public utility companies of the three cities, which, with the big brewing companies and the job-holders, constitute the main gear of the state machine.

A bill modeled closely on the Wisconsin act was introduced and pressed. The progressives in the legislature were not particularly opposed in theory to the state regulation principle. On the contrary, they were rather disposed in its favor on account of its associations. But when the character of the bill and its chief support became apparent they swung hard and put the bill to sleep. The governor then in reprisal vetoed a couple of progressive bills: one whose purpose was to compel physical connection of telephones for the convenience of the farmer folks, the other to give the city of Minneapolis power to make rates for the electric monopoly of that city. And then the war was on. The governor, at the conclusion of the session, promptly gave notice that he would call a special session for later in the year to pass a state regulation act. With the purpose of blocking the governor's program, the men most prominent in the movement to defeat the state regulation bill at the regular session organized under the name before mentioned, and began probing for information on the subject. Facts regarding the practical results of state regulation were the prime necessity, and, as the first step, the league first proceeded to comb Wisconsin for information of the workings of the system in that state, then to make a long-distance study of the results in New York, New Jersey and Maryland.

This investigation covered more than eight months, and the results are contained in the matter before referred to and now just

published. This represents the first thoroughgoing critical study yet made of the situation in Wisconsin. Departing from the usual custom the league did not stop with getting estimates from the railroad commission of the value of its own work, nor with taking the word of the commission's biased friends, but studied closely official reports and court decisions, and then went to the cities of Wisconsin for direct evidence. In its studies of the subject it sought to ascertain the following facts: First, the inspiration for the present popular movement for state regulation; second, the character of the acts in the several states; third, the make-up of the commissions; fourth, the results of state regulation as expressed in rates and service, on the local politics, on the citizenship of the local communities and on the material welfare of the public utilities.

The evidence in its general application to the United States plainly clinches the following big facts:

1. That the latter-day inspiration for state regulation comes from the public utility companies to be regulated, reinforced by an element of the so-called progressives in some states who have been made to believe that state regulation is a progressive institution.

2. That the public utilities have sought to write the laws and have done so in some cases, and modified the laws in others; have used their influence upon the appointing power to name men of "right" minds on the commission; have sought to influence the attitude and to control the action of the commissions after appointment.

3. That with few exceptions the men occupying positions on state commissions had no technical or special qualifications for the work, and in most cases were selected for services past or prospective to the appointing power, and in other cases were men with public utility or allied affiliations, or men known to have a strong corporation or property bias.

4. That state regulation has not given the people the benefit of as favorable rates, nor as good service, as many cities with home rule powers have secured for themselves.

5. That it has not eliminated the public utilities from local politics, but on the contrary has compelled them to become more active than before.

6. That the effect on local citizenship has been disastrous, weakening the community in initiative, self-reliance and capacity for self-government.

7. That in the valuation field, both for rate making and purchase, the state commissions have shown a strong leaning toward the interests of the utility companies.

8. That the public utilities have found that state regulation serves their purposes admirably; that it protects them from unreasonable rates, assures them liberal dividends, imposes no unreasonable service obligations, by means of the indeterminate permit assures the permanency of their investments with opportunity to get out in the event of purchase by the city at a price considerably above the legitimate investment in the property, increases the market value of their securities, and, finally, in effect, through state supervision of bond and stock issues, guarantees the integrity of their securities.

The above indictment is general against the result of state regulations where it has been fairly tried out, with reservations in the case of California. As to the results in Wisconsin, the league testifies to the integrity and high personal character of the members of the railroad commission. Its criticism is directed against the essential principles of the public utility act and its administration by the commission. The attitude of the commission in the matter of charges for service is fairly shown in the study made last year for the league of the commission's reports for a period down to March, 1912, the date to which the printed reports come down. It contains a report of 134 cases. Of this number 38 were telephone cases. No steam railroad cases were included. The summary follows:

Wisconsin cities and the public generally asked the Wisconsin commission in charge of public utilities for reductions in 39 cases. Substantial reductions were granted in but 3 cases, and small or nominal reductions in 8 additional cases.

Public service corporations of Wisconsin asked the commission for increase of rates in 52 cases. Substantial increases were granted in 43 cases and small increases in 7 additional cases. In other words, some increase was granted in nearly every case where it was asked. Some were granted when not asked for.

Cities or the public asked for better service in 32 cases. Better service was ordered in 20 cases, in some of these cases conditioned upon increased rates.

Public service companies asked for relief of various kinds in 10 cases. It was granted in 9 cases.

Citizens or cities asked relief in 10 cases; granted in 5 cases.

To express the result in another way, the public was successful before the Wisconsin commission to a substantial extent in but 7 per cent of the cases

brought by it for rate reduction, and was given even the slightest relief in but 29 per cent of the cases.

Public service corporations were successful to some extent in more than 96 per cent of the cases they brought before the commission for rate increases, and were fully or substantially successful in more than 82 per cent of the cases where rate increases were asked for.

In a term of five years, during which the trend of public service charges was so strongly downward, the trend under the Wisconsin commission was uniformly upward.

The severest test of the state regulation system in Wisconsin is found in its handling of the problems of the cities. It is here that its failures are the more manifest, and the consequences the more serious. The cities of Wisconsin furnish many interesting instances—Milwaukee, Superior, Madison, La Crosse, Sheboygan, Racine, Oshkosh and others. The gas, street car and electric utilities in the Wisconsin cities have failed to meet reasonable public demands and the railroad commission has been unequal to the task of compelling them to. The commission has often moved with extreme deliberation. Its orders, when they really meant anything, have been ignored by the companies or appealed to the courts and litigated to the bitter end. Its methods have distinctly invited litigation, with the consequent delay and large expense to both parties.

The claims of the commission of the large savings to consumers of gas and electricity and patrons of street railway companies in the cities of Wisconsin are in part only savings on paper. Many of the estimated reductions made during the past year are held up awaiting the action of the court of last resort, with the people paying the old rates in the interim. Yet, it has been persistently told how the companies respect the decisions of the railroad commission, so unassailable are they as to law and facts.

The commission's policy of discriminating charges for gas and water has put it under severe criticism. In this respect it has over-emphasized scientific methods at the expense of the larger welfare of the community and has at the same time determined matters of broad public policy which by every right the community should determine for itself. Milwaukee furnishes an instructive illustration. There was in effect here a step rate system of charging for gas, with a maximum charge of 75 cents, dropping down to 50 cents in five steps. Petitioned by the city to reduce the price to the small consumer, the commission, following an investigation covering

two years, made no change in the schedule except to reduce the price to the class of largest consumers to 45 cents. This class constitutes but 2.68 per cent of the total number of consumers. They had asked for no reduction in charges. The claims of the others received no recognition whatever from the commission.

Some months later, in the Waukesha case, the commission took similar action—reduced the price of gas 10 cents per thousand feet to four classes of consumers, constituting 6 per cent of the total number of users of gas, and passed up the claims of the other 94 per cent, those who were paying the top price.

It is one of the claims of the advocates of state regulation that under this system special rates and privileges are abolished. This is just the reverse of the facts in Wisconsin. It is the Wisconsin Railroad Commission that has developed to the highest point the classification of consumers of utility products. This is not the kind of regulation which the Wisconsin public expected when state regulation of public utilities was established, and many sharply question the wisdom of it, despite the commission's claim of scientific accuracy for its system. They contend that if they are to have such a system of discriminatory charges it should be determined by the public itself and not by a state commission sitting at Madison.

Later in the same year the railroad commission issued a tentative order in the matter of water rates in Milwaukee in which it applied the same discriminatory principle. Such a furious protest went up from the people that the commission withdrew its order—one of the rare instances when it has shown a disposition to yield in any way to public sentiment.

Street railway service in Milwaukee has been atrociously bad for many years. The commission has made several half-hearted attempts to better conditions. Its latest order, issued in 1913, six years after the city filed its original complaint, on its face gave promise of some relief. It made a fairly adequate standard of service for rush hours. The commission then went back to Madison and left to the citizens the enforcement of the terms of the order through the usual channels of official complaint to the commission. There is no improvement whatever in the situation, and no other result could be expected from such methods. In Minneapolis, the city council had previously adopted a quite similar order. Unlike the Wisconsin commission, it followed it up vigorously, made

arrests, secured convictions and brought the company to terms. The council keeps a man on the job all the time checking up conditions, and when a remedy is needed promptly provides it.

In the battle for lower street railway rates in Milwaukee there was the same vexatious delay in getting action from the commission, and then the inevitable litigation in the courts. After waiting seven years for results the street railway patrons received the benefit of a reduction from 12 tickets for 50 cents to 13 tickets for 50 cents. But this reduction had a string tied to it. The reduction is expressed in the form of a little black coupon which, if carefully treasured until the time when the United States supreme court adjudicates the case will be good for a trip over the line. Compare such a meager and uncertain result with what Cleveland, Columbus, Toledo and Detroit, with 3-cent fares, have secured for themselves through the direct action of their city councils!

The experience of Madison, the home of the railroad commission, clinches one big vital fact of state regulation in Wisconsin—that the public utility act, as enforced by the commission, protects the existing utility monopoly in a community no matter how inefficient its service or how excessive its charges. The people of Madison get their electric service from an antiquated steam plant, with unlimited cheap hydro-electric power available at the city limits, and pay rates based on cost of production under steam plant conditions.

Now why does the commission stand in the way of the citizens of Madison in their attempt to secure lower light and power rates? Simply because the commission has a theory to sustain: the existing monopoly must be protected. This instance emphasizes the fact that the public utility law, like all legislation conferring monopoly privileges on private corporations, not only does not secure economy, but encourages extravagance. How different this arbitrary attitude of extreme devotion to a theory with the practice of the California commission, and how different the results!

To secure its rights and give the city opportunity for industrial expansion the citizens of Madison have now organized, employed experts and stripped for battle. The commission, long hostile to the efforts of the Madison community to secure its rights, now shows a disposition to yield to some extent.

Baraboo, La Crosse and other cities furnish other instances of this attitude of slavish devotion to a monopoly theory at the expense of the public interests and in violation of the conservation so strongly upheld by other departments of the state. Wisconsin cities under the Wisconsin monopoly theory have but two alternatives—to buy from the local monopoly, or purchase its property, no matter how unsuited to its use or how obsolete its equipment, at a price named by the railroad commission, and this price based on the jug-handled theory of the reproduction value of the property.

The city of Superior has furnished exceptional opportunities for the study of the practical results of state regulation, together with comparative results, for just across the bay, in Minnesota, lies Duluth, operating under a home rule charter and with large powers to work out its own public utility problems.

Public utility conditions in Superior have been unsatisfactory all along the line—chronic high rates and poor service. During the six years between 1905 and 1911, the charge for gas was \$1.40 per thousand feet. Over in Duluth, where home rule prevails, the price for the same years, for the same identical gas, coming from the same source, was 75 cents per thousand feet. Subsequent reductions in Superior were made voluntarily by the company. The railroad commission has been of no other assistance to the community in this regard than to confirm the company's voluntary reductions.

In 1912 the commission ordered a reduction in street railway rates from 5 cents straight to six fares for 25 cents. The company promptly appealed to the courts, where the case now rests. It is significant that Superior has today less street railway trackage in operation than it had twenty years ago, while the population has doubled in that time. The company refuses to make any extensions; the city is helpless to do anything for itself, and the railroad commission "sits tight" down at Madison. The sentiment of the Superior community toward this utility is shown by the fact that a year ago it voted seven to one to ask the legislature for authority to take over the property for municipal operation. This was granted, and the people will this spring vote on the direct issue of municipal ownership.

In Duluth the gas and water utilities are eliminated from local politics. The public service companies in Superior remain active

factors in city politics the same as before the state commission came into existence. In fact, they come pretty near to dominating the politics of that city.

In the foregoing I have only touched upon a few of the problems of the cities of Wisconsin, enough, however, to indicate some of the perplexities of the situation in that state and to show how the public utility act, as administered by the railroad commission, has failed to secure satisfactory results in rates and service. These constitute the important test of the system in the popular mind. Some of the principles enunciated by the commission in its application of the utility law and its methods in reaching conclusions as to the proper basis for rates and service seem to me to be the more vital consideration, and the one which shows more clearly the fundamental defects of the law and its operation.

Of prime importance is the tendency of the commission to take upon itself constantly more power and responsibilities. Already overburdened with work and complaining constantly of being undermanned, the commission encouraged the last legislature to add to its duties the administration of the water power act and the "blue sky" law. The commission's work has developed to such a point that it is compelled to delegate its duties as a commission to individual members. This is a significant and dangerous departure from the original purpose of the act and the past practice of the commission. Even cases of large importance are now decided by a single member. Instead of encouraging communities to assume some responsibilities for the settlement of their local utility problems, the commission persistently forces upon them the opinion that they are not competent to handle such matters, and takes from them all direction and control, even down to the smallest detail.

A dangerous development in this connection is the growing disposition of the commission to write legislation. In practical effect it controls the action of the legislature in the public utility field. The legislative body is hardly anything more than a rubber stamp for the commission. It shapes recommendations of the executives as well as writes legislation. It defeats measures initiated by municipalities designed to give them power to deal with bad local situations.

The operation of the indeterminate permit in Wisconsin is one of the things that has inspired much criticism. The results under

the interpretation of the railroad commission have been as follows: (1) It has prolonged the life of privately owned utilities through its obstructive effect on municipal ownership. (2) It has entrenched the companies in their monopoly grip upon the cities, with the result of continued excessive charges and inefficient service. (3) It has made it impossible for municipalities to secure cheaper or better street light service through the construction of municipal plants. (4) It has nullified existing contract obligations between cities and utility companies, often to the great advantage of the companies.

Valuation of public utility properties for rate making or purchase purposes has been another of the big functions of the Wisconsin commission. The attitude of the commission in this regard has been a large factor in determining rate and service results. Here again the commission has made itself subject to severe criticism. It has carried to the extreme limit the theory of reproduction value. It has put such emphasis upon this questionable theory as often to do violence to every sense of justice and fair dealing toward the public. The result has been that cities have been compelled to pay fancy prices for out-of-date plants with obsolete equipment, including liberal "overhead charges," property that came to the company through gift of consumers or the city, "going value" to a large amount, in purchase propositions large sums for paving over mains paid for by the public and which were never disturbed—in the Oshkosh case \$58,000, in the Appleton case \$17,000—and, as a final refinement of valuation to further fatten utility property values, an item described by the commission in the Milwaukee gas case as allowance for "unusual engineering skill and foresight." This item is in effect the capitalization of the business sagacity of a public utility company expressed in wise and economical construction of its property. The commission refuses to go on record as to the exact amount represented by this item, but it is certainly a substantial sum.

As evidence of the practice of capitalizing public donations note the following from the decision of the commission in the Ashland water works case:

For purposes of proceedings like those herein, the utilities law does not inquire into the manner in which property of utility corporations devoted to the public use was originally obtained, whether by purchase, inheritance, gift or theft. The law simply compels the commission to value this property,

and to consider this valuation in taking official action with respect to rates and service. It therefore follows that the value of the donated land must be included in the value of the property devoted to the public use.

In the matter of including service connections paid for by the consumers, the commission declared in the same case: "from a legal point of view, the same position will doubtless have to be taken." In other words, the land donated by the city and the service connections paid for by consumers are used to pad valuation, while a rate for service is made that will secure a fair return to the company on such valuation. If there was any record of the commission seeking through legislative amendment to remedy this atrocious situation the case would look better.

In its treatment of going value, the commission includes this item as part of the capital investment of the company upon which the public must pay returns in perpetuity. In effect, it capitalizes the company's early losses, puts upon the public all the hazards of the business, and assures the utility of liberal returns on its investment from the very beginning of operation. The commission refuses to express going value in definite terms. The public has no means of knowing to what extent this factor has been included in the value of a utility. The commission contents itself with stating that it "has considered" going value in reaching its valuation. The Wisconsin supreme court upholds the correctness of this attitude. Note the logic of this situation: The railroad commission says it cannot express going value in definite terms. The supreme court agrees with it. Now, if the commission does not know how much this item should be, and the court does not, how can it be included in the valuation?

Again, the uncertainty and vagueness that characterize so many of the commission's decisions are well illustrated in this case by the inability of the Wisconsin circuit and supreme courts to agree as to whether the commission had fixed the going value or not. The former said it had, the latter that it had not. Apparently the Wisconsin courts are burdened with the task of deciphering what the commission means in addition to reviewing the legality of its orders. And to make it certain that this matter of going value never shall be cleared up, the supreme court, in the Appleton case, effectively stops future inquiry by declaring: "that the mental processes by which the final results (the valuation) are reached by a

commissioner, and the relative importance given by the mind to each element, as well as the legal or economical principles deemed by him to have a bearing on the result, are not subjects upon which a commissioner can properly be examined."

One of the popular claims for the public utility act is that it has taken the utilities out of city politics. This does not appear to be true to the facts. In all of the large cities of the state acute utility problems are demanding solution, and the leading questions are utility issues. There is much political unrest in the cities of Wisconsin; and public utility issues are the main contributing cause. To secure relief from intolerable conditions, city officials have had to take the initiative, and, when the commission fails them, appeal to the courts. Finally, unable to secure relief from any other source, they start agitating for public ownership. This compels the utility companies to go into politics harder than ever before in order to control the situations and protect their investments. In practically every municipality where the utility problems have been acute, the big local political battles have been fought over these questions.

Three notable principles marking progress in government and development of civic ideals are now permanently identified with the administration of government in the United States. Growth in genuine progressiveness may be measured by the degree of acceptance of these principles as fixed ideals of government. They are: First, civil service methods in the conduct of public business; second, conservation of the public resources; third, municipal ownership of public utilities. Yet, strange as it may seem, in Wisconsin, recognized as the leader of all the states in progressive policies, these now generally accepted and applied principles of progressive government are rejected by an institution loudly heralded the country over as the most progressive feature of the administration of this progressive commonwealth. The railroad commission has admittedly led all the other commissions of the state in evasions of the terms of the civil service act. In its interpretation of the indeterminate permit it has discouraged the development of available hydro-electric power and its use in the cities to displace steam plants. Its attitude toward municipal ownership, other than water works, has been distinctly obstructive at all times, on the theory that municipalities are not competent to perform such duties of city administration. Outside of water plants, only four private utility

properties have been municipalized during the seven years that the act has been in effect, and only one of these had a valuation to exceed \$50,000.

The most significant fact to chronicle in concluding this article is the recent change in the attitude of the Wisconsin public toward the railroad commission and the public utility act. There is a rapidly rising tide of protest against the results and tendencies of the system. The public, long so acquiescent in the work of the commission, and so willing to accept its own estimate of its value to the state, are now studying the result for themselves and questioning sharply its program and policies. A condition of inquiry and unrest pervades the whole state.

The people in the past few years have seen their taxes go up by leaps and bounds, utility rates increasing, small improvement or none at all in service and the power to obtain relief for themselves denied them. A day of reckoning now seems to be at hand. A state-wide movement, non-partisan and inclusive in character, starting from Madison, the home of the commission, is rapidly gaining headway and seems likely to sweep the state and force a new political alignment in Wisconsin.

It is an unfortunate complication that others of the state commissions are involved in this controversy; also that many of the old stand-pat elements in Wisconsin are enlisted in the fight and may find in this contention the opportunity so to discredit the Wisconsin progressive movement as to wedge themselves back into power. It is equally unfortunate that the railroad commission could not have earlier discovered the rising dissatisfaction with its methods and secured legislation to relieve it.

Discontent over the results as seen in rates and service in the public utility field and rapidly growing tax burdens constitute only a part of the cause for the present situation. The unrest is more deeply seated and more fundamental. The people are becoming conscious of the rapidly growing power of the system over the politics and the policies of the state. The conviction is gaining with them that the commissions are ruling the people instead of serving them; taking away instead of protecting their liberties; destroying instead of conserving self-government—all the logical results of an irresponsible bureaucratic system.

The railroad commission, long so arbitrary in its attitude and so disregarding of public opinion, is bending to the storm in an apparent effort to mollify public sentiment. This is seen most significantly in the recent Waukesha gas case, where the commission changes its attitude radically in the matter of protection of utility monopolies in the control of the local fields. The commission has steadfastly refused to give communities relief from the oppressive rates of electric plants operated at a low efficiency or under conditions of obsolete equipment, and resisted all efforts of the communities to obtain it for themselves. The commission has so interpreted its duty under the Wisconsin public utility act. In this case it plainly reverses itself, declaring that it is not the intent of the law to make an indeterminate permit entirely exclusive; and that the commission may allow competition where the conditions warrant it. This will be welcome news to Madison and other cities long struggling with the problem of securing proper rates from a monopoly entrenched utility.

Again, the commission has authorized the issuance of nearly one billion dollars of securities of public utilities. It has consistently extolled the supervision of securities as one of the crowning glories of the Wisconsin act. Now comes Chairman John H. Roemer and sounds a warning against this feature of the law. He declares that it contains elements of grave menace to the public interests, involving what in fact may amount to state guaranty of the integrity of the securities authorized and possibly of all previous issues.

With the commission reversing itself on vital phases of the regulation act in such rapid sequence, what is the logical end? Can it be anything less than a return to the wholesome principles of home rule, leaving to the people of the municipalities to determine for themselves questions that concern only themselves; working out their local problems in their own way free from outside interference; and in the process acquiring self reliance and capacity for self-government. This is the foundation principle of the American system of democratic government, and the only system which will assure permanent conditions of honesty and efficiency in administration and genuine government by the people.

PUBLIC UTILITY REGULATION BY LOS ANGELES

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California cities have enjoyed a large measure of home rule granted by the state constitution. In this respect they are more fortunate than most American cities. A still greater latitude for the larger cities to work out their local problems is desirable. The city of Los Angeles has generally made good use of the privileges it enjoys in this respect. It has, however, in a measure fallen short of the best requirements in creating a strong and well equipped department for regulating public utilities.

Up to the time the board of public utilities was created by charter amendment the rate-making and regulating power was vested exclusively in the city council.

Board Created by Referendum

The Municipal League of Los Angeles started the movement in 1907 to secure a board of public utilities. After two years of agitation the city attorney was instructed by the city council, then about to retire, to prepare an ordinance to create a board. The city attorney's draft was rejected by the council and another substituted instead. This in turn did not meet with the approval of the Municipal League. The league prepared a substitute ordinance which was passed as an initiative measure by popular vote at the ensuing election by 16,626 for and 9,696 against.

Thus was first created a department of public utilities. On December 20, 1909, the mayor appointed the three commissioners to make up the board. The board was organized on December 27. As constituted under the provisions of this ordinance the rate-making powers of the board were limited to that given in the following language: "To recommend to the City Council . . . a schedule of charges for the services specified"

Board Created by Charter Amendment

On March 25, 1911, fourteen city charter amendments were approved, article 15 of which provided for a department of public utilities. Previous to this charter amendment, as indicated above, the board could only recommend to the council the rates to be charged.

In preparing the draft of the charter amendment creating a board, the framers proposed to give it full power to fix rates subject to review only by the courts. The council refused absolutely to submit the amendment carrying that power for the board. They insisted that rate making was a prerogative that should not be given up by the council as it required their guardianship to stand between the people and the power of the corporations.

Three commissioners constitute the board, with a term of office of four years. They are appointed by the mayor subject to confirmation by the council. Up to March 1, 1912, all commissioners served without pay. Since that time the president has been allowed a salary of \$3,600 a year and is expected to devote his entire time to the work of the board. The commissioners are subject to the recall as are all city officials.

Powers and Duties of the Board

The city charter provides that the powers and duties of the board of public utilities shall be as follows:

To make at such times as may be prescribed by ordinance a thorough investigation into the affairs of all persons, firms or corporations operating or maintaining water, electric lighting, power, gas or telephone systems, or street railways, or interurban railroads, or other public service utilities, in the city of Los Angeles. Such data shall include a valuation, a detailed statement of gross and net earnings, expenses, capitalization and indebtedness thereof, and such other matters as the board may deem proper, and also such facts and figures as may be obtainable regarding the operation and maintenance of similar systems and utilities in other municipalities.

To fix, *subject to approval, change or modification by the council*, the rates to be charged and collected for the service mentioned, for a period not less than one year, nor for a longer period than three years.

Any person interested in or affected by the rates specified in any such resolution *may file objections* thereto. *The council* may, upon any such petition, by a vote of two-thirds of its members, order a rehearing of the rates objected to, and *shall have the power to finally fix* such rates¹ by approving, changing or modifying the same. The affirmative vote of two-thirds of the entire council shall be necessary.

To investigate complaints against the service or charges of any person, firm or corporation operating any public service utility in the city.

To superintend the inspection of all public utilities operated, maintained or furnished by persons, firms or corporations, as to their compliance with their franchises, and with the law and ordinances of the city regulating the manner of conducting their business, and their treatment of the public, and to recommend such legislation, or executive action based on such investigation, as in their judgment may be required.

To prepare and keep a detailed and indexed record of all public service franchises granted by the city that are now in existence, or that may hereafter be granted, showing the date, location, term thereof, and all other essential facts, and a similar record, so far as practicable, of all other public franchises exercised in the city of Los Angeles.

To pass on applications for franchises. Every application to the city council for a franchise for any public service or utility shall be referred to the board of public utilities for its recommendation. No franchise shall be advertised for sale or granted contrary to the recommendation of said board except upon a three-fourths vote of the entire council.

To make and enforce subject to ordinances adopted by the council, rules and regulations respecting the operation of all public utilities.

To require attendance of witnesses, production of books, records, papers at investigations, hearings, etc. Each member of the board is empowered to administer oaths.

¹ Italics, the writer's.

Inadequacy of Powers

The powers of the board are too limited and are not as well defined in the charter as they should be. While the council has the power to enlarge and better define these powers and duties, this has not as yet been done in a satisfactory manner. The charter provisions as above quoted in abstract show a conspicuous example of apparent distrust and lack of confidence in the ability and integrity of appointed officials. The work laid out for the board is not only limited, but is hedged about with checks and balances. As might be expected its work cannot be undertaken with the degree of confidence and assurance essential for constructive efficiency.

On account of inadequate power and lack of support from the council, the personnel of the board's commissioners has changed on an average of about once a year since its organization. These men have not been partisan spoilsmen but, with rare exceptions, have been men of unquestioned ability and integrity.

Public Utility Concerns in Los Angeles

The number of utility concerns giving service in Los Angeles are: three steam or "interstate" railroads; two electric (city and interurban) railroads; three incline railways; two express (interstate) companies; three electric light and power systems; four gas systems; three telephone systems; two telegraph systems; eighteen water service systems. In addition to the above the board has a measure of supervision over local express and delivery service, as well as taxicabs and automobiles for hire. Water, gas and electric meters are tested by the board. The gas inspection and testing are done under the direction of the board.

Valuations Made of Utilities

Of the above utilities the board has made more or less complete valuations for rate-making purposes of two telephone companies, sixteen water companies, four gas companies, and three electric light and power companies.

The valuation of the local street railway comprised of something over three hundred and sixty miles of single track, narrow gauge line, was undertaken a year ago with the double object in view of rate

fixing and service requirements and a possible basis on which to base preliminary negotiations looking to the city's undertaking the purchase for municipal ownership and operation.

No valuation of the interurban system and its local lines within the city limits has been undertaken as this line is being appraised for the state railroad commission and it is expected the data required by the board will be available when that is completed.

Rates Fixed

Rates have been fixed for all gas, electric light and power, telephone and all of the water service concerns. In all cases but one the rates fixed by the board have been accepted by the utility service concerns. One water case has gone to court on the board's rates, and has not yet been decided. The company is now getting a rate higher than that fixed at the time by the board, and less than their old rates.

Where protests have been filed and the council has lowered the rates below those fixed by the board, all have been taken into court, except one of little importance, with the following results: In the telephone case, the city lost.

One water rate case is now pending in court. The court granted a temporary injunction and the company is now being allowed to charge the rates originally fixed by the board.

The extra expense in litigation, revaluation, etc., to the city in these cases lost has been about \$16,000 while the gain to the protestants has been apparently nothing.

Practical Results: Rates and Service

The rates fixed by the board have in most cases been lower than those in effect prior to its organization. On the local street car system the fare is five cents with practically universal transfers over the system. On some of the local lines of the interurban system there are fares charged inside the city limits which are not considered entirely equitable. No reduction of street car fares has been undertaken by the board but some of the fares now in effect and the limited transfer situation will have to receive the attention of the board in the near future. Gas rates have been lowered from 80 cents to 70 cents for 1,000 cubic feet with an annual saving of a little

over \$400,000 to consumers. There is a controversy on at the time of writing this article relating to fixing the rate for natural gas recently brought to the city, which may be a repetition of the telephone case above mentioned. The rate fixed by the board is 52 cents. The popular demand is for 30 cents per 1,000 cubic feet. Electric light and power rates have been lowered from an average of 9 cents to 6 cents for light and 5 cents for power per k.w.h. resulting in an annual saving to the consumers of from \$400,000 to \$500,000 per annum. Telephone rates have been equalized and for some classes of service slightly increased. As there are two systems the rates had already been cut by competition to little more than the cost of conducting the business. Water rates have been reduced in some cases. Water rates charged by private companies are high and in quite a number of cases poor service is rendered. The metered rate for private companies is in general from \$1.25 to \$1.88 for the first 1,000 cubic feet and 8 to 14 cents for each additional 100 cubic feet. The rate charged by the city is \$0.75 for the first 1,000 cubic feet and 7 cents for each 100 cubic feet additional.

The service rendered by the local street car system compares favorably with that of any other in the country.

The local service rendered by the system engaged largely in interurban and suburban business is not fully satisfactory on all lines on account of fares and transfer privileges. This system comprises about 1,000 miles of single track in Los Angeles and vicinity. The interurban service is generally good, but in many cases too much standing room is used. There are some matters in connection with this service that will probably have to occupy the attention of both the state railroad commission and the board jointly.

The gas service is generally good. Natural gas has been piped to the city, a distance of 111 miles. For nearly a year past a mixture of natural and artificial gas has been furnished. The mixture is from 40 to 50 per cent natural gas, giving about 150 b.t.u. heat units over the artificial, which must not be below 600 per cubic foot. Under the supervision of the board the number of heat units for artificial gas has been raised from 560 to 622 b.t.u. for the daily average.

The electric light and power are generally reliable and well maintained. The city buys current for street lighting. Telephone service is generally reliable and fairly well maintained. The service from the private water companies is in many cases thoroughly unsat-

isfactory. In some the supply is insufficient, unreliable and hardly fit for use. No permanent relief can be expected in many cases until the city's service is established. Many of these enterprises had their origin in projects for selling real estate. They are practically all operating without a city franchise and the only thing that holds them to their obligation to furnish water is the state law which does not allow the discontinuance of water service, when it has once been established, unless the user voluntarily gives a release.

Complaints

The board receives a large number of complaints on service, bills rendered, treatment accorded the public, etc. As many of these as possible are handled in an informal way by the employees of the department. Generally the rule is enforced that all complaints to receive attention must be presented in writing. The large majority of all complaints are adjusted without formal action and orders from the board. In most cases the utility concerns have shown a willingness to comply with requests from the board to make reasonable changes and corrections in service, bills of charges, etc. There are still questions not well settled that are open to possible controversy affecting the powers of the board and the obligations of the utility concerns.

One of the most important functions of the board is to bring about wherever possible (and it is their earnest endeavor so to do), a better understanding and a more friendly feeling between the patrons and the utilities furnishing service. Complaints are of two kinds, those having a real and those having an imaginary basis. Both should receive impartial consideration. Imaginary grievances are real to the aggrieved party until they are shown to be groundless. Wherever complaints are well founded, they are investigated and the necessary remedies or corrections secured.

City and State Control

The relationship between the city and the state on some matters of jurisdiction where interstate and interurban railroads are concerned has not been finally passed on in all cases. The relations of the board with the state railroad commission are and have been friendly and a spirit of coöperation exists.

The "home rule" situation in California is perhaps unique. The state constitution as amended in 1911 provides that counties, cities and incorporated towns may vote to retain their powers of control and regulation over public utilities. After voting to retain control they can vote themselves under the state railroad commission control. After voting themselves under that control they can vote themselves out again. As to how many times this can be repeated the constitution fails to state.

A constitutional amendment to be voted on next fall, if adopted, will put rate-making in the hands of the state railroad commission. A county, city and county, or incorporated city or town may vote to retain local control and regulation of their utilities. If they fail to retain local control and it once passes to the state railroad commission, it cannot be again recovered.

American cities should have greater home rule rights than they now enjoy. The writer believes that the surrender of local control by a large and live municipality would be a misfortune.

Franchises, Permits and Terminals

The city has generally adopted the policy of short-term grants for franchises limited to twenty-one years with the right of the city to purchase or find a purchaser at the end of five years. Grants for elevated and subway lines may be for forty years with the right to renew for ten years more. The city will have the right to purchase or find a purchaser for the property at the end of the first grant period.

The right to build spur tracks for serving industries, etc., is usually given as a revocable permit, and for a term not to exceed twenty-one years. While the study and design of freight terminals should properly fall within the province of the board, funds have never been available for that purpose. A special commission for the purpose of studying the question has recently been appointed by the council. It is the purpose to bring about, if possible, the unification of all freight terminals with the city, a large if not the dominating and controlling factor.

The Local Transportation Problem and City Planning

It is believed without any question that the greatest need of Los Angeles at the present time is for a well worked out comprehensive city plan. The same can be said of most, if not all, American cities. The problem is an immensely bigger one than working out beauty schemes.

Transportation is an absolute necessity for the existence of the modern city. While that is a fact, no more real forethought is given to it, or provision made for properly providing, and taking care of it, than if it were an unheard or undreamed of city need.

The universal tendency is to concentrate the business district on the one hand and more and more expand and extend the residence districts into the outlying sections, on the other. We build *a solid mass of sky scrapers, fifteen, twenty, thirty and forty stories high on streets that are no wider than country roads*. On leaving the business district we pass by possibly thousands of vacant lots on almost any local transportation line. Every one knows the result, rush hour congestion and long-haul traffic which are now almost hopeless to handle properly and are getting worse every day. What can city planning do to remedy these conditions? A comprehensive plan carried out should undertake to accomplish among other things the following: (1) To limit the height of buildings in the business district to not over six or eight stories, depending on the capacity of the streets, on which they face or into which their occupants find their way, to carry traffic. (2) Encourage and direct the establishment of business and industrial centers outside of the main business center so that large portions of the population can walk to and from their work. Los Angeles is to a degree fortunate in having a hill section lying adjacent to the business district where a large number of its residents can walk to and from their work. On the other hand this same hill, lying as a barrier to the west and north of the business district, restricts and hampers the movement of traffic in and out on the streets available. (3) Control and restrict the laying out of sub-divisions which now goes on beyond any reasonable need or demand; that is, stop the conversion of good agricultural land into poor city property. (4) Adopt a system of taxation that will compel the occupancy and use of what would otherwise remain vacant property. Vacant property as we have it outside the

business and running through the residence districts is little other than a nuisance, if not worse. It results in a needless amount of improvements, not fully used, the costs of which have to be borne either directly or indirectly, by the community at large. Vacant lots past which sidewalks, pavements, sewers, water and gas mains, electric light and telephone conduits or wires and poles, street railways, etc., are built but not used, are factors of economic waste. In other words the service is spread out thin and the used property has to stand the burden of high costs. It seems only a reasonable proposition that land should not be subdivided until it is needed for use and that after it is laid out it should be used.

It is needless to say that these are only a few of the things that should receive attention for correction. While rush-hour congestion is one of the most aggravating, and we might say hopeless, problems we have to contend with, other improvements and utility service are handicapped and suffer from our lack of forethought and planning.

These are factors that are not as fully and generally recognized as they should be. While we are regulating the utility concerns and undertaking to exact good service at reasonable rates we have left real estate exploitation free to create conditions which impose needless burdens on the community.

New Standards of Civic Patriotism

The most blighting influence in retarding progress towards ideals is the element of uncontrolled selfishness. We freed ourselves of the tyranny of the inherited "divine right to rule," only to find ourselves all but enslaved by the tyranny of boss rule backed by so-called special privilege and its more vicious allies. Corruption of government and exploitation of the rights and interests of the citizens through those means have been the general experience of American cities.

While the results have been all but disastrous to representative self-government, this feature has not been recognized and condemned by the popular mind, so much as the burden of discrimination, overcharges, and bad service, which they have suffered. Corruption of government by selfish interests has only been a means to an end.

We have been all but too slow in recognizing this influence on the functions of self-government.

If proper regulation will not remove these influences then we will have to undertake the municipal ownership of those activities that are necessary to the municipality and the absolute eradication of those that are not necessary.

With the wonderful initiative and enterprise of the American people the wonder is that we have thus far done so poorly in what should be our greatest work, well planned city building. If we do not build right and on broad lines, regulation of utilities, however done, can go only a small way toward making up deficiencies resulting from our neglect.

The success of the board of public utilities in carrying on an aggressive and constructive program has not been as great as we might have hoped that it should be. With the limitations and handicaps under which it has had to labor the results attained are more than commendable.

GOVERNMENTAL REGULATION OF ACCOUNTING PROCEDURE

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Governmental regulation of the accounting procedure of public utility enterprises is a means to an end. Like all other governmental regulation of private business accounting, it is employed to assist in enforcing governmental regulation of private business and that in turn is a part of the governmental regulation of human conduct in the interest of the common well-being. The justification of governmental regulation of the accounting procedure of any private business must, therefore, be found in the assistance which it renders in the enforcement of the governmental regulation of private business and private conduct; and that regulation must be approved or condemned by its influence or results in promoting or injuring the interests, welfare and happiness of the great majority. The other papers contained in this volume are, therefore, more fundamental than this since they deal primarily with the moral, legal and economic justification for and expediency of governmental regulation of public utilities when considered with reference to the greatest good of the greatest number. This paper is confined to a discussion of the relation of accounts and accounting to the most successful administration of business and to the enforcement of the governmental regulation of public utility and other enterprises in the interest of the community.

The governmental regulation of a public utility or other enterprise is a social experiment and, like the experiments of chemists and physicists, naturally calls for the establishment and maintenance of orderly and systematic records with reference to such experiments. The governmental regulation of the accounting procedure of a governmentally regulated enterprise is the establishment of standard records for measuring and recording the results of the social experiment involved in the regulation of the business affected. A discussion of the subject matter of this paper may, therefore, with propriety, be introduced by a brief consideration of what may be called,

from the point of view here noted, the records of the social experiment of governmental regulation of public utility and other private business.

A just and proper regulation of any private business, however simple it may be, can be maintained only when and where it is based upon complete and accurate information relating to the business regulated. In all cases that information must be at the command of the governmental officers who have supervision of the regulation and in a nation such as the United States, governed by a democracy, it must be provided for the people generally. These requisites for the just and proper governmental regulation of a private business are, in character, essentially the same as those for the successful and honest administration of a private business by its directors or managers, or those for the efficient and economical government of a state or municipality by those in authority therein. Such administration or government can be attained only when and where complete and accurate information relating to the business of the enterprise or of the state or municipality is at the command of those in places of responsibility or authority.

An apprehension of the fact last stated early led to the use of accounts and the evolution and application of the art of accounting in public and private business. This use and evolution followed necessarily from the purpose or function of the art of accounting. That function is to provide accurate and complete statements of the condition of business and of the results of its operation, and to furnish all other information which accounts can supply for its systematic and successful administration and regulation. The development of modern civilization and the accompanying increase in wealth, with the consequent increase in the volume and complexity of commercial and governmental business, early stimulated, if they did not force, improvements and new applications of the age-old art of accounting. These improvements and applications, in turn, have justified themselves in that they have afforded the wide-awake business manager and governmental official the added information needed in the complex state of modern society for honest and successful administration. The same factors have brought about the application and use of the newer accounting forms and practices as aids in securing what the race has always striven to attain, a just and proper regulation of all business and especially the regulation

of the business of our public utility enterprises. This has been the genesis of modern governmental regulation of the accounting procedure of many kinds of business, including that of public utility enterprises, or, in other words, the governmental use of the forms and procedure of accounting in connection with the social experiment of regulating public utilities.

The governmental regulation of public utility enterprises and the accompanying regulation of their accounting procedure have much in common with the governmental regulation of the business and accounting procedure of banking and insurance companies and other *quasi* trust corporations. Laws for the regulation of these corporations have long been enacted to protect, so far as laws can, the interests of the stockholders, depositors and policy-holders, from the wrongful, incompetent and careless acts of the directors and other officers and to make the officers, directors and stockholders responsible for the safekeeping of the money of the depositors and for the fulfillment of all obligations that have been assumed with reference to the policy-holders. The governmental regulation of the accounting procedure of the two kinds of business mentioned was designed to assist the honest banker and insurance man in complying with the primary regulations of his business and also to aid him, if possible, in a more successful conduct of it. It was further designed to disclose the existence of all careless, incompetent and unbusinesslike acts on the part of directors and other officers and to assist in detecting the beginnings of wrongful acts on the part of those officers.

Some of the governmental regulation of the accounting procedure of the corporations mentioned is direct but more of it is indirect. The corporations are required to make regular and systematic reports upon prescribed forms, and the ready and economical completion of accurate and trustworthy records necessitates the development and use of uniform accounting records and procedure. The accounting regulation calling for such reports is here referred to as indirect, to differentiate it from the more complete regulation which prescribes in detail the number and form of accounts to be employed and the methods to be observed in keeping each account and in summarizing the results and conditions of business as recorded in the accounts.

The governmental regulations of the business and accounting

procedure of public utility enterprises as well as those of banks and insurance companies rest upon the established fact that the evils and losses resulting from the ignorance, incompetence and carelessness of corporation officers are greater and therefore call for more safeguards than those which result from wilful wrongdoing. The unwise and improper acts of corporation employees originating in the factors first mentioned are, however, as a rule, readily disclosed by the formal reports, now very generally required from banks and insurance companies and are beginning to be required from public utility corporations. Hence it may be said that the indirect regulation of the accounting procedure of public utility and other enterprises is designed primarily as a safeguard against the evils and losses that result from the unwise and improper acts of well-intentioned officers. With wise supervision this accounting regulation accomplishes this end and also assists in detecting some of the conditions that result from wilful wrong-doing.

To enforce the governmental regulation of public utility enterprises which forbids specific acts as well as requires certain others, and to ensure the correctness of the reports here mentioned, the governmental inspection of such reports should be accompanied by formal examinations of the accounting records of the enterprise concerned. This examination should be made by experienced and thoroughly trained examiners and accountants. Such examination is necessary to enforce the governmental regulation of the enterprise itself as well as the regulation of the accounting procedure. Furthermore, this governmental examination of accounts is made comparatively easy if the accounts are kept in a scientific and orderly manner and with sufficient detail to provide all the data for a wise, honest, economical and efficient administration. An accounting procedure which provides these data should, therefore, be among the requirements specified in statutes and other governmental regulation of public utility and other business enterprises whose activities are of a *quasi* trust nature. In so far as the governmental regulation of the accounting procedure of these enterprises fails to provide the data mentioned, that regulation falls short of the ideal and is inferior to that which must sometime be attained by the accounts of the honest administrator who has learned to make the largest use of accounting in the conduct of his business and has thus made accounts a handmaid of the spirit of economy and efficiency in business operation.

The wise and complete regulation of any line of business is a social achievement that requires something more than the enactment of a single statute. That enactment, as some one has expressed it, merely establishes the condition for a social experiment. The discussion embodied in the other papers of this volume emphasizes this fact and shows how much more must be done by governments before our various public utilities will be operated in ways that will work the greatest good for the greatest number. In like manner we should recognize the fact that the wise and proper regulation of the accounting procedure of any kind of public utility enterprise is never established by a single statute, nor as the result of the effort of one man or a group of men in a short period of time. Hence in here expressing the opinion that the best accounting procedure now required from public utility enterprises in the United States is far from perfect, the writer does not wish to be understood as going further than to state that the regulation of such procedure, like the regulation of the utilities themselves, is in its earlier and thus necessarily incomplete state. Some illustrations of the slow development of fairly good regulation of the accounting procedure of banking and insurance corporations may aid in avoiding undue criticism of the present accounting procedure prescribed for our American public utility enterprises.

The state of New York early passed laws for the regulation of the business of banking which prescribed a proper accounting procedure and enforced such regulation by systematic examinations. The wrecking of a large savings bank by its officers after this accounting regulation and examination had been in force more than a generation disclosed the imperfection of that regulation and examination with respect to bank receipts and brought about changes that have proved most beneficial and for more than another generation have prevented the failure of a New York savings bank. The earlier accounting procedure, although under state supervision, did not accomplish all that the bank regulating acts had been framed to secure.

Life insurance companies were established in New York before 1850, and the state early assumed the duty of regulating them and to that end had sought indirectly to regulate their accounting procedure by requiring specified reports. But more than a half century after the enactment of the first of these laws, the Hughes inves-

tigation of the New York insurance companies disclosed a lamentable failure on the part of the companies to use the art of accounting in any scientific or complete way to show their success or failure, their efficiency or wastefulness of management. A half century of legislation and of effort on the part of state officials had failed to establish the proper regulation of the accounting procedure on the part of these great *quasi* public institutions.

The problems connected with the wise and proper regulation of the American public utilities, including our interstate, state and municipal transportation, telegraph and telephone companies and our gas and electric light and power companies, are more numerous and complex than those which, with a much earlier beginning, have been solved in the case of our banking and insurance corporations. In like manner, the problems, whose solution must be obtained before an efficient and altogether satisfactory regulation of the accounting procedure of these utilities is attained, are greater, more numerous and more complex than those met with in the case of the business undertakings mentioned.

In the case of these public utilities, the work of securing and enforcing governmental regulation of accounting procedure has been only recently attempted. It is, therefore, hardly to be expected that any accounting procedure enforced by governments with reference to these utilities will have attained the degree of perfection that has been developed with reference to lines of business whose regulation has been so much longer under governmental direction and control. Notwithstanding this fact, it is to be noted that the Interstate Commerce Commission of the United States government and the Public Service Commissions of the state of New York, and those of a few other states, have in recent years made most commendable progress in the preparation and introduction of standard accounting procedure on the part of the utilities subject to this supervision.

A comparison of the work of these governmental commissions with that of the average commercial accountant employed by the utility enterprises demonstrates the superiority of the procedure prescribed by the commissions. The commissions have, therefore, accomplished much under adverse circumstances. The imperfection of their work, and thus the distance that governmental regulation of the accounting procedure of these utilities must, even yet, ad-

vance, before anything like ideal results are attained, may be noted by the following facts. The regulations do not call for, and no public utility corporation seeks at the present time to present, a clean-cut statement of (1) the actual wealth in the possession or control of the enterprise, (2) the amount of the claims of creditors against it, or (3) the amount of the proprietary interests or property rights of its stockholders in the wealth in its possession or under its control.

The Interstate Commerce Commission in its tentative classification of general balance sheet accounts (revision of 1913) which includes a suggested form for a balance sheet has, however, taken a long step forward towards the adoption of a procedure that will secure the above described statements. In the pamphlet referred to, the commission has dropped the incorrect and misleading designation "reserves" from the titles to the accounts to which is credited the current depreciation of property and equipment which is debited to expense. Further, the commission requires that all these "offsets" which have not been balanced by expenditures for replacements shall be shown in the balance sheet on the side of assets as deductions from the book value of the property and equipment, and not on the opposite side among the liabilities and proprietary interests. This procedure is a long way in advance of the practice of the average commercial accountant and is a step towards the preparation of balance sheets that will clearly provide the three statements above mentioned.

A balance sheet prepared as directed by the Interstate Commerce Commission and as described above gives a much less exaggerated statement of the wealth under the control of the railroad than used to be prepared by all public utility enterprises since it eliminates from the aggregate of so-called assets the value of the property and equipment that has been lost or wasted by depreciation. It includes however, as assets the "offsets" to the proprietary interests of the stockholders represented by the debit balances in the three accounts to which are given the designations "unextinguished discounts on capital stock," "unamortized debt discount and expense" and "property abandoned chargeable to operating expenses."

As a rule, the amounts to be reported by railroad companies after these three titles are small but the corresponding amounts included in the balance sheets of other public utility enterprises are considerable. But small or large in amount, the ledger debits re-

ferred to are never assets and never represent any property or wealth in the possession or control of the enterprise and hence, like the depreciation credits previously referred to, they should be shown as the Interstate Commerce Commission directs the depreciation credits as deductions from the items to which they are offsets.

But few of the commercial accountants of the past or the present in the preparation of balance sheets clearly differentiate the liabilities or claims of creditors of the enterprise from the proprietary interests or property rights of the stockholders. These liabilities and rights are both represented by credit balances in the ledger and should be shown on the same side of the balance sheet but should there be fully differentiated one from the other for reasons which have been so forcibly stated by Mr. Charles E. Spriague in his *Philosophy of Accounts* as follows:

1. The rights of the proprietor involve dominion over the assets and power to use them as he pleases, even to alienating them, while the creditor cannot interfere with him or them except in extraordinary circumstances.
2. The right of the creditor is limited to a definite sum which does not shrink when the assets shrink, while that of the proprietor is of an elastic value.
3. Losses, expenses, and shrinkage fall upon the proprietor alone, and profits, revenue and increase of value benefit him alone; not his creditors.

No differentiation of the claims of creditors from the rights of stockholders is prescribed for railroad balance sheets, by the Interstate Commerce Commission nor by other American public utility commissions so far as is known to the writer, and hence the balance sheets prepared in accordance with the instructions of these commissions do not make any clear-cut exhibits or statements of the creditors' claims as distinct from the stockholders' rights, and the latter are exaggerated by the amount of the three classes of offsets shown after the titles to which attention has already been called.

The latest Interstate Commerce Commission's instructions for balance sheet statements present a better classification of the credit items of the ledger than previously prescribed and a far better one than is usually shown by the balance sheets arranged by commercial accountants. The physical valuation of railroad property now begun by the Interstate Commerce Commission will naturally lead to clearer and more exact balance sheet statements along the lines that will cause a differentiation and more exact statement of the actual

wealth of utility enterprises—the actual claims of creditors and the actual property rights of the stockholders. Such accounting information will prove of great value in the taxation of public utility enterprises, in establishing rates for the utilities furnished and in securing a better administration of the utility corporations. Under the wise and conservative leadership of the Interstate Commerce Commission and other commissions the country is making substantial and steady progress towards the adoption of an intelligent and just accounting procedure.

ACCOUNTING IN PUBLIC SERVICE REGULATION

BY FRANK W. STEVENS,

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In the practical working of commissions charged with regulating the operations of corporations engaged in selling service to the public, commonly known as public service corporations, scientific accounting is indispensable, and is the substantial foundation upon which the whole structure of regulation must be based. This fundamental truth is not thoroughly appreciated by either the public or the corporations interested, but a careful analysis of the practical working of regulation will demonstrate the undeniable correctness of the assertion.

Public service regulation as it now exists in the large part of the states covers the three great subjects of capitalization, rates and service. The term capitalization embraces the authorization by the commission to issue stocks, bonds, or other long time securities for the purpose of obtaining money for proper capital purposes. In case the application is for leave to issue such securities for the purpose of obtaining money for construction yet to be performed, the amount required is necessarily the subject of estimate. No method can be devised for determining in advance the precise cost of any physical work. The amount authorized by the commission, therefore, is necessarily approximate only to the real cost; it may be greater or less than such cost. The important point in this class of applications is to know, when the work is performed, how much has been really expended thereon and whether such expenditures have been made in a proper manner. If the cost proves to be greater than the estimate, additional funds must be supplied and if the cost proves less than the estimate, it then becomes necessary to determine what use or application should be made of the excess amount. In this class of applications nothing is easier than for the corporation if it be so minded to obtain authorization to procure money for one purpose and, when so procured, to use the money for other purposes than those specified in the authorization. Not all corporations would be guilty of this conduct, but some have been and doubtless others will be. This

fact and the necessity for supplying additional money if any be required and disposing of the surplus money if any there be, make it imperative that the authorization order shall provide for specific and detailed reports of the disposition made of the money, which reports, to be of any value, must be based upon accurate accounting. Such reports can be checked and their truthfulness verified only in cases where the accounting has been according to a proper system, enabling the examiner to verify the statements with complete accuracy.

In another class of capitalization cases the expenditure has already been made by the corporation from income or from moneys obtained by the issue of short-time securities for which authorization by the commission was not required by law. The company seeks by the issue of bonds to obtain funds to reimburse its treasury for the expenditure made, or to obtain the means of liquidating short time notes. A case of this class may cover expenditures running over a series of years and embracing many different classes. Unless there has been careful accounting during the progress of the work, it is impossible for the commission to ascertain whether the expenditures were in fact made for capital or other purposes. This is particularly true in the case of betterments which generally involve expenditures for replacements. Replacements are chargeable to operating expenses and are not capitalizable. Unless the corporation is required to observe with great care strict accounting rules with reference to replacements, it is possible in such an application to procure the capitalization of matters which should have been charged to operating expenses. In the case of corporations whose financial affairs are not in the most flourishing condition, there is great temptation to do this, especially if there appear to be urgent reasons for maintaining a given rate of dividend. A proper system of accounts rigidly enforced is essential and indispensable in all these and other cases which it is unnecessary to describe at this time.

In rate making a proper accounting is also indispensable. The theoretical basis of rates is that the corporation is entitled to such rates as will enable it to earn its operating expenses, a fair return upon the amount of its investment and such further return as will compensate it for property worn out or destroyed in the service. Unless its operations produce earnings to an amount sufficient for all these purposes, the corporation is on the sure road to bankruptcy. That bankruptcy may be delayed until its property or some sub-

stantial part thereof is worn out. If it then finds that it has no funds in hand, derived from earnings, with which to replace such worn out and destroyed property, its condition at once becomes serious. As to operating expenses the corporation is not fairly entitled to charge the public with extravagant expenditures or for inefficiency in operation. Accordingly, wherever it is possible in rate making, it is incumbent upon the commission to inquire into the operating expenses and ascertain whether they are such as should properly constitute a charge against the public. Accounting alone will not enable the commission to determine any such question, but without accounting the effort would be hopeless. With accounting supplemented by other investigations, a result reasonably approximate to correctness may be obtained.

The wearing out or destruction of property in the public service, involving as it does the element of depreciation, is at present the most difficult and obscure problem in accounting. It is obvious that no accounting rule can be laid down for the handling of depreciation without taking into account the facts which constitute depreciation, that is to say, how long any given piece of property will continue fit for the service. The life, as it is termed, of property in service is variable for articles of the same class. It is variable in different localities. It varies, of course, with the amount of service required in a given period of time. It follows that the experience of one company may be different from the experience of another and it is also true that the experience of the same company for different periods of time may be different. No records of experience have been preserved which would enable a commission to make any hard and fast rules with regard to the amount of depreciation which should be written off annually. This amount at best can be only an approximation and such approximation must be made from the experience of the corporation itself. If the corporation should create too large a depreciation reserve, something which is not unknown, the result is that the public unjustly suffers in the rate. If the corporation does not create a sufficient reserve, sooner or later it must suffer when its plant needs substantial renewal. It is not the purpose at this time to point out the various intricate problems arising in the treatment of depreciation. It is needful only to say enough to call attention to the fact that depreciation is essentially an accounting problem, and one which must be dealt with in some manner in the accounts of

the corporation, and the manner in which it is handled should always be known to and approved by the commission which undertakes to regulate rates.

This problem of depreciation is also in evidence in cases of capitalization, especially where the corporation seeks to reimburse its treasury for moneys expended from income. It is impracticable in many cases to determine how much has actually been expended for capital purposes without tracing out and thoroughly checking the treatment accorded by the corporation to depreciation.

In service matters it is plain that no service can be required which the revenues of the company do not justify. This does not mean that no service should be required which does not give a return equal to its cost, including in cost all proper overhead charges. Upon this point great difference of opinion exists and it is not designed to bring it into discussion at this time. A sufficiently accurate statement probably is that there is such a relation between service and revenue as to make it imperative to consider the cost of a new service which the commission contemplates requiring and of an existing service which the company contemplates discontinuing. It may very well be that such a service is one which the company is bound to render irrespective of the profit or loss resulting therefrom; and on the other hand it may be such that, unless the company can reimburse itself for operating expenses out of that particular service, it should never be required. It requires no particular discussion to demonstrate that the cost of service is an element to be considered in all cases. There is, however, nothing harder than to ascertain, where a variety of service is afforded, especially in railroad practice, the cost of a given service. It is made up of so many elements and is so intertwined and commingled with the cost of other services that it is at times beyond the power of any accounting schemes which have yet been devised to ascertain such cost with accuracy. Nevertheless, although perfection may not be obtained, the best approximation which can be made is always desirable if not indispensable.

One most important element of regulation is that there should be complete publicity of all corporate financial transactions. This is essential for the general public as well as for the stockholders and creditors of the corporation. Long and bitter experience has taught the truth of this observation to all; and no one now disputes either the propriety or the necessity of such publicity. There can be no

true publicity without correct accounting. Balance sheets as usually made up and published are worthless, not to say misleading, unless the basis upon which they are prepared is known and that basis is rigidly adhered to. In many cases it is easy for a skilled accountant to determine by glancing at its balance sheet that a corporation which apparently is in a prosperous condition, is really insolvent. The general public cannot do this. But very few people outside of trained accountants know how to read a balance sheet. For many years in one of the states, railroad corporations were required to report to the state certain details of their corporate transaction. They were not required, however, to keep accounts by a uniform system, nor were they required to report a balance sheet. Investigation has demonstrated that, because of these facts, the reports thus made to the public were practically worthless in many cases for the purpose of determining the true financial condition of the corporation. No one can tell the real condition of a corporation, not even its own directors, without knowing how depreciation is handled in the accounts.

From these considerations it follows that to make publicity of substantial value, the accounts of corporations of a given class must be kept uniformly and according to a prescribed system. It is not always easy for the most skillful accountant to determine the proper classification of an expenditure, but unless we know what system of classification the accountant is following we can know but little or nothing of what his accounts really mean.

Public service laws generally require that the commission shall keep informed as to the financial condition of corporations under their jurisdiction. It is obvious that they cannot obey such a provision of law unless they have control of the accounting methods of the corporation. This one fact makes it imperative that commissions should prescribe uniform systems of accounts. It is greatly desirable that these systems should be uniform throughout the country and should not vary in essential matters in different states. This is clearly demanded for the protection of the investors. Corporate reports and official compilations of such reports are not understandable except as the system of accounting from which they are compiled is known. Once a uniform system of accounting is adopted and prescribed it is generally assumed that it will be observed correctly by the corporations to which it applies. This is not the case. Large

numbers of the managers of minor corporations have never received any training in accounting and think that it is nothing but book-keeping; have no conception of accounting problems and remit the whole matter to some low salaried bookkeeper. They do not understand the real function and importance of proper accounting in public service regulation and, what is most vital to them, in many cases, they do not understand its importance in their own corporate affairs. A bookkeeper with no training and inadequate experience becomes confused and discouraged and the whole matter is allowed to drift along in an uncertain shape until the corporation is obliged to make some application to the commission involving an examination of its accounts. The real situation is then discovered and oftentimes herculean efforts are required to pull the corporation out of the chaos into which it has thrown its own accounts. This is one of the practical results of the introduction of a new and uniform system of accounts without proper instructions and assistance given by the commission to the corporation.

In the case of large corporations the importance of accounting is usually most thoroughly understood, but in the case of some, their past financial history has been such that the introduction of a new system entails a severe wrench and is likely to bring to the front matters which they believe it would be far better to have unknown. There is with such corporations at times a severe struggle over the proper accounting disposition of matters which lie near the line of debate.

Reports to the commission are, of course, based upon the theory that accounts are kept in accordance with the prescribed system and the report is so drawn as to call for information which may easily be tabulated from the books of the corporation if correctly kept. Whenever the corporation has not kept its accounts in this manner, the making out of an annual report is an occasion of great trouble if not of mental agony. Some answer must be given to the questions, and the answer which would be perfectly easy if the books had been properly kept is almost impossible of ascertainment if they have been improperly kept. The not infrequent result is that the annual report is not much more than a series of guesses and conveys no reliable and accurate information upon many vital points. Checking in the office of the commission will disclose this and there follows a long correspondence extending through many months in what is frequently an

endeavor to get the correct answer and make the figures throughout the report harmonious and correct.

The situation here briefly outlined justifies the conclusion that there should be a periodical examination of the books of the corporation for the purpose of determining whether they are kept in accordance with the system. Such examination, when properly handled by an intelligent examiner, is of great assistance in enabling the smaller class and even many of the larger corporations to understand their own affairs. It is indispensable if correct reports and proper publicity of the affairs of the corporation are to be had. It is a melancholy fact that, without a prescribed system of accounts, the bookkeeping and accounting of large numbers of smaller corporations are deficient in the extreme. The writer has known of one instance of a street railroad corporation with operating revenues of approximately \$100,000 annually, the entire bookkeeping of which consisted of an ordinary pocket bank pass book to show receipts, the stubs of the check book showing the disbursements and the time book showing the time of the men employed. This indeed was plain and simple, but the result was that the corporation itself had no proper understanding of its own affairs and the results which might be expected from management followed through a series of years. Legislators who are desirous that publicity should be enforced in the case of public service corporations should understand that publicity has no value without correctness; that correctness can only be attained by proper accounting and that proper accounting usually follows only from careful and systematic supervision, and that such supervision demands regular and careful examination of the books of the corporation. If such examination could be had, it would not make an end of corporate mismanagement, but that it would be a most important step in the improvement of conditions there can be no doubt.

EFFECTS OF THE INDETERMINATE FRANCHISE UNDER STATE REGULATION

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The past history of public utility operation under franchises granted by municipalities or other public authorities is largely a history of mistaken policy resulting in harm to one or the other party or, more often, to both parties to the contract. A great variety of franchise provisions have been tried in innumerable combinations and it would seem that every type from the short-term franchise to the perpetual franchise has been tried under a wide range of conditions and circumstances. The experience has been on the whole an unfortunate one leading to a deep-seated distrust on the part of all concerned. A great conservatism has grown up so that, while the dissatisfaction with the old form of franchise is general and shared alike by the utilities and the public, past experience would cause them to look with suspicion upon any proposed change in practice. Thus when Wisconsin wrote the indeterminate permit provision into her public utilities law, the companies were slow to take advantage of it, fearing a possible new menace to their investment; and on the other hand the municipalities or the general public were equally cautious in their attitude toward the adoption of the new policy. Indiana included in its public utilities law the indeterminate permit provision as it was originally enacted in Wisconsin. As a result of its recent adoption by these two states, the indeterminate permit has attracted the renewed attention of every one interested in public utilities or public utility regulation. The general attitude toward the indeterminate permit is that it is a new thing and time alone can prove the wisdom of its adoption, overlooking the fact that the indeterminate franchise was in use long before it was incorporated in the Wisconsin utilities law.

The Indeterminate Franchise in Massachusetts

The earliest franchises granted to street railway companies in Massachusetts are of this type and its use has been continued throughout the state, down to the present time.¹ The parties to a term franchise attempt to foresee and provide for all possible contingencies that may arise during the term specified in the franchise. Such franchises are long and involved and yet prove to be inadequate and a restriction on progress and normal development. The franchise adopted in Massachusetts is a simple "grant of location" omitting all technicalities, reservations and safeguards. It contains no fixed time limit but provides for revocations at the will of the local boards.

In 1898 a special committee, appointed by the Massachusetts legislature, made its report on "Relations Between Cities and Towns and Street Railways." This committee did not depend upon secondary sources but made its own investigation of actual conditions in this country and in Europe. Extracts from this report follow:

A more fixed tenure of franchises is, however, by the terms of the act creating the committee, one of the two points it is especially instructed to consider. The substitution for the present indefinite concessions of a specific and binding contract, covering a fixed term of years, setting forth the rights and obligations of the parties thereto and containing a rule of compensation for the purchase of the property in case of failure to renew, at once suggests itself as a measure of reform; and yet, in the course of the protracted hearings before the committee, it was very noticeable that no such charge was advocated by the representatives of the municipalities or of the companies, nor, apparently, did the suggestion of such change commend itself to either. Some amendments in details of the existing law and partial measures of protection against possible orders of sudden ill-considered or aggressive revocations were suggested, but it is evident that, while the municipalities wanted to retain as a weapon—a sort of discussion bludgeon—the right of revocation at will, the companies preferred, on the whole, a franchise practically permanent, though never absolutely certain, to a fixed contract tenure for a shorter term, subject to the danger of alteration at every periodic renewal. . . .

There is probably no possible system productive of only good results and in no respects open to criticism; but, in fairness, the committee found itself forced to conclude that the Massachusetts franchise, which might perhaps not improperly be termed a tenure during good behavior, would in its practical results compare favorably with any. . . . The investigations of the committee have not led its members to believe that the public would derive

¹ *Relations Between Cities and Towns and Street Railways*. Massachusetts Special Committee, Charles Francis Adams, Secretary (1898), p. 17.

benefit from the substitution of any form of term franchise now in use in place of the prescriptive Massachusetts tenure."²

The committee speaks of this franchise as having given satisfaction for half a century. Some changes were suggested, however. (1) Local authorities should be granted explicit power, thereafter, to impose such terms and conditions as they deem the public interests demand. (2) Companies should be protected from new and perhaps unreasonable conditions sought to be imposed by way of alterations and extensions. (3) Companies should be granted the right to appeal from revocation to the board of railroad commissioners. (4) Moreover, the "grants of location" while providing for revocation at any time did not provide for purchase by the municipality at a fair compensation and the committee recommends that such a provision be incorporated.

Adoption by the Federal Government

The indeterminate franchise has been adopted by the national government. All franchises granted by Congress to public service corporations operating in the District of Columbia, Porto Rico and the Philippine Islands are indeterminate, subject to amendment or repeal at any time.³ The use of this type of franchise has been extended to the various departments of the federal government. The water power permit granted in the department of the interior to the International Power and Manufacturing Company for the development of a large power project on Clark's Ford, Pend d'Oreille County, state of Washington,⁴ is an example of such franchise policy. The permit is indeterminate but revocable after due notice and opportunity for hearing, for violation of the terms of the permit, of the provisions of the general regulations, or pursuant to the provisions of the act of Congress of February 15, 1901.⁵

² Ibid., pp. 18, 20.

³ *The Indeterminate Franchise for Public Utilities*, Report by Commissioner Milo R. Maltbie, Chairman Public Service Commission, First District, pp. 25-28.

⁴ *Development of Water Power*, Senate Document No. 147.

⁵ 31 Stat., 790.

Chicago Traction Agreements

Since it has gained considerable attention among those interested in traction problems, the franchise agreement existing between Chicago and the street railway companies may be cited as another example of the indeterminate franchise. The report of the Chicago Street Railway Committee on "Public Control and Duration of Grants" in 1900 says:

The street railway commission believes that the definite term grant, whatever its duration, is open to serious objections. It is of opinion that a grant of indefinite duration, but subject to termination at any time upon certain conditions, one of which should be the taking of the property of the grantee at a fair valuation, would be productive of much better results.

This is not a complete account of the extent of the adoption of the indeterminate permit. These examples, perhaps the best known, have been given to show that it is not an untried measure. The main object of this article, however, is to consider the use of this form of franchise under state regulation of public utilities.

Wisconsin Law and Practice

Naturally Wisconsin is the chief source of information in regard to the indeterminate permit provisions in state regulation of public utilities, the effect on the companies operating under such a permit, the benefits to the consumers or the public and, in general, the legal aspects of its adoption.

The law, as originally enacted, gave the companies the right to surrender their franchises and receive in lieu thereof indeterminate permits, fixing a definite time limit within which such action could be taken. Less than one in ten of the public service corporations availed themselves of the privilege.⁶ Later legislation extended this time limit and by amendment in 1911 every franchise was, without action of the company, "altered and amended as to constitute and to be an 'indeterminate permit.'"

Commissioner Roemer, in commenting on the reluctance of the companies to surrender their franchises, states the chief objections offered by the utilities, as follows:

⁶ *Some Features of State Regulation of Public Utilities*, by John H. Roemer, Member of the Wisconsin Railroad Commission, p. 22.

(1) A doubt as to the legal right of the directors and stockholders to make the surrender without the consent of the bondholders whose mortgage security covers and includes the franchises of the corporation, (2) the practical impossibility of ascertaining all the bondholders and acquiring their consent, and (3) the erroneous, though perhaps not ill-founded, conception of the value of such franchises.⁷

Similar objections have been urged by companies when the adoption of indeterminate permit was discussed in Indiana and Illinois. Commissioner Roemer, a lawyer whose long experience as a member of the Wisconsin commission makes him one of the highest authorities in this field, has this to say in answer to all such objections:

As all secondary or special franchises granted directly or indirectly by the legislature are non-exclusive, subject to eminent domain by municipalities, and resting entirely upon the good faith of the people of the state, as they may be repealed at any time by the legislature, I can see no element of value in such franchises that makes them a more desirable acquisition of a public service corporation than the practically perpetual exclusive franchises provided by the statute.

The legal question involved in the surrender of the franchise without the consent of the bondholders has never been decided by the courts. It is now presented before the district court of the United States in an appeal of certain bondholders of the Oshkosh Water Works Company to set aside the order of the Wisconsin commission in the matter of the purchase of the Oshkosh Water Works by the city of Oshkosh.

State commissions, delegated by the legislature to require public utilities to give adequate service at just and reasonable rates, have made rulings⁸ contrary to the provisions of franchises between the company and the municipality and between the company and its customers. Such decisions have been upheld by the courts.⁹ In view of such decisions, it would seem that, regardless of any possible

⁷ *Supra*, p. 23.

⁸ *Ashland vs. Ashland Water Co.*, 4 W. R. C. R., p. 305; *City of Washburn vs. Washburn Water Works*, 6 W. R. C. R., 95; *City of Neenah vs. Wis. Tr. Lt. H. & P. Co.*, et al., 6 W. R. C. R., 401, etc.

⁹ *Greenwood vs. Freight Company*, 105 U. S., 13, 19; *City of Ashland vs. Wheeler*, 88 Wis., 607, 616; *Milwaukee El. Ry. & Lt. Co. vs. Wisconsin Railroad Commission*, 142 N. W., 496; *Phillipsburg Horse Car Railroad Company*, N. J., *sup. ct.*

advantageous provisions that may be included in a utility's franchise, there is little to lose and much to gain in the surrender of the franchise for an indeterminate permit under regulation similar to that provided in Wisconsin.

In decisions and public addresses¹⁰ the Wisconsin commissioners have discussed various features of the indeterminate permit and have pointed out the advantages accruing to the company and the public.

In the Appleton case, the commission holds that the indeterminate permit is

more valuable than the ordinary special franchises, because the company now has a legally protected monopoly and is subject to no different supervision and regulation than it would have been had it continued to operate under its original grant. Furthermore, its investment is now protected not only against the consequences of competition, but also against the possibility of total loss on the expiration of the original grant. It can never be deprived of its property except on the payment of the fair value thereof by the municipality.

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The indeterminate permit under the Wisconsin law and practice is explained in a later decision.

By making a surrender of its franchise and accepting in lieu thereof an indeterminate permit, a public utility acquires, in effect, a legally protected monopoly and the right to continue its public service indefinitely. Such monopoly can not be destroyed except it be established that public convenience and necessity require a second public utility to engage in the same business in the municipality. By extending its plant to meet the public exigencies as they arise, and by discharging its public functions properly, a public service corporation may maintain its monopoly of the business as long as it continues operation. Neither can its enjoyment of such monopoly nor its right to remain in the public service be terminated by the municipality, except upon payment to it of "just compensation" for all its "property actually used and useful for the convenience of the public." As a consideration for the valuable privileges thus guaranteed, the law provides that the term of the license

¹⁰ *Wisconsin Public Utilities Law, Three Addresses* by B. H. Meyer, pp. 19-21, 30-31; "Commission Control of Public Utilities," by John H. Roemer (*Electrical World*, Sept. 13, 1913, p. 532), and "Regulation vs. Profit Sharing," by Halford Erickson (*Aera*, p. 797-799).

¹¹ *City of Appleton vs. Appleton Water Works Co.*, 5 W. R. C. R., 215, 284-285.

or franchise authorizing the maintenance and operation of the plant be determinable at the will of the municipality.¹²

The legality of the indeterminate permit has not been questioned by the Wisconsin courts. The supreme court has held that all the conditions and limitations of the old contract have been extinguished and an exclusive privilege to operate has been secured by the utility subject only to the conditions and limitations of the public utility law.¹³

Indiana

Of Indiana there is less to say because of the short time during which the law has been in operation. The law leaves the acceptance of an indeterminate permit optional with the utility fixing a limited period within which to make the transfer, as in the original Wisconsin provisions. In an address¹⁴ by Judge J. L. Clark, member of the commission, it is pointed out that the commission's power to regulate utilities is not dependent upon their acceptance of the indeterminate permit. To the company he points out the advantage of the safety of investment, the ease with which the right to develop and extend the plant and system may be secured and the protection from competition. Protection from competition of a municipal plant can only be secured under the Indiana law to those utilities operating under an indeterminate permit.

Judge Clark has also seen fit to answer the objection usually raised by the companies. He states:

The question has been raised as to the proper authority to execute the written surrender of a franchise. Some have contended that it requires the action of the stockholders and some have even contended that there can not

¹² In re Appleton Water Works Co., 6 W. R. C. R., 97, 119.

Note. In the Appleton case and in a number of valuation cases the commission has held that an indeterminate permit does not have any value which can be included in a valuation for rate making purposes or in fixing the just compensation to be paid in case of purchase by the municipality.

¹³ State ex rel Kenosha Gas & Elec. Co. vs. Kenosha Elec. Co., 145 Wis., 337; Manitowoc vs. Manitowoc & N. T. Co., Id., 13; La Crosse vs. La Crosse Gas & Electric Co., Id., 408; Calumet Service Company vs. City of Chilton. Decision of the Wisconsin supreme court.

¹⁴ "The Indeterminate Permit," by Judge J. L. Clark, in *Fifth Annual Proceedings of the Indiana Electric Light Association*, pp. 26-39.

be a surrender so long as one stockholder withholds his consent, while still others go so far as to contend that the assent of bondholders must be obtained. These are all open questions, but it would seem that the procuring of a franchise for a corporation is the same as any other business transaction and may be handled entirely by the board of directors and the officers who execute their orders. Certainly bondholders can not be injured by surrendering a franchise of limited life and accepting one of indeterminate length of days.

New York

Commissioner Milo R. Maltbie made a report to the New York Public Service Commission, first district, upon the advantages and disadvantages of the indeterminate franchise. He discussed the bad effects of the short-term franchises which he says "have bound the industry so tightly that it could not progress or expand to meet the needs of the community," and of the long-term or perpetual franchises which have stood in the way of proper regulation. "The indeterminate franchise," he says, "in the main avoids these, and combines the desirable features of the short-term franchise by protecting public interests and of the perpetual franchise by stimulating private initiative. In one form or another it has been tried in many cities and found satisfactory."¹⁵ In this report he does not urge its adoption but aims to report the whole question of franchises and leave it open for later decision. In 1909, however, the legislature, largely through Commissioner Maltbie's efforts,¹⁶ amended the rapid transit act so as to provide for long-term franchises revocable at any time after the expiration of ten years upon the purchase of the property. Under this provision contracts have been drawn which are indeterminate and subject to regulation, for example the franchises of the McAdoo tunnels.¹⁷ In Commissioner Maltbie's report, above mentioned, it is suggested that certain provisions should be included in an indeterminate permit. He advises provision for sale to another company as well as to the municipality. Other writers have advocated fixing the purchase price in advance, amortizing the original cost from earnings and various other provisions. These matters are either amply provided for or are entirely unnecessary and harmful under proper state regulation.

¹⁵ *The Indeterminate Franchise for Public Utilities*, by Milo R. Maltbie, p. 4.

¹⁶ Wilcox, *Municipal Franchises*, pp. 239-40, 518-551.

¹⁷ *Supra*, p. 527.

Commissioner Maltbie alleged that, should the municipality exercise its right to purchase a utility's property before returns have been received sufficient to offset losses to capital either in the original construction or a subsequent extension of its plant or system, the commission or other arbitration body should make allowance to cover such losses to the company. Such an allowance should be taken into consideration in every purchase value, and this is the practice of the Wisconsin commission.

Other States

That public utilities are monopolies, natural monopolies, which should be protected from competition and all unnecessary risks to capital eliminated, is the first step to be thoroughly recognized by those preparing the legal basis for state regulation. This is the fundamental principle which has led to the adoption of an indeterminate permit provision. Wisconsin and Indiana are the only states that have the indeterminate provision in their laws and Massachusetts has recognized its advantages and adopted it in practices. But this is not all. The fundamental principle of protected monopoly for public utility enterprises is more widely recognized and its recognition is becoming more general and is being more perfectly provided for. In the following states power has been given the railroad or public utilities commission to protect a company in a monopoly of its territory against a would-be competitor by requiring both private and municipal utilities under its jurisdiction to secure a certificate of public convenience and necessity from the commission before beginning operations: New York, Pennsylvania, Wisconsin, Indiana and Maryland.¹⁸

The following states provide such protection only as against the competition of private companies: Arizona, California, Colorado, Idaho, Illinois, Kansas, Maine (referendum now pending), Michigan, Missouri, New Hampshire and New Jersey.

No provision is made for such protection in Georgia, Oklahoma, Connecticut, Montana, Nevada and Rhode Island; and the Vermont law states that competition is not to be restricted.

¹⁸ Baltimore is not required to obtain such a certificate before providing a municipal competitive plant.

In some instances as in Illinois and Missouri, the first draft of the bill provided for complete protection, that is, as against both private and municipal competition. Then interference came in and such terms were nullified or modified. The experts who draft the bill usually know what is best for the companies and the public. What is needed is more intelligent conception of economic facts upon the part of the legislatures enacting public utility laws.

The Georgia commission recognizes that its lack of jurisdiction to protect utilities from unnecessary competition is a great mistake and, in the recent Macon case,¹⁹ has discussed the need for such powers and expressed its intention of asking the legislature to grant it the necessary jurisdiction. The Oklahoma Corporation Commission has made a similar request for jurisdiction to limit competition and unnecessary duplication.²⁰

Constitutional Restrictions

In a number of states special laws or constitutional provisions limit the term of contract to from twenty-five to fifty years. And the question has been raised as to whether the indeterminate permit can be used in such states without a revocation of the law or the passing of a constitutional amendment.

The new constitution adopted in Michigan in 1908, effective January 1, 1909, limited the franchise period to thirty years. The city of Detroit has been granting "day-to-day" permits which are in reality indeterminate permits, and the question has been raised as to whether such permits can be granted under the constitutional limitation. This matter was discussed by Mr. James V. Oxtoby in a paper read before the Michigan Electric Light Association at Ottawa Beach in August, 1913, in which he says:

If the meaning of the provisions in the constitution is that no term franchises can be granted by a municipality for a longer period than thirty years, then in my judgment it does not prevent the granting of special indeterminate permits. If it means that every franchise must be a time franchise, and must expire at some particular time, then we cannot have indeterminate permits.

¹⁹ Decided February 24, 1914.

²⁰ 1912 *Annual Report*, vol. I, p. 11.

This question is before the supreme court of the state of Michigan in the case of *Barton L. Peck vs. Detroit United Railway*. Arguments and briefs have been submitted in this case. A decision in the matter will be of general interest as it will give some indication as to how serious these constitutional limitations will be in affording a delay to the general adoption of the indeterminate franchise.

Term Franchises versus Indeterminate Permit

Under state regulation, which assures the public adequate service at reasonable rates, a protection of the monopoly from competition and the elimination of all possible risks to capital invested result in benefits to all parties concerned. "Without protection of such monopolies only a limited supervision of their affairs by public authorities can be morally justified. This is almost axiomatic."²¹

Those advocates of the short-term restrictive franchise will discover sooner or later that burdens imposed upon public service companies rest heaviest upon the public served and that in order to secure the best service at the lowest rate the company must be given every advantage to develop and prosper. The Massachusetts committee sums up the situation in Great Britain as follows:

The term franchise has there been universal since 1870 and the rights of the municipalities are so very carefully protected that their best interests have been systematically sacrificed. The municipalities have, in fact, been so afraid they would be outbargained that they have as a rule fairly overreached themselves; and now, after a lapse of twenty years, they are naturally served by undeveloped lines, with antiquated appliances, simply because they made it the distinct interest of the companies operating those lines to provide nothing better.²²

They conclude that the indeterminate permit, even without the provision for the payment of a just compensation upon revocation of the grant by the municipality, has given a greater security to capital and induced markedly better service conditions.

²¹ *Some Features of State Regulation of Public Utilities*, by John H. Roemer, p. 22.

²² *Relations Between Cities and Towns and Street Railways*, Massachusetts Special Committee, Charles Francis Adams, Secretary (1898), p. 19; see also "Municipal and Private Operation of Public Utilities," in *National Civic Federation Report*. Part I, vol. I, p. 464.

Operating under a franchise which is to expire at a certain time, the company is slow to make necessary expenditure for additions and betterments to the property as this means putting additional capital to the risk of partial or total loss. As a result, when the time arrives for settlement of the question of an extension of the franchise, the company is in a very disadvantageous position with its plant inadequate and its service open to severe criticism. The more exacting the terms imposed on the company the more exaggerated are the conditions. For example the Berlin street railway franchise (1891) provided that after a number of years street construction of all kinds was to revert to the city. The company was, therefore, forced to see that as little property as possible should be turned over to the city at the company's expense.

The utility is forced to connive for control in local politics. Litigation necessary to enforce contract terms or to meet circumstances which have not been provided for in the contract is a constant source of expense and usually results in bitter local feuds.²³ It is such conditions fostered by the term-franchise which are to be corrected by the indeterminate permit.

In the Calumet case, the Wisconsin supreme court held that the intent of the law is

to displace the old situation, in its entirety, with all its complications, the growth of years, and we may add, with all its bitter controversies, the like of which is pictured in this case, and to substitute a new situation, all looking to unity, in practical effect, of a multitude of diverse units corresponding to the many outstanding franchises, and others in prospect, harmonizing by making them referable to a single standard, to wit: the public utility law, and to an ultimate single control, to wit: control by the trained impartial state commission, so as to effect the one supreme purpose, i.e., "the best service practicable at reasonable cost to consumers in all cases and as near a uniform rate for service as varying circumstances and conditions would permit—a condition as near the ideal probably as could be attained." Certain, that great object might well have aroused legislative ambition to a high plane, and inspired legislative wisdom accordingly, as it did in fact. Completeness of the law, so far as tested, and its success under the efficient conservative administration of it by the commission, bear witness to that. As, in effect, suggested in the LaCrosse case, evident purpose of the law to produce the ideal

²³ *The Causes and Effects of a Public Utility Commission*, by John H. Roemer, pp. 4-5; *Wisconsin Public Utilities Law, Three Addresses*, by B. H. Meyer, pp. 19-21; *The Indeterminate Franchise for Public Utilities*, by Milo R. Maltbie; *Regulation vs. Profit Sharing*, by Halford Erickson.

condition indicated, and the means designed to that end, are so plain, and, we may add, so legitimate from all constitutional viewpoints heretofore suggested, or reasonably apprehended, and from all viewpoints of public and private economy and sound public policy, that, if to leave the door open where there is an existing privilege covering the field, as in this case, to municipal invasions to any extent, would greatly disturb the harmony of the system the legislature purposed constructing, and prevent the full accomplishment of the end sought to be attained, judicial construction, if that were necessary to determine the meaning of the law, should rather lean toward preventing such result. . . .²⁴

²⁴ Calumet Service Company *vs.* The City of Chilton. Decision of the Wisconsin supreme court, pp. 25-26.

SHOULD THE PUBLIC UTILITIES COMMISSION HAVE
POWER TO CONTROL THE ISSUANCE
OF SECURITIES?

BY JOHN M. ESHLEMAN,

President, Railroad Commission of the State of California.

Inasmuch as this volume is devoted to a discussion of *State Regulation of Public Utilities*, and as I am not informed whether the issue to be discussed is the propriety of regulation of utilities at all, or, admitting the propriety of such regulation, whether to state or to municipal authorities should be accorded the right of regulation, I am somewhat at a loss how to attack the subject upon which I have been requested to contribute a paper. I shall assume, however, that it is desired that I discuss the issue whether the control of the issuance of securities should be assumed at all by whatever regulatory authority to which the work of regulation is entrusted.

The propriety of the regulation of securities of utilities, with particular reference to railroads, was the subject of a report to the National Association of Railway Commissioners at its annual session in Washington, October 28 to 31, 1913, by the committee on railway capitalization. The report of this committee advocating regulation of securities of railroads by the Interstate Commerce Commission was adopted, but not without considerable opposition. It was not there urged, however, by any one that there should not be some form of regulation, the principal question at issue being whether regulation should be by a method of control or a method of publicity. The report of the committee, which was adopted, recommended regulation by control as opposed to regulation by publicity. This report, with the discussion thereon, is found in the *Proceedings of the Twenty-ninth Annual Convention of the National Association of Railway Commissioners*, pages 114 to 223 and 238 to 257.

One of the first states which has attempted comprehensive regulation of the securities of utilities is Wisconsin. The fiscal affairs of utilities of that state, including railroads, have been under the jurisdiction of the Wisconsin Railroad Commission for several years. Regardless of that fact, the present chairman of the railroad commis-

sion of that state, a former chairman of that commission, now a member of the Interstate Commerce Commission, and the United States senator who has heretofore most strongly urged the necessity of the regulation of securities of utilities, are now apparently inclined to the belief that the regulation there prevailing is improper. Furthermore, the Railroad Securities Commission appointed by President Taft in 1910 and consisting of Arthur T. Hadley, President of Yale University, Chairman, Frederick N. Judson, Frederick Straus, Walter L. Fisher and B. H. Meyer, transmitted a report to the President, wherein, regardless of protestations on the part of members of this committee to the contrary, in my mind, is advocated a merely passive policy with reference to railroad securities and not at all a definite positive program looking to the correction of evils found by this commission to exist or the prevention of the recurrence of such evils in the future. This demands that cogent reasons be given by one who advocates active regulation of securities of utilities. In the face of these eminent authorities and with what I believe to be a careful consideration of every argument adduced by them, I state definitely my belief, first, that regulation of the securities of utilities is necessary, and, second, that such regulation must take the form of control by the public authority and is not satisfied by publicity alone. In the limit of this paper it will be impossible, however, for me to discuss in detail the merits of regulation by control as opposed to regulation by publicity. My views on that question are fully set forth in the report above referred to.

The opponents of regulation of the securities of utilities by control present two important objections to such regulation. First, they urge that the regulation of rates and service of utilities does not require the regulation of the securities of such utilities; and, second, the regulation of the securities of utilities brings about a guarantee by the government, if not in law at least in morals: (a) directly of the securities approved, and (b) indirectly of the securities already outstanding and issued prior to control by governmental authority.

Some of those presenting these objections urge that they are insurmountable and that no regulation whatsoever should be attempted. Others contend that they merely present difficulties inherent in the present scheme of regulation which is applied in Wisconsin, New York, California and other states. Those who urge that some method other than the method of control applying in

the states named should be applied, generally favor a system of publicity, and some there are who suggest that we should adopt a method similar to that imposed by the English companies act.

I join issue on each one of the objections raised. I am of the opinion that not one of them is valid against the system of regulation which is growing up in the various states following the lead of Wisconsin, wherein the affirmative approval of the governmental authority is required before stocks and bonds may be issued, and I shall discuss these objections in the order named to the extent that is possible in a paper such as this.

First, Can Adequate Regulation of Rates and Service of Utilities be brought about without Regulation of Stocks and Bonds?

On this question, Chairman Roemer of the Wisconsin commission, in a letter to the National Civic Federation, says:

"As I view the matter, the regulation of the issues of corporate securities is and must be for the benefit of the investors. It has no bearing independent of statutory provision upon the question of rates."

Mr. B. H. Meyer, formerly of the Wisconsin commission, now of the Interstate Commerce Commission, in discussing this matter before the National Association of Railway Commissioners in October last, said:

"With power to establish the value of the public utilities on the one hand, and adequate power to regulate rates and service on the other, I take it that the question of stocks and bonds is largely a question of public morals."

The Railroad Securities Commission has this to say on this point in its fifth recommendation:

If we were compelled to assume that rates are to be materially influenced either in their making by the railroads or in their regulation by the government by the amount and face value of the stocks and bonds outstanding, it seems to your commission impossible to escape the conclusion that these securities should be issued only under governmental regulation. Your commission, however, believes that the amount and face value of outstanding securities have only an indirect effect upon the actual making of rates and that they should have little if any weight in their regulation.

Senator La Follette of Wisconsin, in the issue of *La Follette's Weekly* of January 31, 1914, editorially urges that regulation of the

securities of railroads is not necessary to the regulation of rates. In this connection he says:

"The fair value of the property is the true basis. The public need not concern itself with all the villainies of over-capitalization which abound in the history of every railroad in the country."

It may be well at this point to state that it is generally conceded that there is no difference in principle between the regulation of securities of railroads and those of other utilities, and herein I shall make no distinction between the several classes of utilities in this regard.

Eliminating any consideration of the investor, who, according to some of these eminent gentlemen, deserves no protection, it appears that two fundamental fallacies exist in their reasoning: first, that they have forgotten apparently that the amount of the rate is not all that must be considered, but the character of the service as well. While the rate may remain the same, if the service deteriorates or the character of the commodity furnished by the utility is impaired, plainly the patron of such utility is paying a higher rate, when we have regard to what he is getting for his outlay. Second, they have neglected to inform themselves that, although legally they are correct and legally the financial condition of a utility need not be taken into consideration in fixing rates and requiring service, yet actually such financial condition cannot be overlooked because it has always had and does now have a material effect on the rates and service of utilities.

That this is true in concrete cases is easily demonstrated. That it always will and must be the rule I believe is equally clear. Utilities, as other enterprises, are initiated, managed and owned by men. Men, in the main at least, prefer their own advantage. Thus the natural inclination of those controlling the destiny of any public utility leads them, when a choice must be made between public service and private advantage, to choose private advantage. Gain has been, is now, and always will be the prime motive of those engaged in public utility as well as any other business; and the service of the public is only secondary thereto. Therefore, we may naturally expect to find that procedure followed, in the absence of restraint, which is most likely to result in profits to those in control. In practice, those who initiate a public utility enterprise attempt to get as much out of it as is possible and put as little as possible in, with the

result that the enterprise starts with the maximum burden that can be imposed and not kill it in the beginning. Every dollar that is taken out, or rather withheld, by construction contracts, watered stock or discount on bonds, represents what is in effect a liability and a liability which, if it take the form of a debt as a bond or a note, *must* be paid and a liability which, if it represent water in stock, *will* be paid if those in charge of the property can possibly bring about such result. The design of every public utility manager is of course to pay his bond interest and then to bring his stock to par or better. These results are sought regardless of the amounts which have been received by the utility for such bonds and stock. If obligations which netted the utility less than par are carried and paid off in the end and if stock which has been sold for less than par ever goes to par, the extra funds to bring this about must come from the rates. When we view the history of utilities and see that in numerous cases the results here referred to have come about, we must conclude that in such cases at least capitalization *has* affected the rates; for such rates have been unquestionably higher by that amount than is necessary to pay the expense of doing the business and a reasonable return on the value of the property devoted to the public use. These men who have long studied this question, however, say that capitalization need not affect rates. We answer that historically it has done so, and we have no reason to believe that in the future it will not have a like effect. If we should put a certain amount of meal into a bag and go away and subsequently, on inspecting the bag, find more meal in it, we would probably be pardoned if we should conclude that the additional meal came from somewhere; and if only one person had had an opportunity to make the addition we probably would not be far wrong in concluding that this individual was responsible. And when in the case of a utility certain funds, ascertainable in amount, go in from proceeds of stocks and bonds, and thereafter we find there are funds much in excess of these amounts in the utility and the only source from which money has been acquired in the interim has been the rates, we must here again be pardoned for believing the extra funds came from these rates. Of course, this reasoning overlooks appreciation in lands and kindred property, but the valuation theory, urged as a solution of our rate troubles by the very men who say capitalization does not affect rates, presents this same complication. As a matter

of fact, however, practically the only public utility presenting the unearned increment problem as a substantial factor is the railroad. And can any one urge that the tremendous fortunes made from railroads by the Harrimans, the Goulds, the Hills, and others, not one of which resulted from dividends but from sale or retention of securities with small if any return to the railroad corporation itself, can be accounted for on the theory that the lands owned by these railroads increased in value to such an extent? It is well known that much of the property now in use by public utilities has been purchased and is being purchased from funds realized from rates. Consequently, such rates have been higher than necessary, and however able public authority is to make rates independent of and unaffected by capitalization it has not yet done so.

Because, then, of a perfectly natural inclination of mankind, the tendency is to put the minimum into the utility at the beginning and take the maximum out in the form of stocks and bonds. The same natural inclination leads men in control to take the maximum out thereafter in rates in order to restore the margin between the minimum contributed in funds and the maximum retained in securities. It is idle to say that these inclinations working on the one hand to get the maximum out of the utility and on the other to get the maximum out of the public, have no effect. Every one knows they have had an effect in the past and that, in the absence of restraint, they will have a like effect in the future.

It is very evident that corporations have but three sources from which to secure funds: stock, borrowed money, and earnings. With stock all, or mostly all, out at the beginning, with bonds issued to an approximation of the value of the property and with consequent inability to sell more, there is left but the rates from which to secure funds. When we meet a situation such as this it always is necessary to secure more from the rates in order to get extensions or betterments or else not have such extensions and betterments. We have today an exhibition of the result of impaired credit consequent upon the inability of the roads to sell more bonds under their present earning capacity, when we see the eastern roads applying to increase all of their rates in order that, with the higher earning power, additional money may be secured. When, as I have said, there is no possibility of getting money from the sale of stocks or bonds—the two main sources of revenue for the utility corporation—such corporation can-

not go forward unless it is enabled to do so from funds realized from its only remaining source of revenue, its rates. Thus by permitting those controlling the corporation without restraint to indulge their natural inclination and exhaust the two main sources from which revenue may be secured, as is always their tendency, we inevitably bring about a condition wherein through financial inability the utility cannot accord to its patrons those rates and that service to which they are entitled.

Thus, if no regulation is afforded, we will inevitably have utilities tending toward over-capitalization. This tendency will result either in higher rates, as it has in the past, or in poorer service, for you will have utility managers by natural inclination and often of necessity, when proper rates are imposed, curtailing expenses, restricting service and in every way possible tending toward the minimum service that can be rendered. Free to work their own will in their financial affairs and always tending, if not prevented, to over-capitalize and then held down to the minimum basis for earning through regulation of rates, utilities inevitably get into bad financial condition. This condition could be at least measurably prevented by putting restraint upon these natural inclinations by proper regulation of securities. I am prepared to cite examples from my own experience in regulation where needed extensions have not been made, added service denied and exorbitant rates maintained, because of the necessity of the managers of such utilities to pay interest upon debts which too nearly approximated or were in excess of the value of the property devoted to the public use. It would seem to be clear that it is better, both in the interest of efficiency of utility operation and of economy in governmental machinery, to prevent such a condition being brought about, rather than wait until it is produced and then seek to force a utility to give the service at the rates that are justified but beyond its financial ability to give, with the result that a long contest ensues during which service is impaired, investors defrauded and confidence shaken with no better condition after such contest than could have been brought about initially by proper regulation by the commission.

It appears, then, that failure to regulate securities permits bad financial conditions to grow up which impair the financial ability of the utility, and hence its service, until such bad financial conditions are remedied; and the remedy then unsettles conditions and

defrauds investors, while less effort by way of prevention would maintain the financial ability and bring about conditions naturally that now must be forced through receivers, courts and reorganization. In short, those who urge that the financial affairs of utilities should be let alone and that only rates should be regulated fail to see that they merely attempt to cure a condition which they admit is bad rather than try to prevent it. They further overlook the fact, that, if it is right to cure it, prevention is certainly justified. If, as we contend, over-capitalization naturally occurs in the absence of restraint and that over-capitalization is the usual condition which we meet, it readily appears that its cure must always be made at the expense of some one, as the money diverted through over-capitalization must be supplied from some source. Rarely will it be possible by human ingenuity to prevent its being supplied, partly, at least, from the rates; and what does not come from that source comes from the purchaser of securities. Prevention, on the contrary, through regulation, if effectively applied before it is too late, brings about readily the desired result and the imposition of reasonable rates and the requirement for efficient service are secured without injustice to any innocent party and without the long period of bad service always occurring when a utility loses its financial ability to do that which it is legally obligated to do.

Therefore, we conclude that the first objection that regulation of rates and service does not require regulation of securities is not well founded. It remains to consider the second objection which is that

*Governmental Control of Stocks and Bonds Morally, at least, Commits
Governmental Authority to Recognize Stocks and Bonds when
finding Value for Rate-Fixing Purposes*

Every argument I have yet met in support of this contention indulges, indirectly at least, the presumption that the governmental authority acting is not equal to the job. Now I quite readily admit, in the language of Dr. Milo R. Maltbie of New York, that "I would prefer to have no regulation to that which is not effective, for a form of regulation without substance is worse than no regulation." What I have to say has reference solely to competent and effective regulation.

Those empowered to regulate should, of course, be advised as to the legal effect of their acts. They should know, as Mr. Roemer of Wisconsin points out, that the contract between stockholders is protected against impairment by the federal Constitution and that "each share of any class is entitled to all the privileges of every other share of the same class." Likewise bonds issued under the same trust deed stand on the same footing regardless of when issued. And knowing these legal principles they should avoid taking any step with reference to present issues of either stocks or bonds out of issues authorized and partly out, without knowing the value behind those already issued. If, in the case of a corporation a part of whose securities have been issued before regulation was applied, it is found that over-capitalization exists, no new issue should be permitted which will be on a parity with what is already out, thereby becoming diluted by the water already in the enterprise. Under a proper stock and bond law the burden is upon the utility to satisfy the commission that the application is justified and unless those in control of the corporation will take such corporate steps as are necessary to overcome the difficulty presented by equal participation, then no securities should be permitted. The financing by preferred stock, which is now being done in various states, is an answer made by utility corporations themselves to the argument here considered, and an answer that will always be made if utilities commissions are firm and have an understanding of their work. The California commission, for example, has laid down the rule, and adheres to it strictly, that any utility in a financial condition which the commission would not approve if presented originally to it, but nevertheless not actually insolvent or in such a bad way that its condition is doubtful, may take any financial step which leaves it in a better financial state. It is allowed to progress toward a satisfactory financial condition but it must not go backward. Its option is to advance or issue no new securities of any sort. If an agency is actually, although not legally, insolvent by having debts in excess of its assets, it must reorganize before it can issue more securities. By this rule the burden is placed, as it should be, upon the utility to present a satisfactory plan of finance; and if any of the *legal* difficulties suggested by Mr. Roemer are still present the application is not approved. No utilities commission need, nor ever should, permit the issuance of stocks or bonds in any case where such permission will serve, by reason of partici-

pation, to imply a legal sanction of outstanding issues where such outstanding issues have not the proper property values behind them. In the case of doubt as to the property values behind the securities the commission can quite properly withhold its approval until the applicant utility shall have presented satisfactory evidence upon which the commission can act. With all due respect to the opinion of the eminent senator from Wisconsin, as voiced in his present opposition to the railroad securities bill pending before Congress, I am plainly of the opinion that he has overlooked the distinction between a rate case, where the burden is upon the public, and a securities case, where the burden is upon the utility. In the former some one wants something against the utility. In the latter, the utility wants something, and to get it, it must disclose and not suppress evidence. Overlooking this distinction the senator advises us, as regards railroads, to wait until the Interstate Commerce Commission shall have finished its labors in valuing railroad properties, and then by rates having proper relation to such value to get rid of the water then found to exist in the railroads by rendering them unable to pay their obligations which shall have been incurred in the meantime in excess of what should have been incurred. And it is also evident that it is thought that water now exists and that more water will go in in the future while the valuation is being made, for plainly if it were expected that nothing but the proper financing would take place there could be no objection to, although of course no need for, governmental action on the ground that such action would serve to recognize improper financing. In short, the very argument that no governmental restraint should be imposed, on the ground that improper securities might thereby be validated, presupposes, of course, the fact of the issuance of such improper securities in the case. We are justified in assuming that the lack of restraint hereafter pending the final completion of the stupendous work of valuation of railroads, as required by Congress, will leave the roads open to do more of this very thing and further to impair the financial standing of these properties.

And this is the advice of those who urge that we must not regulate securities because by so doing we incur a moral obligation with reference to such securities! Too many securities have been issued in the past under no regulation. Too many will be issued in the future we know. Yet in the face of this condition we should do

nothing because our hands may be soiled also with guilt! Having the power to prevent and not preventing a crime, it occurs to me, imposes some kind of moral obligation which possibly may be greater than that which attaches after an unsuccessful attempt to prevent such crime. Knowing that securities are being, and have been, issued and sold that should not be issued and sold, nevertheless let us permit it until in our good time we get ready to contract the earning power of the utilities through rates so they may no longer pay their obligations with consequent loss to investors and impairment of financial ability of the corporations properly to serve the public, all because of our fear of incurring a moral obligation by attempting to do something. Admitting we incur no legal obligation by regulation, as I think I have shown is the case when we ought to escape such legal obligation, there is not one cogent reason advanced which leads me to believe that we are not morally more bound by failure to regulate than by regulation. The corporation is the creature of the state. Every step which may be taken in issuing stock or authorizing bonded indebtedness must be taken in compliance with some statute. The state now regulates utility corporations, in this regard, as it does all corporations and by so doing empowers such corporations to take advantage of the public and empowers the officers of such corporations to take advantage of the corporations themselves to the hurt of such corporations and the public. Add to this the fact that government knows not only that these things may be done, but also that they have been and are being and will be done, and, to my mind, we have a pretty large moral obligation in itself and one that is minimized rather than accentuated by taking additional steps to prevent abuses possible under the authority already conferred. To relieve ourselves of any moral obligation at all we must dispense with the corporation itself. But having created the corporation with power of oppression under present economic conditions, can we excuse ourselves, if it oppresses, by the plea that, by an attempt to prevent such oppression, we become *particeps criminis*? Being entirely responsible for every power of this fictitious person wherein it issues securities, we cannot avoid responsibility for what it accomplishes by means of such powers.

As palpably erroneous is the contention that, by approving securities, we will mislead investors. The very able chairman of the Wisconsin commission in a letter to the National Civic Federation

states that, by authorizing the issuance of securities and directing their investment, the governmental authority involved

is likely to cause certain investors who purchase such securities as an investment without knowing anything of the management of the corporation or the possibilities of the enterprise to rely upon the state's sanction of the issues. These are the investors who need protection and who, I am apprehensive, will often be the victims of investments in ill-advised and mismanaged public service corporations whose securities have been authorized by state commissions. The business man who deals in such securities needs no protection.

These views of Mr. Roemer deserve respect because of his great ability and long experience, but at the risk of appearing presumptuous, I respectfully suggest that a little analysis will show them to be fallacious. Who buys the bad securities today? Not the business man who deals in securities, for he, with or without regulation, makes his own independent investigation. So as to him regulation effects no change. Who then buys securities today under no regulation without making an investigation for himself? The unwary, of course. Who will buy them under regulation, according to this argument, without independent investigation? Here again the unwary. The whole argument then is "unwary investors are now misled into buying bad securities. Make your securities better by effective regulation and issue fewer of them for the same amount of property and thereby victimize the man by protecting him and giving him more for his money."

I have attempted to deal with the more important controverted questions involved in regulation of securities. I am strongly of the opinion that not one of the arguments advanced against regulation will bear analysis. I am convinced that these arguments are adduced in contemplation of ineffective regulation and are directed more against what has been and is being done in some quarters by way of regulation than against what the state can do under proper statute carefully and intelligently administered.

In summarizing the argument on the first objection it is well to have in mind what the Railroad Securities Commission had to say with reference thereto. In this connection I call attention to the following comment:

They (the railroads) have therefore been less able to give the shippers or the travelers the facilities that are requisite no less for the convenience and safety of the public than for the profitable utilization of the railroad itself

To the extent that we lessen the debt we shall increase the power of the railroads to raise money when the public needs added facilities and shall at the same time reduce the chance of default and lessen the severity of commercial crises.

And to what Dr. Maltbie of the New York Public Service Commission, first district, one of the clearest thinking men engaged in regulation work in the country, also says:

The state owes a duty towards investors as well as it does towards shippers and passengers. Further, proper regulation of securities will ultimately affect rates and service. It may not immediately but in the long run better service and lower rates will be given by corporations that are upon a sound financial basis than by those having a great over-capitalization and unsound finances.

In short, as pointed out at length herein, whatever *ought* to be the result of over-capitalization and however much men may theorize, the fact remains that it *has* and *does now* affect rates and service and a proper regulation of rates and service cannot be had without regulation of securities.

In answer to the second objection, it appears that the state, by methods easily available, can regulate and is regulating securities without directly or indirectly validating or approving existing outstanding securities that should not be approved. Besides, the state incurs an obligation from an ethical standpoint in putting a corporation, by permission, in the way of doing a thing which results in a fraud and particularly is the state morally derelict if after having conferred power on a corporation and having seen such power used in a way to work injustice, at having the power to step in and prevent such injustice, fails to do so. And any restraint applied which tends to prevent such improper procedure on the part of corporations instead of morally involving the state to an extent beyond which it is now obligated, tends on the contrary, to lessen the moral responsibility.

As regards securities that are approved by the state, under the proper precautions pointed out herein, I can give myself no great concern as to the effect of such approval. If the public utility commission does its duty, the approved securities should be good and if it sees to it that the proceeds are honestly invested in the property and takes care that securities approved are not diluted through participation with other securities not approved, then why should not these securities be recognized in the rates? But regardless of

any difficulties that confront those empowered to regulate securities, the condition under regulation is so immeasurably better for utility, patron and investor, as far as can now be determined, that I am at a loss to understand the Jeremiah-like attitude of those who some years ago indulged the same childlike faith in the efficacy of regulation that some of the rest of us now display. But I could the better understand and perhaps agree with those formerly urging regulation and now so fearful of its results, if they would point out wherein it has failed where effectively applied, instead of contending that it may produce results that have not yet come upon us. The evils of over-capitalization are familiar to us all. The logic of regulation seems to me to be irrefutable. Where properly carried on it is certainly preferable to the former condition, and until something more substantial than mere fears of results that cannot be shown as yet to have materialized is urged against the propriety of regulating securities, such regulation certainly should not be rejected and a reversion to former admittedly bad conditions invited.

TEXAS STOCK AND BOND LAW

BY CHARLES SHIRLEY POTTS,
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James Stephen Hogg, Governor of Texas from 1891 to 1895, was in many respects the first of the group of progressive leaders of whom Senator La Follette, Theodore Roosevelt and Woodrow Wilson are conspicuous illustrations in more recent times. By his vigorous enforcement of the laws of the state against the railways, as attorney-general from 1886 to 1890, Mr. Hogg won the reputation that made him the natural leader in the campaign of 1890, a campaign that ended in the adoption of an amendment to the constitution providing for the establishment of the railroad commission, thus bringing to an end a struggle that had extended over a decade. The legislature that met in January 1891 created the railroad commission and conferred upon it powers that at the time seemed very radical, though not especially so in the light of more recent railway legislation in other states.

Necessity for Regulating the Issue of Securities

Scarcely had the commission entered upon its duties and promulgated a general system of freight rates before it became evident that for any thorough regulation of rates it would be necessary for the commission to have power to control the issue of railway securities. The necessity for such control was forced upon the attention of the governor and the commission when certain foreign bondholders represented by the Farmers' Loan and Trust Company of Baltimore, went into a federal court and obtained an injunction suspending the rates fixed by the railway commission upon the complaint, among other things, that rates were not high enough to pay the expenses of operation and leave sufficient funds to take care of the interest on the outstanding bonds. "By that action," said Governor Hogg, "the point is sharply, boldly made, that the traffic rates of this country must be maintained to pay the interest on all the railway's bonds. It is material to the public, therefore, that none but honest bonds,

issued in pursuance and within the limits of the constitution directly, shall be permitted. . . . Fictitious bonds are not capital nor the representatives of capital. They are the fruits of crime."

With such views as these, Governor Hogg in 1892 offered himself for reelection upon a platform defending the work of the railroad commission and demanding a law that would place definite restriction upon the power of the railroads to mortgage their property. In his opening campaign speech, he pictured the evils of unrestricted bond issues in the following language:

The railways of this state, according to their sworn reports filed last October with the comptroller, have outstanding against them \$455,250,744 in stocks and bonds, or an amount more than one-half the assessed valuation of all the property within the state, including the railways themselves; or about \$40,000,000 in excess of the assessed value of all the lands within the state.

. . . . The news goes abroad, and the declaration is commonly made, that there were no railways built in Texas last year; yet during that period they have increased their bonds and stocks to the amount of over \$40,000,000.

. . . . I know of one road that, within a few weeks after it sold out for \$8,000 a mile, was mortgaged to secure bonds issued to the amount of \$37,000 a mile on it. I know another that sold for \$9,500 cash a mile and was immediately mortgaged to secure bonds for \$35,000 a mile. Neither of these roads was in the slightest degree improved in equipment or otherwise. There is hardly a road within the state that has not, year by year, increased its bonded indebtedness, until now they nearly all owe quadruple their value. By this illegal process millionaires are made. These roads are rendered for taxation at a valuation of \$63,000,000, yet their stocks and bonds amount to \$392,000,000 above that amount. For the last seven years these railways have increased their obligations on an average of \$30,000,000 annually.

The Stock and Bond Law

After one of the bitterest struggles in the history of Texas politics, Governor Hogg was reelected and the following year the present stock and bond law was placed upon the statute books. This law provides for the valuation of all the railways in the state by the railroad commission's engineers and declares null and void any mortgage or lien upon the railway's property in excess of the valuation that is placed upon the roads by the railroad commission. In cases of emergency involving the interests of the public or the preservation of the railway's property, an additional amount of bonds may be authorized, provided that in no case the railroad's outstanding

stocks and bonds combined shall exceed 150 per cent of the value as determined by the railroad commission. That is to say under ordinary circumstances the bonded indebtedness of the railroads, not including the capital stock, shall not exceed the full value of the property as ascertained by the commission, while 150 per cent is fixed as the maximum limit of both stocks and bonds in cases of emergency.

Two material amendments have been made in the law since its original adoption. One came in 1901 and pertained to the building of branches and extensions and the other in 1907 and authorized the issue of additional securities for the purchase of necessary rolling stock. By the latter amendment the commission was given power to require any railroad to purchase "such rolling stock and motive power as will properly equip such common carrier and facilitate the movement of all traffic," and to allow the issue of securities to pay for the equipment so required.

The amendment of 1901 was adopted to soften a rather too harsh interpretation of the original statute. The commission had held that when a company that was already over-capitalized extended its line by the construction of branches, it could not issue additional securities unless the combined actual value of the road and the extension together exceeded the outstanding securities, and then only an amount equal to the excess could be issued. The amendment of 1901 provided that the commission should allow the issue of new securities up to the total value of the new construction regardless of any formerly existing over-capitalization on the old mileage.

Results of the Law

It is always a matter of great difficulty to say positively what the results of any given piece of legislation have been. It is very difficult for example to know whether or not the Texas stock and bond law has retarded the building of railways in Texas or has hindered the expenditure of money for improvements and betterments, or has produced any material effect one way or the other on rates and fares. Of one result, however, we can speak with definite assurance, and that is that the law has not only stopped the increase of fictitious stocks and bonds but has actually resulted in a decrease in the average amount of the outstanding securities per mile of line. This result is

worthy of remark in view of the fact that the last twenty years have seen a marked increase of the outstanding capitalization on the other railroads in the United States. The average amount of capital stock per mile of line in Texas has been reduced from \$15,000 in 1894, to \$8,400 in 1913, or a decrease of more than 44 per cent. The bonded indebtedness per mile of line has been reduced from \$25,700 per mile to \$23,200, or a decrease in the mortgage debt of nearly 10 per cent. The total amount of both stocks and bonds has been reduced from \$40,800 in 1894, to \$31,600 in 1913, or a reduction of more than 22 per cent.

The following table will show at a glance the changes that have been made in the mileage, in the commission's valuation of the roads, and in the amount of stocks and bonds outstanding, for the years mentioned:

On June 30	Mileage against which securities were outstanding	Commis- sion's value per mile ¹	Stock outstanding per mile	Bonds outstanding per mile	Total stocks and bonds per mile	Decrease per mile
1894	9,138.22	\$15,926	\$15,102	\$25,771	\$40,873	
1898	9,284.00	15,748	14,596	24,699	39,295	\$1,578
1902	10,616.32	15,901	12,389	21,781	34,170	5,125
1905	11,662.46	16,520	10,985	21,035	32,020	2,150
1908	12,830.96	17,015	10,207	20,686	30,895	1,127
1913	15,286.88	18,824 ²	8,409	23,206	31,615	720 ³
Total reduction for nineteen years ..			\$6,693	\$2,565		\$9,258

¹ The figures given in this column are the average for such railroads as the commission had valued up to the dates for which the figures are given.

² This valuation is taken from the commission's report for the year 1912, but differs only slightly from the figures for 1913, which are not available at this writing.

³ Increase.

It should be noted that in addition to the outstanding stocks and bonds, as indicated in the table, the roads owe about \$6,400 per mile on the indebtedness grouped by the commission under the general headings, "equipment trust obligations" and "current and other liabilities." Nor does the table include some \$18,000,000 of "certificates of indebtedness" due by the Gulf, Colorado and Santa Fé Railroad Company to the parent company, The Atchison, Topeka and Santa Fé Company. These obligations, however, are not mortgages on the property of the railways, but are presumably obligations that must be met out of the income.

Need of Revaluation

While the purposes of the stock and bond law are excellent and its operation has brought very desirable results, there are certain directions in which it is believed modifications of the law either in text or in administration could be made with advantage. In the first place it seems desirable that there should be a general revaluation of the railroads of the state. After the passage of the stock and bond law in 1893 the commission adopted as a basis of valuing the existing roads the cost of reproduction, while for the roads to be constructed in the future the cost of construction was adopted as the principal basis. With reproduction, then, as the basis of valuation, the commission organized a force of engineers, and during the years 1894 to 1896 made a valuation of the existing roads. As new roads have been constructed, they have been valued by the commission, until, at the present time, the commission has valued an aggregate of about 14,000 out of 15,000 miles in the state.

It is believed that a revaluation should be made for the following reasons:

1. The original work of evaluating the roads was hastily and inadequately done. The commission was limited in the number of engineers and accountants, and it felt the need of securing immediate results. As a consequence, the engineers passed over the roads hastily and at best could have made only a superficial estimate of the cost of grading and the value of materials used in construction. The cost of making the original valuations per mile of line was about \$1.50, whereas the expenditures for similar work in other states has been several times as great, and former Interstate Commerce Commissioner Charles A. Prouty, now in charge of the federal valuation board, estimates that the cost to the government and the roads together of making the valuation of the roads of the country will be about \$25,000,000, or about \$100 per mile. The national board has employed a force of 1500 engineers, and 1000 real estate experts, clerks, and stenographers. Compared to the thorough-going inventory thus planned by the federal government, the valuations in Texas seem hopelessly inadequate.

2. In the second place, no allowance has been made for the settling and seasoning of the properties, for the increase in the values of the lands and other properties due to the general growth and

development of the community, or for the expenditures made for permanent improvements.

3. The values determined in 1896 are unfair to the roads, because they were made at a time when all values were abnormally low. The years 1894 to 1896 were the years when bedrock prices obtained throughout the country and when wages were lower than they had been for twenty years and much lower than they have ever been since. As a result, the values placed by the commission upon rights of way, the rails and ties, and the stations and rolling stock of the roads were such as would not begin to reproduce them in normal times. Probably from 30 to 50 per cent would have to be added to these values to make them representative of normal prices of materials and rates of wages.

4. Still another reason for a new valuation is to be found in the fact that the existing valuations are surprisingly unequal and unfair. Many of the valuations, as has been stated, were made in the nineties during the period of depression. Others have been made at different times as the roads have been constructed, and, as the cost of material and the rates of wages have varied greatly, the values have shown a corresponding variation. As a result, all the older roads which on account of settling of roadbed and the building up of industrial and commercial relations, one would naturally expect to be the more valuable, are in general valued by the commission at a much lower rate than the newer roads. Thus the Houston and Texas Central, one of the oldest roads in the state, with gross earnings of \$7,449 per mile, is valued at \$20,500 per mile, while the Trinity and Brazos Valley not yet ten years old, with an earning capacity of \$5,553 per mile, is valued at \$29,900 per mile. In like manner the Gulf, Colorado and Santa Fé, which probably has the best roadbed in the state and has an earning capacity of \$7,320 is valued at \$17,000 per mile, while the St. Louis, Brownsville and Mexico, completed about eight years ago, with gross earnings of \$4,706 per mile, is valued at \$26,000 per mile. The Galveston, Harrisburg and San Antonio, which is the oldest road in the state, with an earning capacity of \$8,061 per mile, is valued at \$18,800 per mile, while the Beaumont, Sour Lake and Western, of recent origin and with an earning capacity of \$6,041, is valued at \$25,600 per mile. The Texas and Pacific, the strongest of the Gould roads in Texas, with gross earnings of \$10,200 per mile, is valued at \$17,000 per mile, while the International and

Great Northern, another Gould property, which has but recently passed through a receivership, is valued at \$29,000 per mile.

Other illustrations could be given, but these are quite sufficient to show the hopeless confusion into which the commission's valuations have fallen, a confusion from which the only escape seems to be a general revaluation of the roads. The results that might be expected from such a revaluation are very well illustrated by the case of the International and Great Northern Railway, referred to above. This road was one of the original roads valued in 1896, and the commission placed a value on its 771 miles of track of \$13,942,000, or an average value of a little more than \$18,000 per mile. As a result of the receivership through which the road has passed since 1907, and the consequent reorganization of the company, it became necessary for the commission to revalue the old portion of the road, as well as the additional mileage built since the former valuation, or, as the members of the commission express it, to bring the valuation down to date—a service which the commission stands ready to perform for any road upon request. The result of this work which was completed in June, 1913, is that the commission now values the road at \$29,097 per mile. Thus one of the old roads which is not by any means among the best earners or in the best physical condition, has by revaluation had its value as fixed by the commission increased by \$11,000 per mile, or an increase of 61 per cent. An even more striking result was obtained from a revaluation of the Galveston, Houston and Henderson, by which the commission's values were raised from \$31,000 per mile to \$63,000 per mile, or an increase of more than 100 per cent. That changes more or less similar would result from a revaluation of most of the older roads, there is very little reason to doubt.

Bonds for Betterment

In the second place, it is believed that the law should be so changed as to allow the issue of bonds for extensions and betterments yet to be made. The commission has interpreted the law as authorizing the issue of securities only after the money has been actually spent and the values created. This interpretation compels any road that may desire to make an extension or permanent improvement in its tracks to secure the money first and make the necessary improvements before the bonds will be authorized by the commission, whereas, the ordinary method of financing such improvements is to secure the

funds first by the sale of the company's bonds. It seems a bit inconsistent to require the company to spend the money first and raise it afterwards. It is contended that this provision of the law as interpreted by the commission has seriously retarded the extension and improvement of the roads by cutting off the one ready source of money supply, namely the use of the corporation's credit.

It is difficult to see any serious objection to allowing the corporations to issue their securities as a means of raising the funds with which to make extensions and betterments, provided always that the commission be given full and complete power to supervise the spending of the money so raised. Such a practice to be sure would result in an increased outstanding indebtedness, but if the commission has power to see that the money is properly expended on the improvements contemplated, this process would not result in an increase of overcapitalization, for every dollar would be used for improving the services or the earning capacity of the property. This modification of the stock and bond law has been introduced in a number of the more progressive states and has everywhere resulted in an improvement of the quality of the service. Thus the California law of 1912 provides that no public utility shall spend the proceeds of the sale of any stocks or bonds or other evidences of indebtedness without first securing an order from the railroad commission, and the commission is given power to require a strict accounting for all moneys so spent. Similar laws are in force in Arizona, Kansas, Wisconsin, New Hampshire, Massachusetts and New York.

Control of Interurbans

Another change that should be made in the law is to include in its provisions electric interurban railways. Up to the present time these companies have been entirely without regulation either as to rates and fares or as to the issue of securities. It is quite possible that the commission has ample power under the law creating the commission and under the stock and bond law to assume general regulation of interurbans as well as steam railways. These laws give the commission power to "regulate freight and passenger tariffs, to correct abuses, and prevent unjust discriminations and extortion in rates of freight and passenger tariffs on the different railroads in this state" and to authorize the issue of securities for such roads. Interur-

ban electric roads are certainly railroads and are engaged in carrying freight and passengers. The character of the motive power used by the roads is nowhere referred to in the law, and there would therefore seem to be no reason why the railroad commission should not assume the control of these newer forms of railway facilities. If, however, it be held that the commission has not the power under the present law, *the law should be changed so as to bring interurbans under the control of the commission, not only in the matter of rates and fares, but in the issue of securities as well.*

Should Refunding be Allowed?

Still another particular in which the existing law has been criticized is the fact that as interpreted and applied by the railroad commission, it does not permit roads that were over-capitalized at the time the law was passed to refund their maturing bonds. The law, as interpreted by the commission, permits the issue of mortgage bonds only up to the full face value of the property less the amount of the outstanding stock. And where that limit had already been exceeded, the commission will not allow the issue of new bonds in excess of the value of the road, and the difference in the amount of the old and new issues must be provided for in some other way. In case the road should not be able to make such provision, a receivership would be the necessary result.

It is argued by those who favor a change in the law to provide for the refunding of outstanding securities, even though the amount be in excess of the value of the property, that the refunding of the debt would not result in an increase of the mortgage, but would merely be a means of assisting the companies to meet their obligations. They contend further that to refuse to allow the refunding of the bonds would be virtually an impairment of the obligation of a contract, since it would deny to the railroads the means of paying off the obligations that they doubtless had in contemplation at the time the original debt was created. It is also pointed out that the punishment meted out by such a policy would not fall on the shoulders of the guilty parties who are responsible for the over-capitalizing, but upon the innocent purchasers of the bonds, many of whom may have been entirely ignorant of the fact that a wrong was done a quarter of a century before, when the bonds were issued. They point out, too, that the state itself is partly responsible for the over-capitalization,

because by its negligence and its failure to enact and enforce proper laws, the conditions complained of were allowed to come into existence. For the present, however, this subject is mainly one of academic interest, for up to date no road has been seriously embarrassed by the application of the present rule and no large issues of bonds will be maturing for another ten years. It is probably true, too, that if a thorough-going revaluation of the roads were made it would wipe out the margin of difference between the commission's values and the outstanding securities.

All things considered the conclusion may be safely stated that the Texas stock and bond law has accomplished good results. At the time it was enacted, it was probably the most advanced piece of legislation on the subject in the country, but such has been the veneration in which the law and its great author have been held by the people of Texas that they have feared to tamper with the measure lest its efficiency should be impaired. In fact many of the people of the state have looked with suspicion upon anyone who has had the temerity to propose a modification of the law, fearing lest it be a secret attempt to destroy it. As a result Texas has not kept pace with the progress made in other states and has failed to avail herself of the experience gained by others. Three things at least seem to be fairly clear: first, that there should be a revaluation of the railroads; second, that the commission should be given power to allow the issue of bonds for extensions and betterments, the proceeds to be expended under the commission's supervision; and third, that interurban roads should be brought under the control of the commission in matters of rates and fares, as well as the issue of securities.

RATE OF RETURN

BY JAMES E. ALLISON,

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Commission; Member A. S. C. E., A. S. M. E.

The object of public valuation for rate making should be to establish a just amount which should earn returns and to determine the amount of those returns by means of a percentage factor called the rate of return. If it is granted that the result is to be just both to the investor and to the consumer it is seen that the ultimate object of all the investigation and regulation is to establish a proper return in money. The amount of capital upon which the returns are based and the percentage rate of return are merely steps in arriving at this ultimate object of the amount of returns.

The amount of return in reality determines the value of the property. No matter what sum is taken as the capital item or what percentage as a rate of return, the value of the property will be determined by a capitalization of the amount of net earning and, of course, the stability of those earnings. If the so-called valuation or determination of the capital item establishes an amount which appears to do justice to the investor and the consumer, then the rate of return and consequently the amount of returns must be such as will make this just amount the true value of the property, i.e., exchange value.

It is seen by following these steps that the true object of public regulation so far as valuation is concerned is to *create* a value which shall be just and is not to *find* an existing present exchange value. The present exchange value of a property undergoing rate or service regulation is problematical until the rulings of a court or commission establish the returns.

Having established by inventory and appraisal methods the "capital amount" upon which a reasonable return shall be based and having done this upon such principles as will result in justice, the next step is to determine upon what principles the rate of return and consequently the return shall be based. To the mind of the writer it seems clear that in order to preserve as an exchange value

the amount determined to be the just amount it is necessary to fix the rate of return at that point which will readily induce capital to flow into the particular enterprise under consideration. In other words, the returns should be such as will readily induce another set of investors to take the place of the investors already in the enterprise and to pay them a sum equal to the capital item determined upon as the just amount.

While this statement that the rate of return should be such as readily to induce one set of investors to take the place of another seems simple, the ascertainment of that rate is not by any means simple. The whole body of investors who have capital to place in public service enterprises is not homogeneous and conditions which will induce one to invest will not tempt another.

First, we have the ultra-conservative class which demands absolute security for its principal and must consequently be satisfied with a very low rate of return. Second, what may be called a conservative class which will invest in corporation bonds which have a small amount of apparent risk but which must be upon developed and matured properties. Third, we have a semi-conservative class which will take greater risks and will invest in preferred stock and bonds paying (discount included) a higher rate of return and bearing a corresponding amount of risk. In the fourth class, which might itself be divided into many classes, we have the more or less speculative investors who not only aim for high rates of return but demand a prospect of enhancement of capital.

All these different classes of investors willing to take part in the enterprises upon different conditions are the cause of the invention and issuance of the many grades of corporation securities. To obtain money for public service enterprises it is usual to try to appeal to all of these classes in the arrangement of the financiering plans and when a commission or court comes to select one single percentage as the proper rate of return which will preserve but not enhance the value of the investment the problem is always a difficult one. In fact it will seldom be possible to preserve exactly the just amount as the future exchange value of the property. This result, however, can be approximated and at least should be the aim of regulation.

The most feasible way to arrive at the proper rate of return upon a given property would seem to be to imagine a set of investors

willing to pay the established just amount intending to hold it without bonding or other financing devices. The return at which they would accept this proposition is the return which will preserve the just amount as the true value and such return may be assumed as a reasonable return. But as an interesting feature of financing, it is found that the division of the investment into classes of first mortgage bonds, second mortgage bonds, preferred stock, second preferred stock and common stock or any variation thereof, may act to create an exchange value for all the securities representing the property considerably in excess of what its value would be were all the securities of one single class. The cause of this is, of course, that each of the classes of investors heretofore mentioned being suited in its particular kind of security is willing to pay a higher rate than if all of them are required to accept securities not of the class they most approve of.

An illustration of this condition came under the notice of the writer in a recent valuation and regulation case where the whole property was valued at \$18,000,000 and where the rate of return was fixed as reasonable at 8 per cent upon that amount of investment. This company had out \$15,000,000 of bonds at 5 per cent which on the strength of a well-established business were worth par. It is seen that, of the \$1,440,000 constituting the 8 per cent return allowed, only \$750,000 was required to pay interest on the bonds, leaving \$690,000 free to be proportioned as dividends on stock. This amount easily enabled the company to carry \$10,000,000 in stock commanding par in the market. In this case it could not be denied that, if capitalists were to pay \$18,000,000 flat for the property without bonds or classified stock, the money could not be obtained at less than 8 per cent, and yet by dividing the securities into classes to suit the desires of the different investors an exchange value of \$25,000,000 was created. The regulating body in this case held that the public was justly treated in paying returns at which the capital would invest in simple unincumbered title to the property, and that arrangement made by the owners, under which by assuming all the risks they persuaded the investors to hold the bonds at 5 per cent, was a financial operation from which they were entitled to the full benefit. And unless the regulatory bodies are to enter into and prescribe the details of financing it would seem that this position was the correct one.

One of the problems entering into rate of return is that of bond discount or discount of securities. It is seldom that a new enterprise sells its bonds at par although it could probably do so if the interest rate promised to be paid were high enough. Just why it seems necessary, and it does seem necessary, to offer bonds at less than par when the same result would be accomplished by a higher rate of interest is one of those problems involving the psychology of investors. One strong reason for it is that it is customary, and another probably is that the appearance of getting a bargain always has its weight in making a sale.

The question of bond discount has arisen in many public service cases and the weight of opinion seems to be that it is best not to capitalize it; although this is not so held in all cases. One of the strong arguments against capitalizing bond discount as a rule is the custom of issuing refunding bonds at less than par. Where this is done at heavy discount, as often happens, it can be seen that, if several refunding operations were taken into account, a large percentage of the capitalization might represent nothing but bond discount. This circumstance has had much to do with determining the regulating bodies in taking the stand that bond discount should be included in rate of return and not set up as permanent capital.

Capital under ordinary circumstances is probably as highly competitive a commodity as exists in the field of economics. But in public utilities we generally find a monopoly feature existing. The object of public regulation should be so to regulate rates that the returns upon capital shall be brought to a competitive basis, while at the same time the economic waste of competition in the utilities themselves shall be eliminated. In regulating returns, however, great care must be taken that the returns allowed do not fall below the competitive point, otherwise capital will not enter the utilities and stagnation and poor service will result.

The return upon capital cannot well be controlled by arbitrary rules whether established by statute or by courts or by commissions. Hence the duty of a rate regulating body would seem to be to investigate and find out the existing natural economic laws controlling the rate of return demanded by competitive capital in order to induce it to enter the particular enterprise being regulated and to establish their rules accordingly.

The rate of return is not always fully defined when we give the

percentage per annum to be earned. In many enterprises the return must be partly as a lump sum to be paid for extra hazards. One of the most important problems yet to be solved by the public service commissions is what inducement is to be offered to the capitalists who are expected to furnish the initial investment in new and untried enterprises. At present there is almost a stagnation in the building of public service plants or railways due in part to the uncertainty as to what capital may expect as a reward for this initial risk. If a group of capitalists should determine that a certain inter-urban railway would eventually pay, and if they were to foresee that they were under no circumstances to be allowed to earn upon this enterprise a return any greater than they could obtain from a similar already established investment, it is difficult to imagine that they would undertake it. Even if a commission were to assure them that they would be *permitted* to earn a very high rate of return for the first few years, as compensation for risk, the immediate answer would be that the circumstances of a new enterprise would probably prevent the earning of a high rate of return during the initial period even if permission to do so were assured. The investors therefore would conclude that they would have small chance of compensation for initial risk; for no matter how promising the enterprise appears the element of risk in a new business is always present.

As time goes on, and as the regulation of private capital in public service enterprises is better understood, it will probably be found necessary to allow a lump sum capitalization of initial risk as an inducement to obtain the capital, and this risk allowance will be permitted to earn reasonable returns as if it represented real money placed in the service of the public, the returns to be permitted after the enterprise has developed to the point where they can be earned.

In most of the published reports of judicial decisions or opinions and of findings of commissions there is no very clear process of mind shown by which these bodies have arrived at their conclusions as to a reasonable rate of return. In some of the court decisions and even in those of able commissions the legal rate of interest seems to have entered as a factor in determining a reasonable rate of return. There is of course no reason for this other than that it was grasped as a prop for lack of better reasoning. Because the legal rate of return in some states is 6 per cent is no reason for sup-

posing that this circumstance would have any effect upon investors in inducing them to enter a hazardous enterprise. Generally to the legal rate of return there has been added what is called profit as a reward for risk or for exertions of the managers and creators. This process does not consider economic laws but no doubt in many cases by such rule of thumbs an approximately correct result has been obtained.

One of the most curious features in the decisions of the courts has been in assuming that, while a rate of return may be too low, it is yet not confiscatory of property. This conclusion, and it seems rather well established as a principle, is to the "illegal" mind, a curiosity in logic.

It can hardly be disputed that the returns create the value of the property and if the returns are admitted to be, we will say 25 per cent below what they should be, it seems difficult to avoid a conclusion that 25 per cent of the value of the property has been destroyed to the investors, and if the ruling is the result of a rate case, 25 per cent has been confiscated to the benefit of the consumer.

Throughout the whole mass of decisions of the courts on valuation and on rate of return there has been such a profound disregard for economic laws and there is such a great reverence by both the courts and the commissions for precedent even if it is a patently wrong precedent, that it is difficult to prophesy the results which will follow for the next few years. In the end the true economic laws will of course prevail but before that time there will probably be a considerable period during which new capital will hesitate to place itself under control of public regulation. Capital already in the public service will of course be injured by adherence to false precedent but it will suffer much greater injury because of the stoppage of new capital. Public service enterprises constantly need new capital because in most places the public demand for public services is constantly increasing. Whether or no the regulating bodies or the public itself will feel the curtailment of service soon enough to realize, before any great harm is done, that capital is free to stay out of public service, remains yet to be seen.

CAPITALIZATION OF EARNINGS OF PUBLIC SERVICE COMPANIES

BY MORRIS SCHAFF,

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The expediency of adjusting the powers and privileges of monopolies, like our railroads, telephones, gas, electric light and water companies, to the ascertained requirements of the public and to the conditions which govern and secure to the companies themselves their own stability and efficiency has passed beyond the debatable point; for about all the states of the Union have, in response to the reasonableness and advisability of this expediency, created commissions for the supervision and regulation of public utilities which from the nature of the field of their operations are necessarily monopolies.

The only aim and purpose of these commissions are to secure two things, namely, the lowest price for an adequate service rendered, and the permanence and security of the investment. The body of principles to be observed in securing these mutual benefits is called public policy and this (it goes without saying) like any political agency has to adapt itself to circumstances and the growth of enlightened public opinion.

Let us bring into light with as much clearness as we can the factors on which the lowest possible prices depend and the conditions most favorable for the security and permanence of the investment.

The vital relation which the fitness and adaptation of the plant as a whole to its environment, its output, its situation in regard to the cost of material and labor, the zeal and intelligence with which its operations are carried on to the question of low prices are so obvious as to need no elaboration. They are facts, however, which, save in the matter of technical skill displayed in operation, are entirely local and beyond the control of either the company or the state, and the advantages and disadvantages they impose must be shared or borne by the community and the investment. But,

assuming the conditions that have prevailed and still prevail in the cities of our country that have been attended by a long and uninterrupted prosperity for our gas, electric light and water companies, and also that the tendency of monopoly to grow stagnate and indifferent through not feeling the spur of competition has been resisted and improvements and extensions have been attended to with public spirit, then it is equally obvious that the lighter the capital burden the lower may and should be the prices of the manufactured or supplied article to the consumer. Now as to capitalization:

In view of the fact that the issue of the securities of public service corporations is a joint exercise of authority vested by law in the directors of public service companies and the supervising commissions, the capital burden as a legalized creation is wholly in their hands, and hence the responsibilities as to the effect of its magnitude on consumer and investor must fall on the official bodies who give it lawful existence. What then are the duty and the opportunity of directors and commissions to do a great service to the public by making the burden on the helpless consumer the lightest, his prospect for the lowest prices the brightest and the investors' interest for permanency and security the safest! To accomplish this public-spirited end no labor is too great and none too little to be undergone by commissions and directors; for, with their hearty coöperation there must, or at least *should* follow, good will on the part of the public and solidly progressive stability and usefulness of the companies.

It cannot be conceived that there is place for discussion over the postulate that between two companies, one with and one without a substantial surplus in the plant, that the former is in every way the better for consumer and investor. If this be granted, and a little reflection be given to the matter, the question of capital and devotion of earnings ceases to be academic and boils down to one that is practical and one of business, namely, how shall a surplus with its potential strength be created and preserved, and what shall be the limit for its sufficiency?

A surplus, as we all know, is the fruit of profits, and, in the first instance, has no other source; later, however, it bears a fruit of its own in the way of premium which new incoming capital pays to enjoy the advantages of the old capital. Surplus has its being then as the result of prices; and as the prices which the directors of our gas and electric light and water companies set at such figures as

they see fit, and, without discussing for the moment the reasonableness of these unrestrained established prices as effecting a collective interest of the community in the enterprise, the devotion of resultant profits is equally an unrestrained exercise of the directors' volition. It is in their hands, after interest charges are paid, to say how much shall be distributed to the stockholders, and how much shall go back into the plant to create or maintain a surplus. So if a company has no surplus it is the fault of the directors and whatsoever good may come from it to community and to the investor is lost. This is a fact of such consequence that commissions should have the power, where companies are not creating a surplus over actually paid-up capital or are depleting one that has been created, to intervene and reduce dividends until the property has gained or regained a workable surplus. In the early days of our gas and electric companies such prices were fixed and conservative policies pursued as to dividends, that the result was that the companies in our growing cities had more or less substantial surpluses, with corresponding increase in the value of the stock.

Then, unfortunately for the consumer and to the misfortune of many an investor, came the day of reckless speculation in the securities of our gas and electric companies. For suddenly a band of financial adventurers, headed by Addicks, invaded the field. The old stockholders, who with courage and shrewdness had built up the plants, unwilling to face unscrupulous enemies, sold out at great profit, and, having seized control, the buyers at once began to prey on the surpluses by converting them into first and second mortgage bonds, preferred and heavily watered stock. This astounding exhibition of high finance, capitalizing not only surpluses but future earnings, has aroused the public to a thoughtful and serious inquiry as to its rights in these surpluses and the devotion of the monopolies' earnings. Hence the conflict, now raging before the courts between the speculators in our gas and electric companies and the public, became inevitable.

The legal battle ground is over two propositions: has the public that has created these surpluses, in addition to paying fair dividends, a collective interest in them which in the nature of things can only be reflected in rates? The second is: is the obligation of their capital burden based on the paid-up capital that has come out of the pockets of stockholders, or are they bound to pay on valua-

tions, including organization charges, overhead charges, franchise and going concern values, made by professional experts hired by the companies, on the one hand, and by the public on the other hand? I think that sooner or later our courts will falter before this proposition. For if it be finally held by our courts in rate cases that the reproductive value of the plant is the unqualified measure of the consumers' burden, regardless of the amount paid in by stockholders out of their own pockets, then there would seem to be little call for the state to bother itself about the issues of securities, either as to their amount or the conditions under which they may be authorized. Once the experts' figures thrown in the balance are the determining factors for justice, what becomes of the weight of public policy and the financial history of the surplus?

Some light is thrown on this battle ground in Massachusetts from the policy of the state itself and from the decisions of its board. As early as 1867 the state prohibited the capitalization of profits. In 1894 the board in a decision, ordering a reduction of rates, had this to say as to the obligation of consumers which touches the question of capitalization and devotion of earnings:

When gas reaches the consumer it is burdened with three obligations: first, its fair cost; second, a fair dividend on a reasonable amount of capital; and third, such excess as will give the company sufficient surplus to enable it to meet extraordinary accidents and conduct its business with the highest economy. The consumer is in duty bound to pay these charges. If he pays more and the company converts this excess into new capital, increasing it to a figure beyond the fair amount demanded by the business, the consumer is burdened with too high a price for the gas in the first instance and thereafter with a dividend charge upon his own contributions. A company which pursues this policy and to this extent fails to appreciate its obligations to its customers must sooner or later pay the penalty. The growth of the company's capital and its policy in reference thereto are recognized by this board as facts which it is proper and necessary to consider in adjusting complaints by consumers.

Finally I believe that commission regulation cannot be successful without guarding against an excess of capital, and that rates fixed either by courts or commissions must reflect the consumers' inalienable equity in whatsoever there may be in the plant which they directly, or society indirectly, may have contributed in the way of accretions to values.

CERTAIN PRINCIPLES OF VALUATION IN RATE CASES

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As the valuation problem develops it becomes increasingly clear that the term "value" may be properly used in several different senses, and that what is value for one purpose is not necessarily value for another. The best results are undoubtedly obtained when the problem of valuation is worked out solely with reference to what is just and reasonable with regard to the specific purpose for which the valuation is to be used. Certain facts and certain elements of value will doubtless be considered in arriving at a judgment as to value for tax or rate or purchase purposes. This is particularly true of the important fact of cost of physical property, both actual cost and reproduction cost. But the degree of consideration given to certain facts may vary greatly with the purpose of the valuation, and certain facts and elements may be considered for one purpose and entirely excluded for another. This principle seems to be fully recognized in almost all of the recent court and commission decisions in relation to fair value for rate purposes.

Standard of Value

It has frequently been stated that there can be no rule or formula for the determination of fair value for rate purposes. Each case must be considered on its own merits, and such result or value arrived at as may be "just and right in each case." "It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts."¹ The supreme court has gone no further than to state that it is present, as distinct from past, fair value that is to be determined, and to mention certain of the elements to be considered in such determination. The court, however, has given no indication as to how these various elements should be combined to produce the final result. It does not indicate the

¹ The Minnesota Rate Cases, 230 U. S. 353, 434, June 9, 1913.

relative weight to be attached to the various elements nor does it indicate that in a particular case any weight need attach to certain elements. In view of the complexity of the problem it is probably fortunate that the courts have not as yet attempted a more illuminating definition of fair value. It is recognized that the entire problem is in a developmental stage and that there is danger of creating precedents that may compromise future action when the entire problem has been more fully disclosed.

In considering fair value for rate purposes it is important to bear constantly in mind that the determination of fair value is a part of the process of determining a reasonable rate of charge. By reasonable rate as here used we mean the reasonableness of the rate schedule as a whole and not the adjustment of the various specific rates that go to make up the complete rate schedule. A reasonable rate of charge in the sense of a reasonable rate schedule is a rate that gives the company reasonable compensation for the entire service which it renders the public. In the case of an appropriate and normally successful public utility enterprise, reasonable compensation is equivalent to the normal cost of production. Normal cost of production includes normal operating expenses plus a normal rate of return on a normal capital cost. The aim of public regulation is to accomplish what in other industries is assumed to be accomplished automatically by free competition, that is, to limit the price charged to the normal cost of production. There is no reason why in the case of a virtual monopoly the public should be required to pay more than the normal cost of production, and sound reason why in the long run the public cannot pay less. Normal cost of production is the amount which in the long run it is necessary to pay to secure the utilities demanded by the public. It is the amount that will secure an equilibrium between demand and supply.

In the case of a commodity requiring a large fixed investment the determination of a normal cost of production is a complex process, in the working out of which there is room for a wide divergence of opinion. To the normal cost of labor and materials there must be added a fair estimate for depreciation and a fair return on capital cost. The determination of a normal return upon a normal capital cost requires the determination of two very difficult and complex problems: (1) What is the amount of the normal capital cost, and, (2) what constitutes a normal return on such amount. Normal capi-

tal cost as applied to a new enterprise is a comparatively simple concept. But what is it as applied to a long-established enterprise—to a water supply plant, a gas plant or a railroad system? Is it normal cost at the time originally installed or last renewed, or, on the other hand, is it the present cost of reproduction? Is it actual cost or reproduction cost?

Appraisals of physical property considered in rate cases have largely been estimates of reproduction cost. The reproduction theory in its strict form involves the reproduction of the service rather than the reproduction of the identical plant. If the old plant were wiped out what would it cost at present to construct and operate a plant capable of performing the service now performed by the old plant? As thus stated, the reproduction method has so many difficulties that it is practically never employed. In most cases it is exceedingly difficult and expensive to determine the design of an equally efficient substitute plant. In the case of a railroad, for example, the cost of determining a substitute location and of estimating the operating cost thereon would be so great as to render it entirely impracticable as a factor in rate regulation. The cost of reproduction in practice, therefore, instead of meaning the cost of a substitute plant of the most modern approved design, capable of performing the same service as the existing plant, has come to mean the cost of a substantially identical reproduction of the existing plant. By a further modification of the cost of reproduction method which is coming more and more into use, the cost of reproduction is made to mean not the cost at present prices of land, labor and materials, of reproducing a substantially identical plant under *present conditions*, but the cost at present prices of land, labor and materials of reproducing a substantially identical plant under the *actual conditions* under which the existing plant was originally constructed. Under this method expenditures actually incurred in the development of the present property are fully allowed for, even though they would not be met with in a reproduction of an identical substitute plant. On the other hand, certain expenditures that have not been incurred in the development of the existing property but would be incurred in the reproduction of the existing property, are excluded. The reproduction method has been modified by the practical difficulties in the way of its strict application, and by the recognized equities created by actual cost and actual investment.

In failing to give even more consideration to actual cost in determining fair value, commissions and courts have often stated that the actual cost was impossible of determination. This it seems has been largely the result of a somewhat confused conception of actual cost. Actual cost properly considered may in a great majority of cases be determined with at least as great accuracy as reproduction cost. The confusion has arisen from identification of actual cost with book cost or first cost of original units, or both. Properly speaking, actual cost is the first cost of the identical units now in use and not the first cost of the original units. A first essential to the determination of either actual cost or reproduction cost is a complete inventory of property units in use. A second essential in both cases is the determination of the approximate time at which each such unit was installed. Records are usually available showing for any period the prevailing prices of labor and materials entering into construction costs. From such records, supplemented in many cases by fragmentary data obtainable from the books of the company, it is possible to apply unit costs. It is believed that such estimates will in most cases come nearer to the true actual cost than will present estimates of reproduction cost come to the true reproduction cost.

The St. Louis Public Service Commission has practically adopted actual cost as its standard as applied to structures and equipment, but in the case of land has used present market value. The New Hampshire Public Service Commission seems inclined to use actual cost as the normal controlling standard. The Nebraska commission, while adopting reproduction cost as the only practical method of obtaining a starting point, has recognized actual investment as the standard which should govern the future relations of the utility company and the public. The decisions of the California, Wisconsin and New York commissions show that they are inclined to give great weight to actual cost when such cost has been established.

The determination of a standard of value applicable to existing utilities will be worked out, if at all, by the slow and piecemeal process of court decision in numerous cases. The final answer can be given only by the supreme court of the United States. It would seem, however, that, as to the future, legislative bodies and commissions might at once adopt a standard. If normal actual capital cost were adopted as the rule for the future with reference to appropriately

located and successful enterprises, rate regulation and accounting methods would be much simplified and the relations between the utilities and the public placed on a much more equitable and dependable basis.

Land

In spite of the evident desire of a number of the commissions to give great weight to actual investment in determining fair value, an exception has apparently been made in the case of land. Here the decisions of the supreme court, stating that it is present value that is to be ascertained, have seemed to require that land should be taken either at its present market value or its reproduction cost.

In its decision in the Minnesota rate cases² the United States supreme court says that while "it is clear that in ascertaining the present value we are not limited to the consideration of the amount of the actual investment," yet there is no just ground for placing a value on railway lands in excess of the actual investment and in excess of the value of similar property owned by others merely on account of a conjectural cost of acquisition and consequential damages, and on account of percentages or other overhead expenses. The court concluded that "The company would certainly have no ground for complaint if it were allowed a value for these lands equal to the fair average market value of other land in the vicinity without additions by the use of multipliers or otherwise to cover hypothetical outlays."

In the case under consideration, the increment in the land value had been much more than adequate to cover all costs of acquisition and consequential damages, including any overhead expenses incurred for engineering, superintendence, legal expenses or for interest or taxes during construction. If the case had been that of a new road where there had been no increment in land value to offset these expenses connected with the acquisition of the land, it does not seem probable that the court would have refused to consider them in fixing the fair value for rate purposes. It seems that through the application of the principle laid down by the court in the Minnesota rate cases all of the advantage due to increment in land value does not inure to the benefit of the public service company, but that such increment is first used to offset or amortize all capital expenditures incurred in the acqui-

² *Ibid.* 353.

tion of the land and the carrying charges on such outlay during the period of construction.

It seems, therefore, that in the case of railway land the court will measure the allowance chiefly by the market value of neighboring lands, but that it will also give some consideration at least to the actual cost to the railroad of acquiring its lands in case such cost is greater than the present market value of the land for other than railroad uses. The court specifically rejects the cost of reproduction method of estimating the value of railway land. In this it apparently makes a distinction between land and other physical property. Possibly such distinction is made on the theory that railway land differs from other railway structures in that it has a definite value for other uses. It is clear that railway structures other than land would have merely a scrap value for other than railway uses. The difference here, however, is merely one of degree, and its importance is greatly overestimated. Railway land can not be disposed of for other uses without scrapping the entire property. If a railroad right of way were sold for farm purposes, the loss due to the scrapping of the roadbed would more than offset any increment in the selling price of the land.

As we have already noted, fair value for rate purposes in the case of a virtual monopoly can not properly be based on exchange or market value. Value when used to denote the amount on which such a company shall be allowed to earn a fair return is normally based on cost, either actual cost or reproduction cost. It seems illogical to introduce any question of market or exchange value unless such market or exchange value has a direct bearing on either actual cost or reproduction cost.

Actual cost seems particularly appropriate as a standard of value in the case of land used by a public utility. Rates of charge should not be affected by real estate activity or reactions. The public utility is not formed to speculate in land. Though some compromise may be desirable as to the past, actual cost should be adopted as the normal standard for the future. But if this is not done it will be logical and just that appreciation in land value be treated as income or considered in fixing the rate of return. There can be no doubt that appreciation *upon which a return is earned* does constitute a profit of a very real sort. If a company claims a return on appreciated value it cannot equitably hold that such appreciation does not constitute a part of its income. Increments and profits of every kind

enjoyed by a company must necessarily be considered a part of the total compensation that the company receives from the public. In so far as there are increments and profits arising from increase in land values it is clear that such increments and profits should in a rate proceeding be considered either as income or as an offset in fixing the rate of return.

Pavement over Mains

Courts and commissions almost without exception have in numerous cases refused to include in fair value for rate purposes the cost of reproducing pavement laid over mains without expense to the company. Under the strict reproduction method such pavement would be included, as the existing plant and mains could not be reproduced without cutting through and reproducing the pavement. In refusing to include pavement laid without expense to the companies the commissions are in effect applying the modified reproduction method, that is, using the cost of reproduction at present prices of labor and materials but under the physical conditions under which the existing property was actually constructed.

In the Consolidated Gas case, Justice Peckham in delivering the opinion of the court made a general statement in regard to including property at its present appreciated value, which, while doubtless intended chiefly to apply to land valuation, might also be construed to include the valuation of mains and services, and thus to decide that the present replacement value of the mains should be considered regardless of the question of pavement laid by the city. The courts and commissions have not in general construed Justice Peckham's opinion in this way, and the more recent opinion of the court in the Minnesota rate cases rejecting the reproduction method as applied to land seems to confirm the belief that when the question of pavement over mains comes squarely before the supreme court the reproduction method in its strict form will also be rejected as applied to this item of property.

Accrued Depreciation

The United States supreme court in two cases has held that there must be a deduction from cost new to cover accrued depreciation in determining fair value for rate purposes.³ Following this ruling

³ *Knoxville vs. Water Company*, 212 U. S. 1, Jan. 4, 1909. *Minnesota Rate Cases*, 230 U. S. 352, June 9, 1913.

of the highest court the commissions have almost unanimously based fair value on cost-less-depreciation. The principal exception is that of the St. Louis Public Service Commission. In its report on the Southwestern Telegraph and Telephone Company, October 14, 1913, the St. Louis commission says, "Where there has been no regulation in the past and where it can be shown that there was no necessity of establishing a depreciation fund equal to the consumption of estimated life of each item of equipment, deduction for theoretical depreciation in a rate case involving a large 'piecemeal' built property in a normal and efficient state becomes in fact merely a confiscation of past profits."

Depreciation is a problem in cost accounting. It is concerned with the allocation to each year's operating accounts of the waste in the instruments of production attributable to the year's operations. The cost of materials purchased and entirely consumed in the course of the year's operations is invariably included in ordinary operating expenses. The capital required to purchase and carry such materials during the turn-over period is a part of the working capital. But some materials or instruments of production are not used up during the first year but have a life of 3, 10, 20, 50 and 100 years. They are consumed in operation just as surely as the former and constitute just as real a part of the cost of production. Their cost (exclusive of scrap value) must, however, be distributed over the full life period. The capital required to purchase and carry these long-lived consumable materials may also be considered a part of the working capital. It is this element of interest on capital that so greatly complicates the depreciation problem.

Depreciation is concerned with the maintenance of the integrity of the investment in depreciable property at a uniform annual cost. Such costs cannot be determined without some reference to interest on reserves and investment. The entire problem, therefore, may be simplified by considering depreciation as the adjustment necessary to secure a uniform investment cost. The supply of a public service must be considered a continuous process. Management or ownership may change but the plant and the service and the depreciation process are assumed to go on forever. The annual investment cost includes not only interest but also the repairs, renewals and replacements necessary to keep the property permanently in good working condition. The rights of the consumers using the supply at different periods de-

mand that the annual charges attributed directly to the investment shall be as uniform as possible.

As a problem in cost accounting the accrued depreciation and the annual allowance for depreciation are interdependent. Our theory in regard to an annual allowance for depreciation will necessarily control that in relation to the amount of accrued depreciation and vice versa.

It needs no extended argument to demonstrate that, if the moneys paid into the depreciation reserve are assumed to accumulate at compound interest for the sole benefit of the depreciation reserve, they do not constitute a return to the owner of any part of his original investment. Unless, therefore, he is allowed to earn a return on cost-new, a part of his actual investment is confiscated. There are, however, serious objections to the sinking-fund method of allowing for depreciation. It is assumed that a fund is set aside and made to accumulate at a prescribed rate of interest. Presumably it is to be invested in outside securities and kept as an entirely distinct fund. The assumption of a separate fund greatly complicates the accounts. It is usually merely an assumption both as to its existence and as to the rate at which it accumulates. Business practice recognizes that ordinarily the most natural, the most secure and the most profitable use that can be made of a depreciation reserve is to retain it in the business to meet the additional capital requirements for plant and working capital. Fundamentally the depreciation reserve is a part of the entire capital needed to carry on the enterprise. There is no reason why a part of the total capital should be set apart and assumed to accumulate at a rate different from that earned on the entire investment. The entire enterprise is a unit and the profits, whatever they may be, are the earnings of the entire investment. One part of the investment should not be assumed to earn at an arbitrary rate and the rest at a different rate.

The depreciation reserve is built up during the early years of the enterprise. It is during such earlier years that the payments into the depreciation reserve are normally greater than the annual expenditures for renewal. When a utility has settled down to a constant average of wear and age, the annual allowance for depreciation is, under the straight-line method, about equal to the annual expenditures for renewal, and, under the sinking-fund method, much less than such annual expenditures. As almost every utility is built

somewhat on the piecemeal plan and as it particularly is true that there are normally a considerable number of additions to capital during the first twenty years of an enterprise, there would seem to be abundant opportunity for the investment of the entire depreciation reserve in such additions. It is also to be noted that a large part of this reserve may be invested *permanently* in the business. When a utility has settled down to a constant average of wear and age, the depreciation reserve remains at a constant percentage of cost-new. It is particularly appropriate, therefore, that this permanent reserve should be permanently invested in the business. And if this is done why should it be assumed to be earning for a depreciation fund at the rate of 4 per cent while the business as a whole is earning 6 per cent?

The uniform investment-charge method takes account of the fact that ordinarily the safest and best use that can be made of a depreciation reserve is to invest it in the business; that the reserve, therefore, becomes an integral part of the entire business and cannot be assumed to earn at a different rate from that of the business as a whole; that the expenditures for renewals in the earlier years are much less than later when the *average* age of the various units constituting the plant is at a maximum; that the depreciation reserve is for the most part accumulated from the excess of the depreciation allowance over the actual renewals during the earlier years; that investment of the reserve in the business decreases the amount of capital to be furnished by the owners and correspondingly decreases the percentage return *as based on cost-new*.

With a declining percentage return as based on cost-new the only way to secure a uniform combined annual charge for interest and depreciation is so to adjust the depreciation allowance that the increase in percentage charge for depreciation based on cost-new will exactly offset the decline in the percentage return.

In order to determine the percentage on cost-new that will provide a uniform annual charge for return plus depreciation, add to the fair rate of return the per cent on cost-new, that, set aside annually and compounded at the same rate of interest as the fair rate of return, will, within the equated life of the depreciable property, exactly equal the cost-new of such depreciable property. Conversely, to find the accrued depreciation in an existing plant under the uniform-annual-investment-charge method, find the amount that should

be in the depreciation reserve, assuming that the annual depreciation allowance had been set aside from the initiation of the enterprise in accordance with the method above described.

Assuming the adoption of the uniform-annual-investment-charge method, the straight-line method or the sinking-fund method as the proper method for the treatment of depreciation as regards a new enterprise or as regards the future of an existing enterprise, is it necessary to qualify such method as regards assumptions as to the past of a company that has heretofore not been subject to regulation? Can we assume that the theory that we apply to the future has been in operation since the initiation of the enterprise? If we determine that the sinking-fund method is upon the whole most just and practicable, can we assume that a fund has been accumulating on this basis and is now earning interest and that the amount of such interest may be deducted from the annual allowance that would otherwise be required to meet current renewals? Or if we adopt the uniform-annual-investment-charge method, can we assume that the depreciation reserve is equal to the amount that it should have reached had this method been applied from the initiation of the enterprise and that, therefore, it is just to deduct this amount from cost-new to determine fair value for rate purposes? It seems that both these questions must be answered in the affirmative. There is no question that depreciation is an operating expense. There is no question but that it is an expense that must by some method be apportioned over the entire life of the depreciable property. There is no way that this can be done except by apportioning a fair share of the burden to the operating expenses of each year since the initiation of the enterprise. To be sure there may be cases where the past profits of an enterprise have been insufficient to pay a fair rate of return and at the same time set aside a proper depreciation reserve. The situation may demand that, in prescribing regulations for the future, the company be allowed to reimburse out of the earnings the amounts by which past earnings have failed to provide an amount adequate to pay operating expenses including depreciation and a fair return on the investment. It is important to note that this shortage is properly treated as a deficit to be reimbursed and not as additional outlay to be capitalized.

Going Value

We may take it as an established principle that the determination of fair value for rate purposes is normally one step in the process of determining what is a fair cost of production. Fair value is therefore normally based on cost, either actual cost or replacement cost. When, therefore, we speak of going value as an element of fair value for rate purposes it must be assumed that such value will be based on a necessary cost actually entering into the cost of production. It cannot logically be based on any monopoly or good will element, or any estimate of the value in money to the company of its developed earning power. As a reasonable rate of return is normally based on cost of production, either assuming the actual investment or assuming a present reproduction of the property, it would seem that going value must either be based on the actual cost of establishing the business or on the estimated cost of reproducing the business. This in general has been the attitude of courts and commissions in so far as they have considered going value in the determination of reasonable rates.

Courts and commissions have in most cases in recent years considered going value as the actual cost of establishing the business. The rule laid down in many cases by the Wisconsin Railroad Commission, and followed by various other authorities, is to consider as going value the uncompensated losses incurred in the development of the business. That is, going value is ordinarily the amount by which early failure to earn a fair return has not been offset by subsequent earnings in excess of a fair return. A few authorities, notably the two New York commissions, have approved in general this method of determining the cost of establishing the business, but have maintained that, inasmuch as it is only the net or uncompensated loss that is considered, it is scarcely appropriate to include such cost in fair value. It is more appropriately allowed for in the rate of return. If returns are impaired while the business is being established it seems appropriate that the impairment should be reimbursed by more liberal returns in profitable years. Under the theory adopted by the Wisconsin commission the cost of establishing the business is not a permanent sum, but varies from year to year as it is increased by failure to earn a fair return or reduced by returns in excess of a fair amount. It is treated not as a part of the capital

cost but as an amount to be reimbursed out of future earnings. It seems inconsistent, therefore, to consider such cost a part of fair value. It is appropriate to allow for it in fixing the rate of return.

In some exceptional cases public utility enterprises may find it necessary under conservative management to capitalize business development costs. Ordinarily, however, this is unnecessary and would be considered poor business management. The better way is to forego dividends until earnings are adequate to cover ordinary operating expenses, cost of securing new business and interest on bonds. As this is the rule approved by the best practice it seems appropriate to assume its existence in determining cost of production as the basis for a reasonable rate of charge. Ordinarily, therefore, cost of establishing the business will not be included in capital cost but will be reimbursed out of earnings.

In opposition to the method of reimbursing out of earnings the cost of establishing the business, it is argued that such cost is as much a part of the capital cost as is the cost of the physical property. This being so it is a cost that should be paid for by all users throughout the life of the utility and not by the users of the earlier years. By reimbursing this cost out of earnings the consumers during the period of such reimbursement are taxed for something that will be of as much benefit to the future consumers as to themselves. This argument is not convincing. The public as users of public utilities are as much interested in the future as in the present. Public policy with relation to public utility rates cannot be limited by an estimate of cost to a particular consumer at a particular moment. Public policy will look to the future as well as to the present, and adopt the rate policy that offers the largest measure of public advantage, even though the chief advantage be secured by future consumers rather than by those of the present. The rate paying public can well afford to bear the temporary extra cost of amortizing all intangible and questionable elements of capital cost. This will tend to safeguard the actual investment of the security holders and to reduce the cost of production and the rate of charge.

The New Jersey commission has included in going value not only the early deficits but also the cost of getting new business, including the cost of new business obtained in recent years and charged to operating expenses. In the case in question the commission had

to do with a heretofore unregulated utility. The inference is that, if a utility while subject to regulation charges the cost of obtaining new business to operating expenses, it will not be allowed to include such costs in the fair value of its property in any subsequent rate regulation proceeding.

Most commissions in considering the cost of establishing the business have considered the estimated actual cost and not the estimated reproduction cost of such establishment. Even where commissions have relied upon the reproduction method in determining the cost of the physical property, they have usually tried to estimate the actual rather than the reproduction cost of the established business. This seems strange in view of the fact that it is much more difficult to determine the actual cost of establishing the business than it is to determine the actual cost of physical property when such cost is taken as the first cost of the units now in place. A reason for turning to the actual cost method to determine the cost of the established business is found in the fact that it is considered that this allowance should cover only uncompensated losses, or the amount by which early failure to earn a fair return has not been offset by subsequent earnings in excess of a fair return. If this principle is accepted it is clear that a hypothetical reproduction process could scarcely be applied.

In a few recent cases the Wisconsin commission has considered an estimate of the cost of reproducing a paying business in fixing fair value. The reproduction method as thus used is not the comparative plant method, but an estimate of the losses that would be incurred assuming that the enterprise were to be started under present conditions. It only includes failure to earn a fair return up to the time when it is estimated that the business will have been placed on a paying basis. The estimate under this method is naturally much less than would ordinarily be found under the comparative plant method, and is ordinarily also less than the probable actual cost to the company of developing its business.

Franchise Value

The actual necessary cost of obtaining a franchise should, of course, be included in a valuation for rate purposes. Other than this the weight of practice and authority is distinctly against the

inclusion of an allowance for franchise value in a valuation for rate purposes. This position seems to be economically sound. There are two distinct functions of the franchise: One is to guarantee the integrity of the investment and the other is to make it possible for the investor to secure a reasonable reward for his enterprise in establishing the plant or railroad. The integrity of the investment is scrupulously recognized and provided for if in a valuation for rate purposes the tangible property is recognized as being rightfully in the streets or public places, and each part is valued with reference to its use in the existing operating system and not simply at its value as scrap. The function of the franchise in insuring to the investor the opportunity to secure if possible a reasonable reward for his enterprise and risk in establishing the public utility is recognized and provided for in a rate case if a rate of return on actual investment is allowed commensurate with the risk assumed. If the rate of return is fair and is based on the entire actual investment nothing further can in reason be expected.

A great deal of confusion has arisen in the consideration of this subject owing to a failure to see the fundamental distinction between valuation for rate making and valuation for public purchase. It is recognized that in a condemnation case the value of the franchise must be included. From this it is argued that unless the franchise is included also in the valuation for rate making the value of the franchise is in effect confiscated. If it is wrong and illegal to confiscate the value of the franchise in a condemnation case it is just as wrong and presumably just as illegal to confiscate such value indirectly through the rate making process. Deprivation of compensation for the use of property is no less confiscation than the actual taking of the property. The fallacy arises in a failure to realize that though in a condemnation case the valuation is the all important factor, in the determination of reasonable rates the essential thing is the total net income; and that this net income is not measured by the valuation alone but by the product of the valuation and the rate of return. If the capitalized value of the total net income allowed in a rate case is the same as the valuation for purchase purposes, due consideration will have been given to the franchise in both cases, even though in the valuation for purchase there has been a specific allowance for the franchise and in the valuation for rate purposes there has been no such allowance.

In a rate case due consideration is given to the franchise rights in the determination of the fair rate of return. The fact that the rate of return is fixed on the basis of a return adequate to induce investment in a new enterprise, although now that the enterprise in question has been successfully established persons will invest on a lower return basis, is a substantial recognition of the rights that it is the function of the franchise to protect. The franchise having thus been allowed for in the rate of return, it would be duplication to allow for it again in the valuation on which the rates are based.

DEPRECIATION

BY JAMES E. ALLISON,

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I

In public valuation for rate-making purposes there is probably more at stake in the problem of so-called depreciation than in any other one element. Yet a clear conception of what depreciation means and how and when it should be applied or omitted as an element in so-called valuations is rare among the engineers, commissions and courts upon whom rests the responsibility of determining the status of hundreds of millions of public service property.

To have a clear conception of the problem it is necessary in the first place to understand clearly in each case just what is meant by the term "value" or "fair value." To say that a property is worth so much money might mean that the sum arrived at is the one which in the judgment of the speaker the property ought to bring or he might mean that the amount stated was the sum which in his judgment it would bring under conditions of sale. In handling the discussion it is probably necessary to limit the meaning of the word "value," when unqualified, to the exchange value in money. In fact when we measure any value in money we must mean an exchange value and if the term value is unqualified it must mean that sum which the property in all likelihood *would* bring at a fair sale.

It should be evident that, in the case of public service properties, the value of the property as a whole means its value as an investment and the controlling factor in the value of an investment is the return upon the investment and the stability of that return. If this is true it must follow that the "present value" of a public service property depends largely upon the present net returns and their stability and that any change in rates or regulation of service which will change the returns will change the present value of the property. Therefore, if as is so often stated by commissions and courts, the object of so-called valuation work is to obtain "present value" the

very statement would prohibit any change in rates or operating expenses affecting the returns.

That there are other elements going to make up the present value of the property besides the net returns may be true but these elements are in fact subsidiary elements to the factor of net returns. If for instance a property is in a bad condition; in determining its present value the important circumstance to the prospective buyer or investor is that he will be deprived of returns upon his investment in order to put the property in condition or he will be obliged to make an added investment to bring it into condition and thus cut his rate of return on the whole capital invested. If we concede as seems necessary that in a rate or service regulation case the present value cannot be obtained unless it is granted that there is to be no change in the rates or expenses of service (which would make the whole work of valuation useless) then the necessary conclusion must be that the object of so-called valuation for rate making or regulation purposes is not to obtain a "present value."

It would seem that the only possible and the only dependable object of valuation work is to obtain what may be called a "just amount" upon which the investor should be allowed to earn reasonable returns. While this amount may or may not closely approximate a present exchange value this circumstance is merely accidental and the two things are fundamentally different in principle.

The history of values as established by our courts shows that, in the era preceding attempts at valuation for rate-making purposes, the principal object in establishing any value was for the purpose of sale under condemnation or for taxing purposes. In either of these cases it is seen that justice is accomplished by comparison; that is, if in the condemnation the owner receives a value comparing with what would be received under free sale for similar property he is justly treated and if the owner is taxed in proper comparison with other owners possessing property of similar exchange value he also will be justly treated, therefore the probable present exchange value of the property was properly the object sought.

The courts, and following them some of the public service commissions, have never been able to clear their minds of this idea of obtaining present exchange value in rate cases. They have of necessity recognized, however, that, in rate cases, the present returns, although the principal factor in determining present value, could not

be taken into consideration. They have, therefore, been forced to take the first step in a correct method of arriving at a "just amount" to be earned on. This step is a so-called valuation of the property by means of an inventory and assignment of unit costs, together with estimates of costs of establishing a going business, etc. It is seen that this step is not directly toward ascertaining present exchange value of the property as a whole but merely arrives at a summation of costs or at the present real investment in the service of the public.

Having ascertained as nearly as possible the full investment or full costs of the present property and organization in the service of the public, in other words having ascertained the money efficiently sacrificed by the investor to serve the public, the courts and commissions have then suffered mental lapse by introducing the question of present exchange value and have tried to arrive at it by saying "this property is not new therefore cannot be *worth* so much as when it was new, therefore we will depreciate it in an attempt to arrive at a present exchange value."

This reasoning attempts to arrive at a present exchange value of the property as a whole, first, by using the factor of costs or investment which in principle has little or nothing to do with present exchange value and second by using the age or condition of the property, which affect present exchange value only in so far as they influence returns. Fortunately in the principal decisions of the higher courts the term used in describing the object of public valuation is "*fair value*," and although what should be its true meaning has been much obscured by the muddled reasoning of the courts, yet it may be interpreted to mean that the result of a valuation will be such as, when a proper rate of return is allowed, will justly compensate the investor for his efficient sacrifices in the service of the public.

II

In applying depreciation calculations to properties, the engineers or accountants have developed two fundamental methods. One is called depreciation by observation of condition and the other depreciation by estimated remainder of life.

Depreciation by observation means merely that some one fully acquainted with all the parts or items of property similar to the one under consideration shall view the property carefully and estimate

how much it has been damaged by use and by deterioration due to natural causes and then in most cases shall estimate the loss in value due to progress in the art since the installation of the equipment and shall also estimate loss in value due to the changing conditions or prospective change of conditions in the services demanded.

Under the observation method it is supposed that the results are arrived at merely by judgment and with no definite rules or mathematical calculation. It will be seen later that the elements involved in such exercises of judgment are exactly similar to elements which are mathematically taken into consideration under the method of depreciating by calculated remainder of life, but it is also evident that, in establishing depreciation by observation, widely different results might be obtained by different men, each sincere in his attempt to reach an honest conclusion. Even the state of digestion of the valuator, the weather, or any thing which might influence his temperament could in all seriousness have a material effect on his opinion of the state of the property, and his friendship for or opposition to the owners of the property could have and probably would have a very marked effect on his conclusions without any conscious dishonesty or insincerity on his part.

The second method of depreciation by calculation of remainder of life is merely a refinement of the observation method and introduces mathematical steps which in themselves are correct but which unfortunately are based upon data whose correctness cannot be established in most cases. This method, therefore, on account of the speciousness of correct calculations based on unreliable data is dangerous and has in all probability caused a great amount of injustice to be accepted by the victims because the very speciousness of the method has persuaded them that the results were logical.

The controlling factor in depreciation by the remainder of life method is the estimated duration of life assigned to the item of equipment upon which the depreciation is to be calculated. With the exception of very few of the items of equipment of public service properties (especially the municipal utilities) there does not exist any correct collection of data which will give reliable periods of useful life to the different items of equipment used. There may be more or less correct collections of data on such equipment as poles or railroad ties, which will give an approximately correct average life on this kind of equipment, and it might be that on these items,

where the forces of nature are the principal destructive agents, the average life will not in most cases vary greatly as between different properties. Even this statement is, however, somewhat broad and unreliable and a correct application of an average would depend considerably upon the size of the property. If we were calculating depreciation on all the poles in the United States or on a company whose property was scattered throughout the country, the average life might bring a just result. But on the other hand, if we were calculating on a small property where local soil conditions or other natural destructive forces were in any way peculiar, our results would not be correct.

Departing from such equipment as poles and ties it can be said that the life of similar items of equipment of each particular property may vary to such an extent as to make the acceptance of average life, even if correctly obtained, a very reckless proceeding in determining the amount of property upon which investors should receive a reasonable return. The use of the property, the adequacy of its maintenance, the changes in local conditions as to demands for service and many other elements will so influence the life of equipment in any one case that its relationship to any average will be materially distorted.

It has been the custom of engineers and of some commissions to publish life tables in their reports setting forth the estimated life of each particular class of equipment. It may be noticed that nearly all of these tables very closely agree in the estimated life of the different classes of property, and to the layman or even to the superficial technical man, this agreement tends to cause the acceptance of the figures as basic data without much question. The facts are that, on such items as buildings, stationary engines, auxiliaries, piping, etc., there exist no reliable data to base an average estimate of life. On other items such as rails, cars, etc., where the elements of use and maintenance are vital to the life, there can also be no correctly calculated life which will apply throughout the whole class of equipment. On such items as underground conduit or even water and gas piping, time has not yet been long enough to establish life definitely for even local properties. Added to this is the fact that the forces of obsolescence and inadequacy are not capable of calculation. The fact that the before-mentioned tables of

life of equipment do agree very closely is due to nothing except that the first man made a guess and the rest having very little ground upon which to base a difference have followed him very closely.

Depreciation by the method of the remainder of life has been followed out in a number of different systems. The most obvious method, and the simplest, is called the straight line system. This means that the estimated life is taken, say at twenty years and each year the item is supposed to have lost one-twentieth of its original cost or value. Another system is called the sinking fund system by which an estimated life is taken and the property is supposed to have lost each year that amount in value which, if set aside at compound interest, would, at the end of the estimated life, amount to a fund equal to the original cost or value. It is seen by this method that the value of the property is determined to a great extent by the rate of interest at which the depreciation fund may in the future be invested. It is evident that a considerable difference between the present depreciated value of a property might rest on whether the prophesied rate of return on the fund would be 3 per cent or 6 per cent. This system, while somewhat logical for establishing depreciation charges for accounting, is entirely illogical and wholly speculative when used to establish a substitute for present value.

Another system of depreciation by the remainder of life method is sometimes called the diminishing value system. By this method the property is diminished in each year by a fixed percentage of the remainder of value after the deductions for depreciation for preceding years have been made from the principal. This method is very seldom used and is merely an accountant's device for setting up general depreciation charges and, as it has no rational place in establishing a so-called depreciated value of the property as a whole, it need not be dwelt upon here.

In preceding paragraphs it has been the writer's principal aim to show the extreme unreliability of depreciation calculations, even if it were conceded that it were proper to apply depreciation deductions to arrive at an amount upon which reasonable returns should be based. This unreliability of basic data should in itself demonstrate the recklessness with which such calculations have been applied in depriving investors of property by depriving them of the earnings of capital placed in good faith in the service of the public.

III

The general idea of the depreciation of a property as accepted by the layman and as seemingly accepted by many courts and some commissions is that a public service property begins with a value as a whole of 100 per cent and then gradually sinks to zero. This supposition may be theoretically true of one item of property. A boiler for instance begins with a value equal to its cost and of course at the end of its life, whenever that may be, there remains only the scrap or second-hand value.

This steady deterioration in value (measured by remainder of life) from 100 per cent to scrap value may be true of one item of equipment, but it is not true of a whole property. If a property composed of numerous units were installed all at one time, the theoretical depreciation by remainder of life, if it could be correctly calculated, would show that the property as a whole could not reach zero or the composite scrap value until a period of years have lapsed equal to the least common multiple of all the lives correctly estimated for each different class of equipment. In even the simplest property it is evident that this period would theoretically stretch out into centuries. It is assumed in this statement that we are speaking of the composite life of a property and that each particular item of equipment is renewed at the end of its life. If it were not renewed and were a vital part, the value of the whole property would be immediately destroyed by its non-replacement and under these conditions the calculation is correct that the composite life of the whole plant will not be ended until such time as the ends of the renewed lives of all the items of equipment coincide, which will be as stated, at the end of that period which is the least common multiple of all the lives.

The above statement is true of a property built all at one time. But immediately that we install equipment at different times with any two installations having the same life we find that the termination of all the lives of all the equipment will, theoretically, never coincide, and that therefore, the composite value of the property based upon the remainder of life will never reach zero nor the scrap value and that the curve of remainder of life will never ascend to 100 per cent. The curve of the composite remainder of life will in fact describe a series of cycles, each cycle representing the least common

multiple of all the lives. Under ordinary conditions of establishment of utility properties there are successive installations and a constant growth in the property so that, in any property of sufficient size, the curve of the composite remainder of life will eventually tend toward a level halfway between 100 per cent and scrap value.

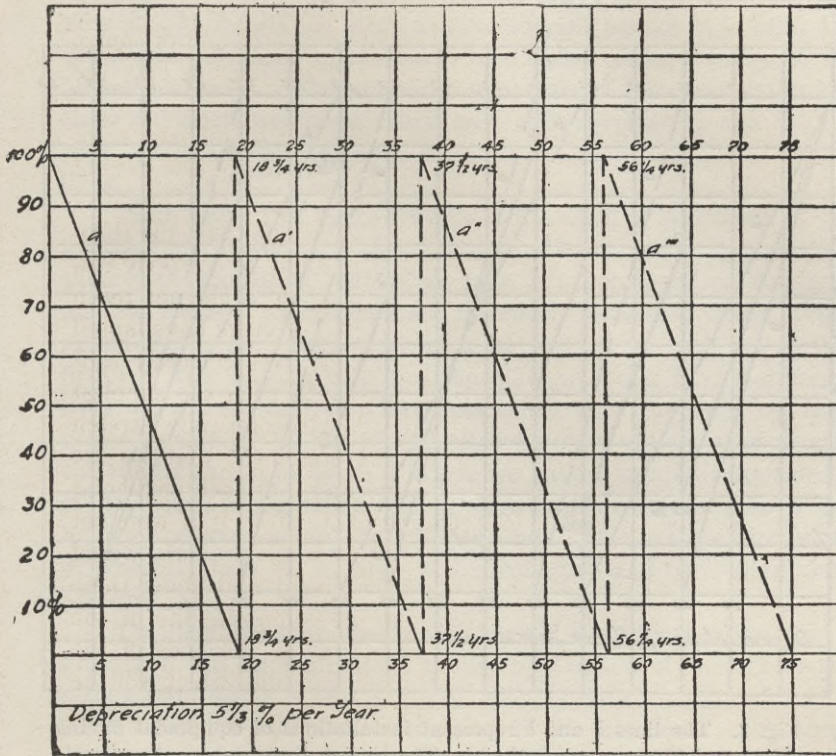


Fig. 1. The line *a* represents one item of equipment with a life of $18\frac{1}{2}$ years. The broken lines *a'* *a''* *a'''* represent successive renewals of *a*. Years are indicated by figures in horizontal lines at top and bottom of diagram.

The foregoing truths and principles pertaining to such composite lives are illustrated in the following diagrams.

Figure 1 shows the remainder of life curve for one item of equipment. It is this curve that is fallaciously accepted by the laymen as the true curve of the life of a property.

Figure 2 shows the effect on the composite remainder of life of even such a simple condition as having only two items of equipment, of equal costs, one with a fifteen-year life and the other with a twenty-five-year life.

It will be seen that the heavy line which represents the mathematical composite life of the two items of equipment or their renewals

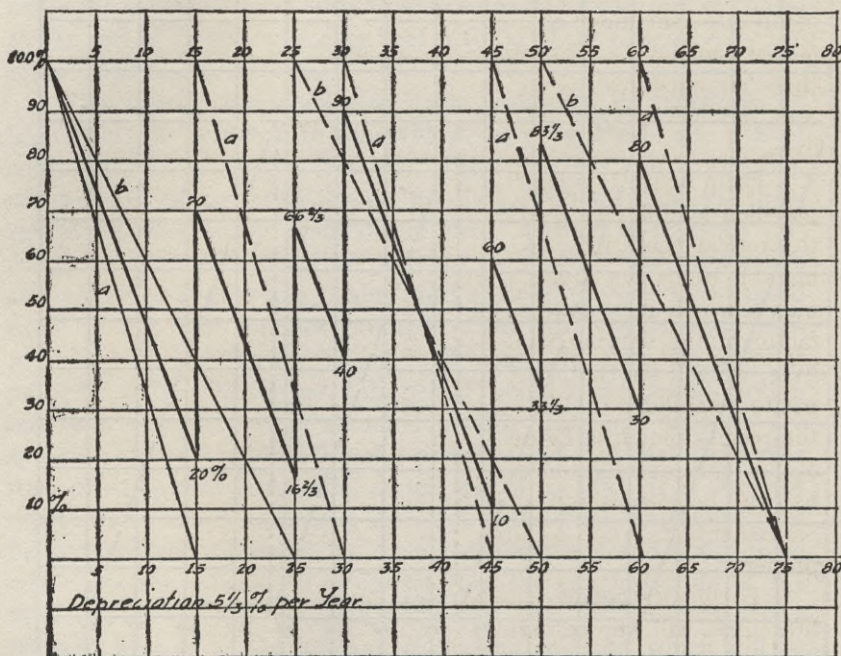


Fig. 2. The lines *a* and *b* represent installations of equipment having lines of 15 and 25 years respectively. The broken lines represent renewals of *a* and *b*. The heavy line represents the composite theoretical remainder of life curve of *a* and *b*. Figures at top and bottom of diagram are years.

does not go straight from 100 per cent to zero, but influenced by successive renewals it takes a course of irregular oscillations across the 50 per cent line, finally reaching zero at the end of seventy-five years when the ends of life of the renewed two items of equipment coincide. Seventy-five years is the least common multiple of fifteen and twenty-five.

Figure 3 shows the effect on the composite remainder of life curve of introducing installations of equipment at different times. The elements in the diagram represent four items of equipment, two having fifteen-year life and two having twenty-five-year life, one item of each life being installed at the beginning of the plant and the other ten years thereafter. It will be seen that the effect of this very simple installation made at two different periods is to bring the composite remainder of life curve into closer correspondence to the 50 per cent level. The composite remainder of life curve can under these circumstances never reach zero and never go to the 100 per cent but will follow cycles of the least common multiple of all the lives.

From figure 1 to figure 3 we trace the effect of added equipment installed at different times and of different lives under the simplest theoretical condition. When we take into consideration the innumerable items of a large plant and the steady leveling of yearly investments which may take place in a large property and the further factor of the varying values of the different items having different lives, we will see that, in a large piecemeal built property, the composite remainder of life curve will eventually closely approximate the results shown in figure 4, where we have a composite remainder of life curve straightened out in close correspondence with a line halfway between scrap and 100 per cent. This is theoretically the permanent state of a large piecemeal-built and well-maintained property.

To illustrate how closely this purely theoretical remainder of life curve will approximate a similar application of the theoretical estimates of life to a real property, there is shown in figure 5 a carefully calculated composite remainder of life line for a large street railway property in actual existence. This curve is built up upon inventory, cost data and estimated life applied to each class of equipment entering into the property.

In this curve it is seen that the composite remainder of life line at times rises nearly 10 per cent above the normal remainder of life line and at times falls nearly 10 per cent below. But this is only a very slight variation, all things considered. It is probable that, if the property is well managed, these variations would tend to disappear owing to the effort to distribute expenditure for renewal as evenly as possible each year. The result of the study of these curves

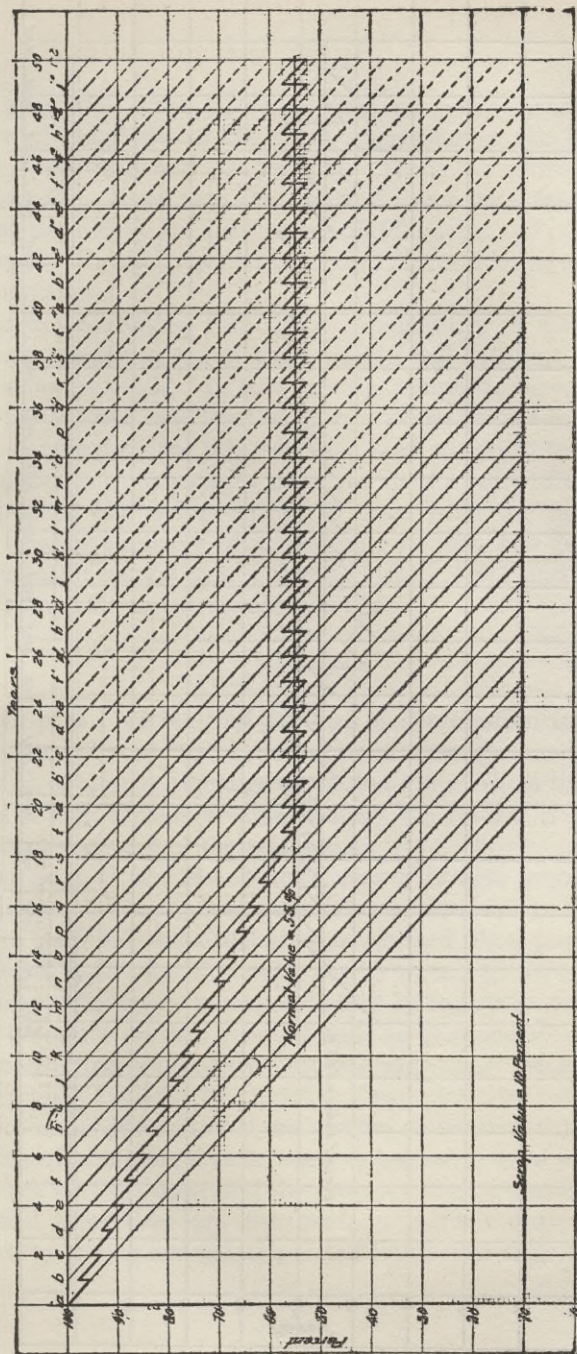


Fig. 4. Lines a to t represent equal annual installments of equipments. Broken lines a' to t' , etc., represent renewals.

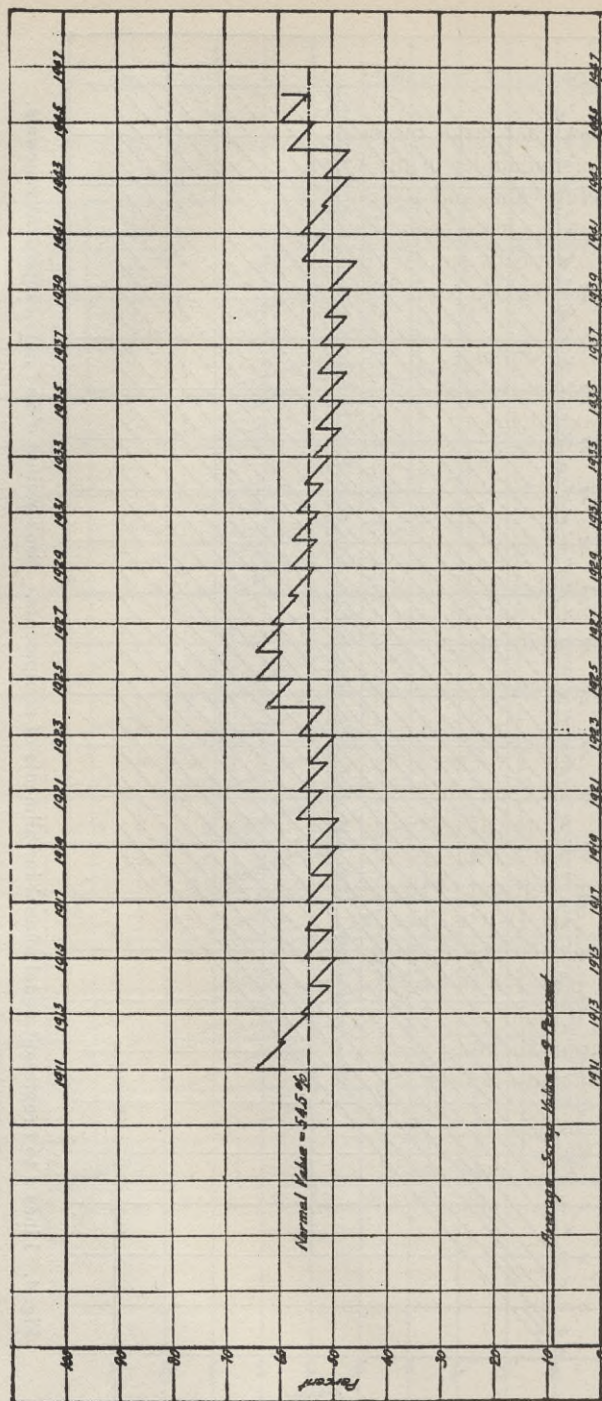


Fig. 5. Total composite theoretical remainder of life curve of the depreciable property of the United Railways Company of St. Louis.

goes to show that large piecemeal-built properties attain a normal condition of remainder of life which approximates the line halfway between scrap value and 100 per cent. While the above conclusions and illustrations have been the result of using the straight line system only, practically similar results will follow the use of the sinking fund system. In this paper there is room for considering only straight line depreciation.

It is not contended that the level remainder of life line or the permanent composite age of the property will continue if additions or extensions are made. In that case the composite curve will ascend toward the 100 per cent level in proportion to the magnitude of the additions and extensions and will then tend to return to the normal level. But this circumstance does not in the least affect the conclusions which the writer wishes to draw from the fact that the present existing property of an enterprise which has gone through the adjustment period has a comparatively level and permanent state of composite age or remainder of life.

Conclusions

From part I we see that any use of depreciation to obtain the capital amount upon which to base returns is merely a useless attempt to establish a present exchange or market value where the only vital factor of a true exchange value, namely the return, is of necessity in a rate case left out of the calculation.

From part II it is shown that, even if it were proper to depreciate, the calculations on estimated life are unreliable in the extreme.

From part III the conclusion is reached that piecemeal-built properties, if maintained, do not come to an end by depreciation but reach an approximately permanent state in regard to composite age and in that state are the most efficient as to economy of operation (maintenance and replacement considered). Any attempt to raise the curve must be done by throwing away property not yet having served its useful life. And if we assume as we ought, that the life of a piece of equipment ends when it begins to give poor service, then we see that the owners of the property are, by maintaining it on the normal theoretical age line, performing their duty toward the consumer by giving service as good if not better than from a new plant.

No one can be so foolish as to assume that investors can construct or maintain a plant which will remain new. But they can maintain it so as to give a service practically as good as from a new plant. The fact is that they really pay their full investment in plant for the normal and permanent state of the plant at which it will give good service continually, and if for any reason a depreciated value should be assigned as the capital to be earned on when the plant is in a permanent state and giving good service, then the amount of such deduction for so-called depreciation might well be called a cost of establishing business and therefore a legitimate part of "fair value."

A study of any theoretical depreciation curve will show that, if the theoretical depreciation charges have been made from the installation of each item, the accumulation in the depreciation fund will always equal the amount of depreciation, i.e., the sum of the depreciated value, and the accumulated fund will always equal the original investment, and, when on account of the straightening out of the curve along the normal age line there cease to be any wide fluctuations for large renewal at any one time, then a great part of the fund will be a needless accumulation as it can never be used for replacement or renewal.

The stock argument of the advocates of allowing earnings only on a depreciated investment is that a large depreciation fund is necessary and that if the company has not laid it by it is evidence that the amount of it has been wrongfully diverted as profits into the pockets of the owners. It has been shown by the preceding diagrams that, in the larger properties at least, the accumulation of a depreciation fund on the basis of estimated life would have been a useless charge upon the consumer or upon the investor as the case may be. So to assume arbitrarily that this theoretical fund should have been set aside by the owners, and if not set aside to penalize them in the earning power of a normal property to the amount of the determined hypothetical fund, is unreasonable in the extreme. Where there could have been no such fund set up in the past without depriving the investor of all or the greater part of the returns as is generally the case, the injustice is evident on its face and where profits have been such as to have enabled the setting up of the fund in addition to the payment of returns the device of depreciating (the fund being needless) becomes merely a means of depriving the investors of past profits which may or may not have been excessive.

Notwithstanding the many respectable authorities who uphold the practice of deduction from earning power on account of theoretical depreciation there appear to be equally respectable reasons for assuming that present exchange value or any attempt at it is not the proper base for returns in rate regulation and that the proper amount to establish as a "fair value" is the capital efficiently placed in the service of the public in order to produce a plant and business in its normal and permanent state.

NON-PHYSICAL OR GOING CONCERN VALUES

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In the appraisal of all public utility properties, whether for rate making or for sale, it is now recognized that a "value" should be assigned to the attached business that gives to the physical plant its real or market value. The "value" of the attached business is often called the "non-physical value" of the property. Sometimes the term "intangible value" is used to designate the "non-physical value." There are several other terms in common use, but each is coming gradually to be associated with some particular theory upon which the appraisal is based.

No appraisal can be consistent unless it is based upon some theory. This holds as true of an appraisal of physical property as of non-physical property. Two distinct appraisal theories have evolved, and a careful study of their evolution shows that, in the final analysis, one theory arises from the conception that a public service company is a public agent, while the other theory arises from the conception that a public service company is subject to competitive conditions.

The agency theory leads logically to an appraisal of the actual cost of the physical and non-physical property.

The competitive theory leads logically to an appraisal of the market value of the physical and non-physical property.

It does not fall within the scope of this paper to discuss the effects of applying these two theories in the appraisal of the physical property of a public service company. But one or two deductions may serve to illuminate the essential difference between the two theories.

The agency theory gives us: (1) Original conditions and actual quantities involved in producing the plant; (2) actual unit costs incurred under those conditions; (3) actual prices paid for real estate; and (4) actual deficits in fair return during the development period.

The competitive theory gives us: (1) Present conditions and quantities that would now be involved in reproducing the plant; (2) present unit costs; (3) present market value of real estate; and (4) the capitalized net profits (after deducting interest) derivable from the business.

Our present discussion relates to the fourth item in each of the above enumerations.

Development cost is the "non-physical value" that arises from an application of the agency theory. Development cost may be defined as being the residual deficit in "fair return" on the investment.

The "fair return" is the sum of the interest and the profit. If, for example, the annual interest rate is 6 per cent and the profit rate is 2 per cent, the fair return rate is 8 per cent. In calculating the development cost, the method is, briefly, this:

To the operating expenses (including depreciation and taxes) for the first year add the fair return, and subtract this sum from the gross income for the year. If the result is a minus quantity, a deficit in fair return, add it to the investment in plant, and with this total as a base start a similar calculation for the following year. If this method is applied from the beginning of operation down to the date of the appraisal, there will usually be found to be a residual deficit in fair return, which is the development cost. This method is often called the Wisconsin method. The Wisconsin Railroad Commission has used this method for about five years, and they call the residual deficit the going value, instead of calling it development cost. Although the method is simple in principle, there arise many interesting questions as to the details of its application in any given case.¹

Franchise value is the term often used to denote the non-physical value of a public utility property, where the competitive theory is used in appraisal. If the franchise is without limit, the franchise value is the capitalized net profits derivable from the property. Profit is here used to mean the balance remaining after deducting from gross operating revenue the sum of the operating expenses (including depreciation and taxes) and the interest (say, at 6 per cent) on the investment in the physical plant. The annual profit if capitalized (that is, divided by 6 per cent in this illustration) gives the franchise value of an unlimited franchise, on the assumption that the annual profit will neither rise nor fall and that the interest rate will likewise remain constant. Where the franchise is limited, or where profits are likely to change, proper allowances must be made to arrive at the present worth of future profits. This method is of the same

¹ I have covered many of these details in an article on "Development Cost" in *Engineering and Contracting*, June 26, 1912, which is available as a pamphlet reprint that can be secured upon request.

nature as is used in deducing the good will value of an established competitive business of any sort. It has been frequently used in the appraisal of railway and other public service company property for taxation purposes. In the original appraisal of the railways for the Michigan Board of State Tax Commissioners, the capitalized profit method was applied. I would note that it seems to me to have been incorrectly applied in that case.²

Since capitalizing existing profits involves some reasoning in a circle if the values thus deduced are to be used as a basis for rate making, the tendency has been to abandon this method in rate cases. Nevertheless, it seems to me that it merits consideration even in a rate case.

A third theory of appraising public utility property has come into very extensive application. It partakes of the nature of the agency theory in some respects and of the competitive theory in other respects. This theory may be called the reproduction or replacement theory. It resembles the competitive theory in respect to its use of present prices and present conditions for determining the "value" of the physical plant. But it somewhat resembles the agency theory in respect to the determination of the "non-physical value." The cost of establishing the business, or the going concern value as it is often called, is deduced upon the hypothesis that a number of years would be required to build the plant and secure the business now attached to it. Not only would there be a deficit in fair return during this hypothetical period, but considerable money would be spent in advertising, canvassing and soliciting, in order to build up the existing business within this limited time.

Although the development period is hypothetical in a sense, it is, nevertheless, calculable within reasonable limits. It must not be so short a period that the saving in interest on the capital will not be wiped out by the increased costs incident to building the entire plant in a rush. The following are the main items of cost that are included in the cost of establishing the business, according to the reproduction theory.

² *United States Census Bulletin 21*, "Commercial Valuation of Railway Operating Property in the United States: 1904," contains one of the most complete published discussions of this method.

1. Organization cost:
 - (a) Legal, etc.
 - (b) Franchises, permits, etc.
 - (c) Patents, licenses, etc.
 - (d) Experiments and investigations
 - (e) Securing and training the staff
 - (f) Selling securities (brokerage, etc.)
 - (g) General and office (associated with organization cost)
2. Selling service:
 - (a) Advertising
 - (b) Canvassing and soliciting
 - (c) Other inducements to attract business (*e.g.*, "free house wiring")
 - (d) General and office (associated with selling service)
3. Deficit in fair return during the construction and development period.

There are a number of strong arguments in favor of the reproduction theory, as to its application to non-physical as well as to physical property. Obviously it can be applied in a uniform manner to all utilities, regardless of the existence or non-existence of old accounting records. Questions as to conditions, prices, rates of fair return, etc., in years long past, are not raised. It may be noted, however, that in calculating the cost of establishing the business it may be necessary to assume rates for service that differ from existing rates, for the whole object is to show what it would cost to establish the existing amount of service when fair rates for that service are charged.

We have seen that "non-physical value" based on the competitive theory (the franchise value) is objected to on the ground that it involves reasoning in a circle where rates are involved. So, too, the "non-physical value" based on the agency theory (the development cost) finds opposition on the ground that the most unfortunate and worst managed company shows the greatest non-physical value.

No appraisal theory ever proposed has been free from criticism. Yet some theory or theories must be used if there is to be any consistency in the findings.

If public service companies had always been true and complete agents of the public, there could be but one theory for appraisals—the agency theory. But public service companies have only recently been *considered* as true agents. They have never been *treated* as true agents in any state. And in several states that now have laws

for enforcing an agency relation, we still witness the grossest forms of competition between municipally owned and privately owned utilities. In the state of Washington, for example, the railroad commission recently authorized the consolidation of two competing telephone companies, and now the federal government has begun action to break up the consolidation on the grounds that it is prohibited by the Sherman act.

These and numberless other facts show the futility of trying to make the agency theory retroactive in great degree, for it is not even very active now. Yet it seems wise in any rate case to present an analysis of the development cost based on the agency theory, as well as an analysis of the cost of establishing the business based on the reproduction theory. Also the capitalized net profits, or franchise value, should be presented. While no one of these methods may be conclusive in itself, obviously a conclusion is quickly reached where all three methods yield essentially the same result, as not infrequently happens. Moreover, the three methods at least determine the limits between which the non-physical value lies.

In this transitional period during which we are passing from a competitive theory to an agency theory of regulation of public utility rates, there is, of necessity, no single, clear-cut standard by which to arrive at public utility "values." Even the word "value" must often be taken to mean "cost," much as this jars the sense of propriety. And "cost" itself is often not actual but hypothetical, not what it actually was but what some one estimates it would be under assumed conditions.

Although the general drift of favor has been towards the reproduction theory, there are still many who believe in the soundness of Justice Harlan's decision in the *Smyth vs. Ames* case, namely, that all factors bearing upon value and cost should be considered by a rate-making body.

RECENT TENDENCIES IN VALUATIONS FOR RATE- MAKING PURPOSES

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The investor in public utility securities has frequently expressed regret that there has been no definite, authoritative statement of the principles of the "rate-making" value. The facilities for the regulation of rates have, within the past few years, been materially increased. Commissions, with broad powers of regulation, are now provided in most states. The procedure with which investigations may be started is relatively simple. A rate case is no longer the indication of widespread dissatisfaction in the community, but more often the result of individual complaint. Nor have the possible consequences in any way been lessened. The inquiry in rate cases is usually directed toward the income and thus the "investment" value of the entire public utility. Under prevailing practices the testimony does not concern itself principally with the reasonableness of the rate, but with the size of the resulting return upon the investment. This situation has developed the need for some unqualified declaration of principles by which the prospective investor may assure himself in a preliminary manner of the clear title of the investment to which he is about to contribute. With a number of utilities, inquiries as to the reasonableness of prevailing rates have already run their course and the relation of the investment to the customer has been more or less definitely determined. In the vast majority of cases, however, these assurances are still lacking. The examination of decisions as to the elements of value for rate-making purposes are, therefore, no longer of theoretical or academic interest, but have assumed large practical importance.

The indefiniteness in decisions as to the principles of "rate-making" value are probably due to two reasons: The equities of investor and customer are a complex relationship which cannot readily be encompassed and defined as a single arithmetical process to be applied to any set of facts. The court of last resort, moreover, in reviewing the determination of value by local authorities and commissions, has

not been concerned so much with the examination of economic doctrines or the wisdom of legislative policies of regulation as with the application of a particular rate to the property rights involved. It is, therefore, not surprising that the language in the leading case, *Smyth vs. Ames*, 169, U.S. 466, decided in 1898—

We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property—

should be reiterated rather than more definitely stated in the Minnesota rate cases, 230 U.S. 352, 434, decided June 9, 1913—

The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts.

It would be reasonable to suppose, however, that the state commissions dealing with the detailed evidence as to values would proceed in an identical manner and adopt common practices and theories. But this is far from being the case, although there are certain tendencies which point toward uniformity. The earlier rate decisions have already been summarized in various texts and it would be repetition to refer to them in detail in a short discussion. Attention is therefore directed, in this article, to the more recent cases covering the latter part of the year 1912 and the year 1913, which particularly reveal departures from previous rulings. Comparisons of this kind are seldom conclusive. It is probably true that a study of the actual facts and conditions surrounding each particular case with which the commission was undoubtedly familiar, but to which there are only meager clues in the reading of the decision, would probably disclose that what rate regulation is endeavoring to accomplish is full and abstract justice, and that much of the theoretical background for these decisions has been filled in and elaborated in extended dicta,

after and not before the actual decision has been reached. In no other way is one able to explain the great diversity of viewpoint with which one is confronted in any comparative analysis of the so-called principles of value for rate-making purposes.

It is reasonable to assume also that if any single economic law underlies the proper rate-making value it will not be established until every available viewpoint and application have been exhausted. Economic principles of money, of international trade and of taxation have taken a long time to mature and have been preceded by innumerable theories and propagandas before they have finally reached the stage where generalization has been proper. Such sweeping and conflicting conclusions as those of Professor John H. Gray, former director of investigation of the National Civic Federation, before the American Economic Association, that

on any sound principle there should be no valuation for rate regulation but history, that is, a statement of outlay, of money spent and services rendered, nothing more. . . . As an agent, the utility exercises the right of eminent domain, must give an account of its stewardship, is subject to continuous control, is liable for compulsory service, and must coöperate with all other public agents of its principal, the state,

or those of a committee of the American Society of Civil Engineers upon the subject of valuation for purposes of rate making that

. . . . the committee believes a valuation of an old property based on its actual cost to be generally impracticable, making it necessary to adopt the cost of reproduction method. . . .

In the opinion of the committee it would be entirely just and equitable . . . to provide by law that future public service properties should be valued on the basis of their actual reasonable existing investment, and to determine or limit rates upon such a valuation if the service rendered permits,

seem both, in the light of present decisions and practices, premature.

In the recent rate cases the cost of reproduction new has continued to be the factor of value given the greater attention. It is accepted as an important element in the Minnesota cases, 230 U.S. 352, 452:

The cost-of-reproduction method is of service in ascertaining the present value of the plant, when it is reasonably applied and when the cost of reproducing the property may be ascertained with a proper degree of certainty. But it does not justify the acceptance of results which depend upon mere conjecture.

But estimates of the increased value of right-of-way real estate are limited to the normal market value of land in the vicinity, and the court cautions against the use of hypothetical additions over and above such normal values:

Assuming that the company is entitled to a reasonable share in the general prosperity of the communities which it serves, and thus to attribute to its property an increase in value, still the increase so allowed, apart from any improvements it may make, cannot properly extend beyond the fair average of the normal market value of land in the vicinity having a similar character. Otherwise we enter the realm of mere conjecture. We, therefore, hold that it was error to base the estimates of value of the right-of-way, yards and terminals upon the so-called "railway value" of the property. The company would certainly have no ground of complaint if it were allowed a value for these lands equal to the fair average market value of similar land in the vicinity, without additions by the use of multipliers, or otherwise, to cover hypothetical outlays.

A better recognition of the limitations of appraisal by engineers and the necessity of providing against omissions in estimating costs other than those of mere labor and material have led to an increase in the percentage allowance for so-called overhead items of the construction, including superintendence, legal expenses, interest during construction, engineering and contingencies. It is noted that the Wisconsin commission, which, in its earlier cases, allowed 12 per cent for such items, has finally made an increase of its allowance to 15 per cent. In its decision *City of Milwaukee vs. Milwaukee Gas Light Company*, decided August 14, 1913, 12 W.R.C.R. 441, 444, the commission held:

The proper allowance for this item cannot be stated in general since it depends upon many variable conditions, particularly upon the make-up of the unit prices to the sum of which it is to be applied. All of this overhead might be added to the individual items, but since a great deal of it is not easily assigned to any particular item, it is customary to add it to the total. Practice, however, is not at all uniform as to what should properly be included in unit prices and what should be carried as overhead. A knowledge of the make-up of unit prices is therefore absolutely essential to the determination of the proper allowance for overhead.

The commission has pointed out in the case *City of Milwaukee vs. The Milwaukee Electric Railway and Light Company*, 10 W.R.C.R. 1, 107, 108, that its unit prices rather than the percentage allowance include some of the so-called overhead items:

As regards the unit costs used in appraising the inventory, it is to be noted that these are in most instances five year average prices, designed to include contractor's and sub-contractor's commissions, the enhanced cost of piecemeal as compared with continuous construction, and the cost of handling material and labor until both items enter into the actual construction.

Care is also taken in pointing out in the recent case *Oshkosh Water Works Company vs. the City of Oshkosh*, 12 W.R.C.R. 602, 608, 609, that these allowances are not fictitious:

The allowance under discussion is not made to cover fictitious expenses, something by way of good measure as it were, to swell the physical valuation, but is designed to cover, as near as may be, only those expenses which would actually be incurred in the construction of a plant and which would not otherwise be taken into consideration. The fact that the original plant was built under contract would only go to show that the company met these expenses in the contract price instead of directly. An explanation of this allowance in a recent case before the commission is so pertinent in this connection, that it is here quoted:

"Apart from the expense of labor and material incurred in constructing the plant, many additional costs must be met *which do not appear in the appraiser's inventory of tangible property*. Among these are the expenses of organization preliminary to the construction of the property, usually consisting of engineering and legal expenses; the expenses of supervising, including the wages of all contractors, superintendence and necessary administrative organization; contingent costs due to loss of time and material and unexpected obstacles occurring during the progress of construction; and, finally, the expenses of financing the construction, consisting principally of interest on money advanced prior to operation. Construction costs of this character are analogous to the overhead or expense burden encountered in the analysis of operating costs. Allowances for such expenditures are usually made in appraisals of public utility properties, and have in all instances been made by the commission."

It is noted that the California Railroad Commission in the case *Palo Alto vs. Palo Alto Gas Company*, decided March 12, 1913, adds 15 per cent as an overhead percentage to the detailed appraisal. The New Jersey Board of Public Utility Commissioners, which in earlier cases adopted 12 per cent as the proper percentage addition, in the *Passaic gas case*, decided December 26, 1912, places the allowance at 17.6 per cent. The Nebraska State Railway Commission in the *Lincoln telephone case*, decided June 26, 1913, states:

The commission is convinced that the amount of 17.2 per cent for general expenditures allowed by our engineers is conservative, particularly in view of the manner in which they have built up their unit cost.

In the Brooklyn Borough gas case, decided July 8, 1913, the New York Public Service Commission, first district, evidently placed the percentage addition at 15.4 per cent.

The much mooted question whether the cost of reproduction new should be depreciated has been considered in various cases. Justice Hughes in delivering the opinion of the court in the Minnesota rate cases, 230 U.S. 352, holds that when an estimate of value is based upon the cost of reproduction new the extent of existing depreciation should be shown and deducted, thus approving the rule in the Knoxville case, 212 U.S. 1:

The master allowed the cost of reproduction new without deduction for depreciation. It was not denied that there was depreciation in fact. . . . But it was found that this depreciation was more than offset by appreciation; that "the roadbed was constantly increasing in value;" that it "becomes solidified, embankments and slopes or excavations become settled and stable and so the better resist the effects of rains and frost;" that it "becomes adjusted to surface drainage, and the adjustment is made permanent by concrete structures and rip-rap;" and that in other ways, a roadbed long in use "is far more valuable than one newly constructed." It was said that "a large part of the depreciation is taken care of by constant repairs, renewals, additions and replacements, a sufficient sum being annually set aside and devoted to this purpose, so that this, with the application of roadbed adaptation to the needs of the country and of the public served, together with working capital . . . fully offsets all depreciation and renders the physical properties of the road not less valuable than their cost of reproduction new." And in a further statement upon the point, the "knowledge derived from experience" and "readiness to serve" were mentioned as additional offsets.

We cannot approve this disposition of the matter of depreciation. . . . It would seem to be inevitable that in many parts of the plant there should be such depreciation, as for example in old structures and equipment remaining on hand. And when an estimate of value is made on the basis of reproduction new, the extent of existing depreciation should be shown and deducted. . . . If there are items entering into the estimate of cost which should be credited with appreciation, this also should appear, so that instead of a broad comparison there should be specific findings showing the items which enter into the account of physical valuation on both sides.

It must be remembered that we are concerned with a charge of confiscation of property by the denial of a fair return for its use; and to determine the truth of the charge there is sought to be ascertained the present value of the property. The realization of the benefits of property must always depend in large degree on the ability and sagacity of those who employ it, but the appraisalment is of an instrument of public service, as property, not of the skill of users. And when particular physical items are estimated as worth so much new, if in fact they be depreciated, this amount should be found and allowed for. If this is

not done, the physical valuation is manifestly incomplete. And it must be regarded as incomplete in this case.

The New York Public Service Commission, second district, in the Buffalo Gas Company case, decided February 4, 1913, evidently places little weight upon the cost of reproduction value as a basis for rate making, but raises an interesting question as to its attitude toward the Knoxville rule:

If the cost of reproduction new were to be taken as the basis upon which the rate is to be computed, we would likely be compelled to deduct therefrom the accrued depreciation in obedience to the rule laid down by the United States supreme court in *Knoxville vs. Knoxville Water Company* (212 U.S. 1), whether we considered that rule economically sound or otherwise. The uncertainties in this case as to original cost and cost of reproduction new, as well as to the actual condition of the physical property, make a discussion of the proper handling of depreciation in a rate case entirely academic. It is clear that the treatment of depreciation in any given case depends upon facts which are not clear in this case, and to lay down principles which cannot be applied would serve no useful end. Our views on this important question which was much discussed during the hearings will be more appropriate in other cases before us in which the facts are more clearly ascertainable.

The New York Public Service Commission, first district, in the Brooklyn Borough Gas Company case, decided July 8, 1913, does not deduct the full accrued depreciation in determining a fair value of the property for rate-making purposes.

The argument that a depreciated plant renders service identical with that of a new plant and that its value for purposes of rate making should therefore be identical, is advanced in the recent decision of the Montana Public Service Commission, decided November 3, 1913:

. . . . It will be obvious that there can be no fixed percentage of depreciation applicable to a utility that had been "kept up" from year to year by constant effort, and the purchase of improved devices, as compared with one that had been allowed to deteriorate through neglect, hence the principle of an arbitrarily established measure of depreciation is untenable. . . . Let us assume that an investment is made in 1903 of \$100,000 under a twenty-year franchise, rate of interest allowable 10 per cent per annum, and figuring 5 per cent per annum depreciation. At the end of ten years, or in 1913, the property will have depreciated \$50,000 and has a remaining value of a like amount. Then, if rates are made, based on the depreciated value, they must be one-half of the original rates, although the service may be just as efficient as it ever was, and in ten years, more, the physical value of the plant would be nil, and likewise upon the same basis of reasoning, the utility would not be permitted to charge anything.

A contrary view to this proposition is expressed by the California Railroad Commission in the case *Palo Alto vs. Palo Alto Gas Company*, decided March 12, 1913:

To the theory expressed, that as long as a plant can do its work, it should be regarded for rate-making purposes as having 100 per cent value, this commission cannot give adherence.

The same view is expressed by the supreme court, appellate division, of New York in *People ex rel. Kings County Lighting Company vs. Willcox*, 141 N.Y. Supp. 677, 683:

Mr. Mathewson as *amicus curiae* files an interesting brief presenting an elaborate argument in support of the proposition that as it is conceded that the plant of the relator operates at 100 per cent of efficiency there should be no deduction for so-called "accrued depreciation." This term is used to designate, somewhat inartificially, the liability presently accrued toward the ultimate cost of replacement of still efficient apparatus. He therefore repudiates the concession to scrap value and claims that as the company, being a public service corporation, must always keep its plant up to efficiency, and must replace property when worn out, it is entitled to a rate based upon 100 per cent efficiency because it will never be allowed to capitalize replacement but must provide it when necessary. It therefore must be allowed to provide a replacement fund out of its earnings. He argues that it makes no difference to the consumer whether that fund is actually accumulated and on hand or not, because the replacement must be made, if there is such a fund, from it; if not, by the stockholders directly. If, on the other hand, the valuation of the tangibles is reduced by a percentage, in this case 21 per cent, it can never be provided for in the only proper way—out of earnings.

We are unable to adopt Mr. Mathewson's interesting theories for these reasons:

(1) It seems to be thoroughly established that the value of the tangible property upon which the company is entitled to a rate which will procure a fair and just return is the present value; that is, at the time of the appraisalment for rate-making purposes.

(2) That in the absence of accurate evidence as to actual value the cost of reproduction new takes the place thereof.

(3) That as the property being valued is not new, in order that "cost of reproduction new" may represent the actual condition—the amount presently invested—there must be a deduction therefrom.

(4) That this represents the amount required to replace apparatus still in use, but in process of wearing out, at the end of useful service.

(5) That this allowance for depreciation has been made in various kinds of cases where present value is required to be estimated.

The New Jersey Board of Public Service Commissioners in applying the Knoxville rule limits its deduction in the Passaic gas case, de-

cided December 26, 1912, to the depreciation obtained by observation and inspection, a deduction somewhat in excess of 4 per cent. It states:

In so far as physical property is concerned, it appears to be well settled that the proper valuation is the present value as obtained by deducting depreciation. We are confronted, however, with the contrasted methods of estimating depreciation referred to above, and we must decide whether theoretical depreciation by inspection should be deducted. Undoubtedly an allowance for theoretical depreciation will much exceed the depreciation obtained in the other way.

And in a later case, *Gately and Hurley vs. D. & A. T. & T. Co.*, decided January 7, 1913, this same commission elaborated upon its reasons for such deductions. These are, in substance, that a public service corporation is indebted to the utility for certain replacements and that this indebtedness, when the circumstances and conditions clearly indicate that it can be carried out, must be taken into consideration when determining the value for rate-making purposes.

The considerations adduced in the preceding paragraph fail to take due cognizance of the fact that a public utility lies under a peculiar obligation not similarly incumbent upon the ordinary business concern. This obligation consists in the continuous requirement of putting back into the tangible equipment such items as are necessary from time to time to afford to consumers service in quality and extent equal to the service which could be afforded by a brand new plant of the same magnitude. This obligation to replace said items does not allow the public utility to obtain the funds therefor from increased rates or charges, nor from the issue and sale of additional securities. . . . The magnitude of the utility's responsibility is therefore the sum of the unexpired service value of tangible property *plus* the pecuniary liability to make replacements as needed from its own pocket. As its responsibility is measured by a sum in excess of the unexpired service value of its tangibles, it would seem to us that the equitable base upon which it is entitled to a return is in excess of the unexpired service value of its apparatus, and approaches as a limit the total replacement cost new of its tangible property.

The commission, however, points out that where there is greater assurance of the prompt and adequate addition of needed items of replacement, such as is possible where the corporation has accrued a sufficient reserve, less consideration should be given to the deduction for accrued depreciation than is the case where the corporation "simply lies under the naked obligation to make such replacement as required." Such a rule it holds is in keeping with the Knoxville rule:

While therefore it may be only a first approximation to justice in distinguishing between utilities of the two contrasted classes, a deduction in the case of the less meritorious or less capably projected utility may well be made. Where such deduction is moderate in extent, and serves only to cover such expired service value as has resulted demonstrably from age and wear, we are of opinion that said deduction may fairly be made. While we are not confident that in the Knoxville water case the supreme court of the United States had before it any record of each and every consideration properly to be considered in the matter of making deductions from the replacement value new of tangible property, it is tolerably clear that this deduction or abatement here proposed is wholly in keeping with the valuation rule that seemingly may be deduced from that opinion. Such abatement or deduction is only a fraction of the total expired service value of tangible property in this particular case. This moderate reduction has also this advantage: that it is based upon certainly ascertained inspection or investigation, and not upon the more or less conjectural allowances for depreciation estimated by tables purporting to give the expectation of life of various parts of the utility's plant. . . .

Such also has been the finding of the New Hampshire Public Service Commission in the Berlin Electric Light Company case, decided August 30, 1913:

We do not hold that the full amount of depreciation should in every case be deducted from the cost of reproduction. It is merely one of the facts to be considered in making a finding of fair value. It stands in the same category as original cost of physical properties, other necessary early expenditures, present reproduction cost of physical properties, and other facts concerning which inquiry is made, all of which should be determined as accurately as possible, but none of which has a uniform fixed value in each case. There may be cases where plants well conceived and well managed have suffered depreciation which in fact represents a part of the cost of developing the business to a point where a fair return can be secured. In other cases, as, for example, where adequate returns have been received to afford a fair return and to maintain a depreciation reserve, but have been entirely paid out in dividends, the entire amount may properly be deducted from present cost of reproduction in coming to the final conclusion as to fair value. Between these two extremes the proper course will vary according to the circumstances in each case. But in every case it is desirable to determine, for the purpose of consideration, the full depreciation as accurately as possible.

A similar rule, conversely stated, that the depreciation fund of the corporation is properly an asset of the utility to be considered in determining the value for rate-making purposes, is that held by the United States district court for the district of Arizona, in the case *Wm. P. Bonbright et al. vs. W. P. Geary et al.*, a case on appeal from

the ruling of the Corporation Commission of Arizona, in the Phoenix case, dated November 19, 1913:

This brings us to a peculiar feature of this case. There was on hand in the treasury of the company at the time of the valuation of the plant the sum of \$64,292.67, accumulated for the purpose of meeting the expense of current repairs and for replacing such parts of the property as had been worn out and the life of the part ended. The fund had been withheld from the stockholders that it might be used in preserving the plant in good condition and in proper efficiency. This was good business judgment on the part of the officers of the corporation and must be approved. Public service corporations are to be encouraged in maintaining their plants in a proper state of efficiency. We are of the opinion that the Corporation Commission was in error in its estimate of depreciation of this plant and particularly was in error in omitting this fund from its valuation of the plant.

This also, it appears, has been the practice of the Wisconsin Railroad Commission in its rate cases.

A notable departure in the recent decisions from what hitherto had almost uniformly been the rule with state commissions relates to the inclusion of the cost of removing and relaying paving over all mains in any determination of the cost of reproduction new. Although it appears that such an allowance had been specifically made in the Consolidated Gas Company case 157 Fed. 849, and that such revisions had been affirmed in 212 U.S. 19, commissions such as New York Public Service Commission, second district, in the Buffalo gas case, February 4, 1913, New Jersey Board of Public Utility Commissioners in the Passaic gas case, December 26, 1912, and the Wisconsin Railroad Commission in *City of Ashland vs. Ashland Water Company*, 4 W.R.C.R. 273, 306-308, and cases following have cited and evidently followed the example of excluding such paving cost in *Cedar Rapids Gas Light Company vs. City of Cedar Rapids*, 120 N.W. Rep. 966, 970, and limited the allowance for paving to the costs actually incurred by the utility, and excluded paving laid subsequent to the laying of mains.

In a case on appeal from a decision of the New York Public Service Commission, first district, the New York supreme court, appellate division, in *People vs. Willcox*, 141 N.Y. Supp. 677, 681, has held that such allowances are properly included in the value for rate-making purposes. Citing the Consolidated Gas Company cases, Justice Clarke, speaking for the court, states:

It seems to me that we ought to regard that question as settled. The fact that these streets have been paved and the region generally improved has caused sales of land, the building of houses, and the increase in population, which have enabled the company within the last few years to make profits, and declare dividends which for many years it was unable to do. The argument that streets paved or unpaved make no difference in the earning power of a gas company is unsound. The earning power of a gas plant depends upon its constituency. If it has nobody to sell gas to, it can make no profits; and, if there are no decent streets, there will be few people. The value of a plant of any kind is certainly affected by its location and the demand for its products. If a new company undertook to install a duplicate plant, the cost of repaving under the present streets would properly be allowed for. Hence it is a necessary element of reproduction value. It is a valuable advantage which the present owner has which a prospective buyer would have to pay for. Like increased land values a school of thought might condemn it as "unearned increment," but the law does not yet refuse to include it in its definition of property capable of ownership and entitled to protection.

Such an allowance is also affirmed by the Wisconsin supreme court in *Appleton Water Works Company vs. Railroad Commission*, 154 Wis. 121, but there is excluded paving over service pipes upon the theory that such paving would under common practices be laid by customers of a new plant.

Cost of reproduction must mean the cost which will be necessarily incurred by a reasonably prudent and careful man, using ordinarily careful business methods, in reproducing a plant of equal efficiency. Anything which under such a conduct of the business would cost nothing to reproduce cannot logically be included. It is not denied that if the city or a new water company were to establish a new plant the consumers could be required, as a condition of receiving water service, to do the work in question, and even furnish the pipe. . . . So it seems that there would be no question but that it would be entirely practicable, and in fact the only reasonably prudent policy, for a new company to require consumers to lay their own service pipes.

This is not the case where land or other property of value has been voluntarily donated to the old company. With regard to such property it has been held in cases involving the fixing of rates that it is rightfully to be considered in arriving at the cost of reproduction. This result is reached on the idea that a new company could not count on receiving such gifts. Whether the logic of these cases be correct or not we do not decide, but in any event the principle does not apply to expenses which may legally be assessed, and in the exercise of good business judgment ought to be assessed, against the consumer. For purchase purposes at least the only expenses which should be considered in the estimate of the cost of reproduction are those which are reasonably necessary in a prudently conducted reproduction.

The principle of including the cost of removing and relaying all paving is accepted "as probably settled in this state" by the Wisconsin Rail-

road Commission in the Oshkosh Water Works case, 12 W.R.C.R. 602, 662.

Somewhat akin to the inclusion of the cost of disturbing paving in the value of pipe, is the question of appreciation of real estate. It has been the practice of the New York Public Service Commission, first district, to allow the present value of real estate in its valuation for rate-making purposes, but to include also the annual appreciation as income.

It is a matter of particular interest that the state supreme court, appellate division, *People vs. Willcox*, 141 N.Y. Supp. 677, 687, has placed its stamp of disapproval upon this theory:

In its calculation of income, however, it has included an item of \$35,000 as the annual increase in the value of the land of the company. This we regard as erroneous. The land is used for the business of the company, and is appropriate therefor. So long as the land is held and used for such purpose increase in value cannot be considered as income or as available for the payment of debts, taxes or dividends.

While it appears that the California Railroad Commission has not adopted a similar practice, dicta in a recent case, *Application of North Coast Water Company*, decided December 3, 1913, seem to indicate that it has given the matter consideration. Commissioner Thelen states:

While it is not necessary to decide this point here for reasons which will hereinafter appear, I desire at this point to draw attention to this question of the value to be assigned to land in rate-fixing inquiries, which question is one of the most important which can possibly arise in a rate-fixing inquiry. This question tests squarely the correctness of the so-called reproduction value or present value theories on the one hand and the original cost or investment theory on the other. In this connection I desire to refer to the language of Mr. Justice Van Fleet in *San Diego Water Company vs. San Diego*, 118 Cal. 556, who expresses what he believes to be the fundamental relationship between the public and a public utility, which is one of principal and agent. At page 570, Mr. Justice Van Fleet says:

"As we have said, it is not the water or the distributing works which the company may be said to own, and the value of which is to be ascertained. *They were acquired and contributed for the use of the public; the public may be said to be the real owner and the company only the agent of the public to administer their use. . . . It is the money reasonably and properly expended in the acquisition and construction of the works actually and properly in use for that purpose, which constitutes the investment on which the compensation is to be computed.*"

The foregoing conclusion was worked out by Mr. Justice Van Fleet logically and on principle from the fundamental relationship existing between the public and its public utilities. The use of the present value or reproduction value theories does not spring in any way out of that relationship and has no necessary connection with it. As Mr. Justice Van Fleet clearly points out, the use of either the present value or the reproduction value theories may be as clearly unjust to the public utilities on the one hand, in case prices have gone down, as it is to the public on the other hand, in case prices have gone up. In logic and justice, the public utility should receive a return on the moneys reasonably and properly expended in the acquisition and construction of its works actually and properly in use to carry out its agency—no more and no less. If care is exercised in thus ascertaining the valuation on which a return is to be allowed and if a liberal return is then allowed on that basis, as is the practice of the California commission, the utility will be receiving full justice while the consumer on the other hand will be paying no more than he ought reasonably to be called upon to pay to his agent.

The "unearned increment" has also been referred to as a factor of value for rate-making purposes by the Massachusetts Board of Gas and Electric Light Commissioners, in the Attleborough petition, decided February 7, 1913, and has in effect been expanded until it comprises the whole single tax theory:

There is a growing recognition of the truth of the proposition that a public service company is not entitled to a return upon the unearned increment in value of its real estate, but investment out of profits which it has been able to make solely through the general growth of the community which it serves has many similar attributes. It will commonly be found that a company's surplus is based on managerial skill and foresight, needlessly high rates or the general prosperity of the community; or, more frequently, on two or more of these combined; and while it may be difficult to determine what proportion is justly attributable to any one of these causes, there can be little question that the general growth of the community is an important factor. . . . It is difficult to see why the reasonable amount of return or the reasonable rate of return based upon the full value of the company's property should not be affected in the same manner by that portion of the investment made from what may be termed the unearned increment in its profits as by the unearned increment of value in its real estate; in other words, the reasonable rate of return upon a company's entire investment is lower where an appreciable part is derived from the two sources described than where it is entirely derived from the contributions of the shareholders in their payments for its stock.

To these theories the New York Public Service Commission, second district, has expressed dissent in the Buffalo gas case, decided February 4, 1913:

. . . . what is called the fixing of the value of the property in the public service for the purpose of rate making is not a fixing of value in any proper sense of that word as it is correctly used in our language. It is a determination of what under all the facts and circumstances of the case is a just and equitable amount upon which the return allowed to the corporation is to be computed. If the time the determination is made happens to be at or near the time the plant is put in operation, the investment or original cost may be the predominant factor. If the time of determination is remote from the time of investment, the factor of appreciation or diminution in values arising from changes in costs of labor and materials may enter largely into the result. If the plant is unreasonably disproportionate in size to the service required of it, the cost of reproduction new cannot be the sole test. If the actual investment has been reckless and extravagant, the owners should bear the loss and not the public. If the general scale of prices and values in the community has been increased or diminished since the plant was built, the owners may be fairly called upon to share the general diminution; and on the other hand, may justly demand a share in the general appreciation to which the existence of their property has, it may fairly be assumed, contributed at least its proportionate share.

And this conclusion is substantiated in *Fuhrmann vs. The Cataract Power and Conduit Company*, decided April 2, 1913, wherein the commission points out that it declined to recognize or capitalize past deficits upon the ground "that it produced the somewhat curious result that the greater the loss the greater the value of the property."

A similar finding is made by the New Jersey Board of Public Utility Commissioners in the Passaic gas case:

. . . . If, in the past, this gas company, out of the rates exacted from consumers, had met its operating expenses and depreciation, and in addition thereto had obtained enough to pay returns to investors, and to build an actual structure used in the business, would this structure aforesaid be the lawful property of the company? The answer, it seems to us, must be in the affirmative. If the company had paid out, in addition to other payments to investors, dividends equal to the cost of building this structure, and then had issued additional stock in value, equal to the cost of this structure, in order to repossess itself of the money required to build it, there can be no doubt that the structure built out of the proceeds of the additional securities thus sold would be the lawful property of the company. It would be none the less the company's lawful property if built out of current earnings without the issue of additional securities. . . . It is true that the cost of new business in this last decade has been charged to operation and paid out of rates. But as we have indicated above, the business thus acquired must be regarded as a legitimate part of the property of the company. We cannot equitably project back into the unregulated past a norm of prices that might today be regarded as fair and adequate, and assume that actual rates exacted in the past, in so far as they exceed what are now deemed fair, have not lawfully become the property of the

company. If these high rates in the past have been employed by the company to acquire an intangible property in the shape of extensive patronage, that expectation of patronage is theirs, and on its fair value the company is entitled to a return. It may or may not be a subject of regret that regulation was so long deferred; but deferred regulation is no excuse for refusing at present to allow a fair return upon what is the lawful property of the company.

And these conclusions seem to be established in the decision in the Minnesota rate cases, 230 U.S. 352, 454.

There is no better illustration of the effect of carrying the theory of "principal and agent" to its logical conclusion than that presented in the Superior case, decided by the Wisconsin commission on November 13, 1912. It appears that the real estate was purchased and a large-sized plant constructed during a "boom" period and "that no more property was purchased than was actually necessary at the time nor greater amounts paid than the prevailing market prices." Expenditures measured by standards at that time were apparently legitimate and necessary. The subsequent slow period of recovery after the panic in 1893 developed large deficits upon the actual investment. It is significant that the commission's ruling is a citation to a case in which it had occasion to recognize appreciation rather than depreciation of land values.

This commission has had occasion in former cases to pass upon the question of appreciation of land values. It was held in the Madison case:

That the law as well as our social system recognizes such gains in practically all other undertakings is evident from the fact that rents and interest charges usually vary with the natural increase in the value of the property they cover. As the cost of reproduction of a plant usually plays perhaps the most important part in determining its value, it is more than likely that the owners would have to bear losses in case land and other property had depreciated instead of appreciated. It would seem only just that the rule would work both ways. . . . In view of these facts there would seem to be good ground, from both a legal and economic viewpoint, for giving such appreciations in value consideration in appraising public utilities. At any rate we cannot now see good reasons upon which to exclude these elements from the appraisal of utility properties. *State Journal Prtg. Co., vs. Madison G. & El. Co.*, 1910, 4 W.R.C.R. 501, 579.

Original cost or investment is recognized as an important, if not determining, factor in the cases of the New York Public Service Commission, second district, in the Buffalo Gas and the Cataract Power and Conduit Company cases. It has likewise evidently been given

consideration in the decision of the Wisconsin commission in the Milwaukee fare cases, 10 W.R.C.R. 1.

The exclusion of going value as an element of the value for rate making by the New York Public Service Commission, first district, is ruled to be in error by the state supreme court, appellate division, in Kings County *vs.* Willcox, 141 N.Y. Supp. 677, 681. Justice Clarke points out that while it is true that the United States supreme court has not directly decided the propriety of including going value in fixing the value of the property of a public utility for rate-making purposes, it has done so in purchase cases:

I am unable to perceive a logical difference between allowing "going value" in the valuation of a plant when it is to be taken entirely by the public and allowing the same element when valuing the same plant for rate-making purposes. In each case the thing to be done is the fair appraisalment of present value. What difference in principle can there be because in one instance all is taken for the use of the public and in the other the public limits the earnings? In the case at bar the commission says it "disallowed this claim in determining fair value, . . . but did consider it in fixing the rate of return." If so, there is no proof of that fact in the record.

The basis of determining going cost or value by past deficits laid down by the Wisconsin commission in the Antigo case 3 W.R.C.R. 623, is evidently accepted by the California and New Jersey commissions. The California Railroad Commission in the case Palo Alto *vs.* Palo Alto Gas Company, decided March 12, 1913, while recognizing such costs, reserves decision as to whether this element of value should be added to the capital account or amortized in the near future. It states:

That there are certain actual costs incurred in developing the business during its early stages, for which costs the utility is entitled to be reimbursed, just as clearly as it is entitled to a return on the physical portions of its plant, seems to be too obvious for argument. The investor must go into his pocket to meet one kind of cost as clearly as the other. There are two schools of thought with reference to the manner in which the so-called "going concern" value or "development cost" should be met. The supporters of one school are of the view that these items should be added to capital account, while those of the other school believe that they should be taken care of by rates higher than would otherwise be in effect, during the first years of the utility's existence. The difficulty with the first view is that its adoption will result in the increase of the permanent capital account and the consequent payment of higher rates for all time to come. The difficulty with the latter view is that it casts upon the patrons during the first years the duty of paying rates even

higher than the usual relatively high rates which are paid at the outset of a utility's history. I am of the opinion that such costs, legitimately and wisely incurred, should be taken care of in some way, but the exact method to be pursued, and the extent to which consideration should be given to such items, will depend upon the facts of each particular case. It might well be, for instance, that if the utility is unwisely conceived or struggles against unusual difficulties, the cost of developing the business including the early losses may run up to almost the entire value of the physical plant, if not in excess thereof. It may happen, also, that while in one case the addition of these costs to capital account might be perfectly fair, in another case justice will require that these costs be reimbursed out of higher rates during the first few years, or that some combination of these theories be adopted.

Going cost is recognized as a proper addition to the rate-making value by the New Jersey Board of Public Service Commissioners in the case *Gately & Hurley vs. D. & A. T. & T. Co.*, decided January 7, 1913, and in the Passaic gas case, decided December 26, 1912, and such inclusion has been affirmed in the appeal case 87 Atl. (N.J.) 651, decided on July 1, 1913. In the former case the commission stated:

. . . . it appears just and reasonable that a fair present day estimate of the capital necessarily and judiciously sunk in establishing the business and not thereafter recouped from revenue should enter as an element into the base upon which a fair return should be allowed. Not to include such part of the outlay or investment as is necessarily and judiciously made at the start in canvassing for and enlisting customers, or as is necessarily and wisely incurred by reason of foregoing returns during the construction period when money is locked up, acts to repel future enterprises from similar ventures.

That the value used as the basis for taxation must be taken into consideration as an element in fixing the valuation for rate-making purposes is well brought out in the case of the Maryland Public Service Commission, *Bachrach et al. vs. Consolidated Gas, Electric Light and Power Company*, decided January 13, 1913, in which it was held that the value of \$5,000,000 placed upon the easements of the company in the streets of Baltimore is a portion of the assets of the utility upon which it is entitled to a reasonable return.

These comparisons summarize the significant changes appearing in the year 1913 and the latter part of the year 1912, in the more important decisions discussing "rate-making" value. The conclusions which seem proper from such a comparative review are as follows:

1. When appraisals of the cost of reproduction new are considered in determining the present value for rate-making purposes, experience

has proven the necessity of making more liberal additions for overhead percentages, not to cover mere conjectural values, but to include costs which do not appear in the appraiser's inventory.

2. When the present value for rate-making purposes is based upon the cost of reproduction new, deduction may properly be made for the depreciation in value. The amount of such deduction, however, may vary with the care with which the owners of the property or corporation have provided against such depreciation and there is a tendency to measure the deduction by inspection rather than theoretical estimates of expired life. Where the owners of the property or corporation have given evidence of their responsibility to replace depreciated property, such fact may be taken into consideration in determining value for rate-making purposes. Likewise the reserve accrued by the owners of the property or corporation to offset depreciation is properly considered an asset of the utility for rate-making purposes.

3. Where the cost of reproduction new is determined, inclusion is properly made for the cost of repaving over mains, even though it has not been necessary for the utility to disturb such paving during the course of construction.

4. Where the present value for rate-making purposes is determined, inclusion must be made for appreciation as well as depreciation of real estate. It does not seem proper that any portion of such appreciation should be construed as income upon which dividends or taxes may be paid. With few exceptions the recent proposal to deduct the so-called "unearned increment" from the value for rate-making purposes upon the theory of a relation of "principal and agent" is dissented from upon the ground that such a policy would carry with it the necessity of underwriting past losses. As yet no attempt has evidently been made to apply this principle in practice.

5. There has been a reiteration and elaboration of the necessity of including going concern value in the present value for rate-making purposes.

ELECTRIC LIGHTING AND POWER RATES

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Electric lighting and power plants like other public utilities must furnish adequate service at reasonable rates without unjust discrimination. What constitutes adequate service and reasonable rates is largely a question of facts. Adequate service requires efficient and well-maintained equipment, uniform and well kept-up voltage, accurate meters and many other things that can only be had through close supervision. What are reasonable rates is a matter that depends very largely on the circumstances under which the service is furnished. Plants that are operating under abnormal conditions may have to accept business at rates that yield much less than what might otherwise be regarded as reasonable compensation. When conditions are normal, the plants are in law entitled to rates that will cover reasonable allowances for operating expenses, including depreciation, and interest and profits on a fair value of the plant and the business. Such allowances may be said to constitute the normal cost of the service. As normal costs are also the economic basis for normal prices, there appears to be a close relation between the legal and the economic bases for rates.

The work involved in the making of reasonable rates for electric and other utilities is thus largely made up of determining what is the fair total cost of the service and what proportion of this cost should be borne by each of the different branches of the service and by the different classes of customers or individual customers in each of these branches. In order to find these costs, it is necessary to determine the fair value of the property and business that is employed in serving the public, the rates that constitute reasonable allowances thereon for interest, profits and depreciation on this value, as well as what is a fair allowance for other operating expenses.

The fair value of the property and the business is largely determined from those facts which show their original cost and what it would cost to reproduce them, both new and in their existing con-

dition. The rate of returns for interest and profits is mostly found from facts which indicate the rate at which the capital and the business ability for the plant in question, and for other enterprises where conditions are similar, can be had, the condition of the investment market generally and from other facts of this nature. The amount to be allowed for depreciation is usually found from the cost of and the length of the useful life of the property actually involved, as well as from the total cost and composite life of the plant as a whole. The fair cost of operation is mostly determined from close studies of the management, its methods and practices, the condition of the equipment, and the circumstances under which the services are rendered. In all inquiries of this kind, comparisons as between different plants and other facts in point are of much importance.

It is hardly necessary to say that, since the cost of the service is the basis for the rates, it is very important that this cost so found, not only for the plant as a whole, but also for each branch and class of the service, should be the correct or fair cost. The rates charged for utility service may vitally affect not only the social income and its distribution, but the industrial and commercial development of entire communities, and the conditions under which individual enterprises are carried on. Unless such rates are fair and equitable, it is almost certain that some plants will earn more and others less than they should earn, and some customers will have to bear more than a fair share of the total cost, while others are charged less. Such inequalities frequently spell success for some customers at the expense and even ruin of others. Owing to the fact that the theories and facts involved in this are often conflicting and very complicated, it is usually rather difficult to determine, not only the fair cost of the service, but also what is an equitable rate for the same. These obstacles, however, are not so serious that they cannot be overcome. Through close studies of the facts and conditions in each case, and by the application of correct methods to the calculations and the apportionments that are required, it is usually both possible and practicable to arrive at a fair result.

Ordinarily the cost of utility service is divided into the operating expenses proper, and fixed charges. The former include the expenses of operating the plant, or those items which would stop if operation were discontinued. The fixed charges cover such outlays of taxes, the depreciation due to the time or the elements, and interest

and profits; that is, those costs which go on even if operations are stopped. Both of these classes of costs are actually as well as relatively higher for some branches and classes of the service than for others, depending upon whether the service is furnished closer to or farther away from the power plant, upon whether the service demanded is for a longer or shorter period daily, and upon other local conditions.

Under normal conditions each branch should bear its own operating expenses, together with its full share of the interest charges. When conditions are abnormal, it may be necessary to so shift the interest charges that some branches bear less and others more than their normal share of the same. Ordinarily no part of the service should be allowed rates that are so low as not to cover the operating expenses plus at least something for the interest on the investment. For business that cannot be had on better bases, the cost may have to be so construed as to mean only the additional costs that are incurred in taking such business on. Mere inequalities in rates are not regarded as unjust until the point is reached where they result in some injustice to some one else. What is thus true in these respects for the different branches of the service is also true for the various classes of customers in each branch.

In the public utility field, where monopoly conditions largely prevail, this cost is about the only available basis for a fair price. While this is generally admitted, there is some division of opinion as to whether the rate should be governed by the average cost per unit that is obtained when the total cost is divided by the total units sold, or by the amounts per unit that are obtained when, in computing them, the demand, the length of daily use of the installation, and other factors in point are also considered. That the latter method furnishes the most equitable units for rate-making purposes becomes quite apparent when the nature of the electric energy business and the conditions by which it is surrounded are taken into account.

The nature of the electric utility is such that its product is more of a service than a commodity. The service it renders must be used in connection with the plant because it cannot be stored except to a limited extent. As electricity is largely used for lighting, the greatest demand on the plant is in the evening. While this maximum demand may not last long, the plant must be large enough to meet it. The demand on the plant also varies with the seasons, being

much greater during the winter than during the summer months. The effect of such variation in the demand is that for the greater part of the time as much and more than 80 per cent of the capacity of most plants remains idle.

Public utility service is also decidedly a service of decreasing costs. As much as two-thirds or more of the total expense of the service, when fixed charges are included therein, are often independent of the amount of current or energy generated and are about as great when the output of current is smaller as when it is greater. Hence, the greater the amount of current that can be sold, up to the point where the full capacity of the plant is constantly utilized, the better is the load factor and the lower the cost per unit of current will be.

In order to illustrate this point let us assume a plant that has a capacity of 300 kilowatts; that has an average daily use of current of about four hours; that has an operating expense including taxes and interest on the investment of \$18,000 per year, of which 60 per cent is covered by the fixed and 40 per cent by the variable expenses; and that has an instantaneous demand that about equals the capacity of the plant. The fixed expenses, on the basis stated, amount to a total of \$10,800 for the year, or \$36 per kilowatt of demand per year. This expense remains the same whether the plant is operated one, two or three hours daily or even if it is in operation all day. Such being the case it must follow that the fixed cost per kilowatt hour decreases with the increase in the output. If the plant were operated only one hour each day, it would be operated 365 days in a year and the fixed cost per kilowatt hour of output would be 9.86 cents. If the plant were operated two hours each day the output would just be doubled and the fixed charge per kilowatt hour would be halved. Thus the fixed cost per kilowatt hour for different hours daily operation of the plant is as follows:

When the plant is in operation	1 hour	daily 9.86 cents.
When the plant is in operation	2 hours	daily 4.93 cents.
When the plant is in operation	3 hours	daily 3.29 cents.
When the plant is in operation	5 hours	daily 1.97 cents.
When the plant is in operation	10 hours	daily .99 cents.

The variable expenses, according to our assumption, amount to \$7,200 a year when the plant is in full operation an average of

four hours a day. This means a variable cost of 1.65 cents per kilowatt hour, which increases or decreases in exact proportion to the increase or decrease in the number of kilowatt hours generated.

The total cost of current, as stated, is thus made up of a fixed and a variable expense. When these are reduced to a unit basis and added together, the results shown in the following table are obtained:

Number of hours plant is operated daily	Fixed	Variable	Total
			<i>cents per k.w. hour</i>
1	9.86	+ 1.65 =	11.51
2	4.93	+ 1.65 =	6.58
3	3.29	+ 1.65 =	4.94
5	1.97	+ 1.65 =	3.62
10	0.99	+ 1.65 =	2.64

These facts better than anything else show the fallacies of a uniform rate per kilowatt hour, and indicate that the consumer who uses his installation only a short time each day should not be given the same rate as the one who uses his installation a comparatively longer time.

In view of these and other facts, in order that they may become proper bases for rates, it is necessary to analyze closely the expenses of a plant and to classify them in accordance with their nature, branches of the service and classes of customers. In thus studying their nature, it is found that some of the cost items depend directly on the capacity of the plant and vary with this capacity; that others depend directly on the customers of the plant, and vary with the number of customers; and that there are still other items which depend directly on the output of energy and vary with variations in the amount of this output. It is further found that there are also many items in the cost of the service which do not depend directly upon the demand, the customers, or the output, but which are indirectly dependent upon two or more of them. They are in the nature of overhead charges. In addition to this, it is also found that some of these expense items are relatively higher for some branches or parts of the service than for others.

In order to establish rates that are equitable to all it is necessary to separate those expenses which depend directly on the demand, the customers, and the output into their respective classes. It is

further necessary to apportion properly the indirect or overhead expenses between these classes in such a way that each class is made to bear its proper share thereof. In addition to this it is also necessary to apportion properly these classes of expenses between the different branches of the service. Likewise the customers must also be classified by branches of the service, while those in each branch may have to be grouped in accordance with their demand on the plant and other characteristics of the service they obtain.

Now, these conditions and apportionments are logical and well within reason. If this is the case then it would also seem equally logical and reasonable that each customer or class of customers should bear his or their just proportion of such of the three classes of expenses that were named. That is, they should bear demand costs in proportion to their respective demand in kilowatt on the plant; they should bear customers' cost in proportion to the number of customers; they should bear output costs in proportion to the respective amounts of current or energy used.

When the demand costs are thus allotted to the customer on the basis of the proportion of his kilowatt demand; when the consumer costs are assigned to him on the basis of the number of customers; and when the output costs are apportioned to him on the basis of the kilowatt hours used, it is of course found that, while each customer bears only his just share of the respective demand, consumer and output costs, the average cost per kilowatt hour is much higher for those customers who use their service or installation a short time only each day than for those who use their installation for longer periods each day.

These facts possibly can best be illustrated by an example. The following table shows the expenses of an electric plant including fixed charges apportioned among the different classes of consumers and between consumer, demand and output.

	Consumer	Demand	Output	Total	Cost per kilowatt hour sold
					<i>cents</i>
Lighting.....	\$37,702.09	\$51,308.90	\$52,857.55	\$141,868.54	6.2
Power.....	1,953.94	14,112.47	21,194.51	37,260.92	4.2
Street lighting.....		8,740.47	7,444.19	16,184.66	5.2
Traction.....		10,895.20	14,917.20	25,813.14	1.9
Total.....	\$39,656.03	\$85,057.04	\$96,413.45	\$221,127.26	4.5

The column to the right shows the average cost per kilowatt hour sold for each class of service and also the average cost for the plant as a whole.

A rate schedule under which each customer is made to bear his just proportion, in each case, of the demand, the consumer and the output expenses thus results in higher average rates per kilowatt hour for short than for long hour users. This difference in the rate or cost is just. Since residences or lighting customers are usually short hour users, and power customers are often long hours users, it also follows that the average rate paid per kilowatt hour is higher in the former case.

Those who have analyzed the expenses and the operating conditions generally of public utilities do not find it hard to understand that there are certain items such as fixed charges and stand-by costs that depend on the capacity of the plant, which capacity in turn is determined by the joint demand upon it by the consumers, and that since such is the case these demand costs should also be borne by the consumers in proportion to their demand upon the plant, rather than on any other basis. There surely is a closer relation between those expenses and the demand in question than between those expenses and the kilowatt hours used. Likewise it is quite clear that certain expenses, such as keeping customers' records, collecting the bills and other items of this nature, depend on the consumer; that they are about as great for small as for large customers; that they are much more closely related to the customer than to the kilowatt hours used or any other unit and that for these reasons they ought to be borne in proportion to the number of customers. When it comes to the output costs, however, it is quite obvious that these depend more closely on the kilowatt hours used than on any other unit and that they should therefore be distributed on this basis. Such distributions of the expenses as those just outlined furnish material for the proper kind of cost curves, such curves as are used for scientific and other purposes where accuracy and sound conclusions are required. They especially furnish sound basis for equitable rate schedules.

It is well known that apportionments of the expenses that are required in the classifications outlined can be so made as to be fair to all concerned. There is in the case of all utilities a considerable proportion of items which depend directly upon each branch of the service, and upon each class of customers. Such items can be classi-

fied directly under the branch of the service and under that class for which they were incurred. There are also a considerable number of expense items which are common to two or more classes and two or more branches of service which can be fairly apportioned either on closely related units or on the direct expenses. While such apportionments are often complicated, their trustworthiness when carefully made has repeatedly been established.

The cost basis of rate making thus outlined is also elastic enough to be adjusted to the various conditions that arise in this field. Under it consideration can be given to the long hour user who in addition is also an off-peak user; to the long hour user whose use also extends into the peak hours; to the short hour but off-peak user; to the short hour users whose use also comes during the peak hours and to practically all other conditions that may arise.

Thus in the table shown above we find that the cost per kilowatt hour for street lighting is 5.2 cents. This is for service from dusk until midnight. Let us suppose that it is proposed to burn these lights all night. The question then arises as to what shall be the charge for the additional service. Under a uniform rate the charge would be 5.2 cents per kilowatt hour for all additional current needed. This rate, however, would be too high, because the increased service would not occasion a proportionate increase in the expense. Under the cost basis of rate making the only additional charge that would be made would be one sufficient to cover the increased expense. The following table shows both the direct expense and the expense burden for street lighting separated between demand and output.

Expense	Demand	Output	Total
Direct.....	\$3,960.75	\$3,521.66	\$7,482.41
Expense burden....	4,799.72	3,922.53	8,702.25
Total.....	\$8,760.47	\$7,444.19	\$16,184.66

It is obvious that the only item that will be affected by an increase in the length of time the lights burn will be the direct portion of the output expense, which in this instance amounts to \$3,521.66. If the lights are burned all night the amount of current needed will be doubled and consequently this item will be increased and the total cost of street lighting will be raised to \$19,706.32. It will be remem-

bered that the average cost of current when the lamps were burned from dusk until midnight was 5.2 cents per kilowatt hour; if the lamps are burned all night the average cost will be reduced to 3.2 cents per kilowatt hour. This is due to the large proportion of expenses that are fixed in supplying electric service. In other words, it is an industry decidedly subject to the law of decreasing cost. Proper adjustments of this kind are possible only under the cost basis of making rates.

When it comes to the method of charging, however, which, as stated above, is represented by the average cost per kilowatt hour of all the current sold by the plant, the situation is different. The rate thus obtained will be the same regardless of the conditions. Under it the power user would pay the same rate as the lighting user and the long hour user in both cases would be charged as much per unit as the short hour user. If all customers were in the same class, if their demand was the same and also came at the same time, if they used the same amount of current, if there were no competitive or other conditions of this nature to contend against, if, in short, the similarities between them in the situation under which the services were rendered extended to every condition by which the price of the current could be affected, then a uniform meter rate which is the same for all customers would no doubt be practicable. But such similarities are seldom if ever encountered. In actual practice it is found that the demand, the quantity of current used, and other conditions vary, not only as between the different branches of the service, but also as between the different customers or classes of customers in each branch. These differences do not only extend to factors which affect the cost to the plant furnishing the service, but they also cover conditions which measure what the customers can afford to pay for it.

Under a rate schedule, the rates in which represent the average cost for the plant and are therefore the same for all branches of the service and for all classes of customers, the cost for power and for long hour users generally would be so high that the service could not be generally used for industrial and commercial purposes. Manufacturers, for instance, who are producing for the open market cannot afford to use current for power or other purposes unless it can be had at as low cost as power produced by other means. For most plants the average rate is much too high, not only for competitive

business, but for much of the long hour service. Being too high, it also follows that they will not bring the business. Loss of business means loss of revenue. It means more than this. Since the cost per unit of producing current decreases with increases in the business, such restriction in the output not only reduces the revenue, but it increases the costs per unit. It tends to reduce profits and to increase rates and hence results in losses to the plant and higher rates to its customers. No current should be sold at a loss, but the more of it that can be sold at a profit, the better for all concerned. These facts are well understood by the wide-awake manager but seem to be hidden to a large proportion on the outside.

These illustrations may even be carried further. Business which cannot be had on better terms should be taken even if the revenues it produces only slightly exceed the additional cost the plant is put to by taking it on, provided this can be done without unjust discrimination. The amount by which the receipts are greater than such additional cost may be counted as profits, for it aids in meeting the fixed charges of the plant and by its amount reduces the share that otherwise would have to be borne by the rest of the customers. Under the average cost of rate, however, business of this kind could not be had and such rates would therefore tend to restrict the business of the plant at the expense of all concerned.

To make these points a little more clear, let us consider a concrete case. In the table above, which shows the cost of the different classes of service for a particular plant, it will be noted that the total cost assessed to traction is \$25,813.14, which is equal to about 1.9 cents per kilowatt hour. One of the reasons that the cost for traction service is so much lower than the other classes is that this current is taken at the switchboard; consequently it is not charged with any of the expenses of distribution. It so happens that 1.9 cents per kilowatt hour is the best price that the utility could get from the traction company. When the costs were apportioned to the different classes of service, it was found, however, that the traction company should have paid \$31,790.81, or at the rate of about 2.3 cents per kilowatt hour. But the traction company would rather generate its own current than pay more than 1.9 cents per kilowatt hour. The question then arises whether it is advisable for the utility to take this business at the price named, also whether the other classes of consumers will be injured or benefited if the utility does sell cur-

rent to one consumer at less than cost. In order to answer this question it is necessary to ascertain what additional costs the traction service necessitates, or in other words, what items of expense would be eliminated if the utility stopped supplying current to the traction company, and compare the cost obtained with the revenue that will result from supplying current at the highest rate that the traction company can be induced to pay.

The facts can be set forth as follows:

	Apportioned cost basis	Additional cost basis
Generation expense	\$17,443.42	\$10,000.00
General expense	2,422.39	
Interest, depreciation and taxes	11,925.00	6,982.50
Total	\$31,790.81	\$16,982.50
Revenue from railway	\$25,813.14	\$25,813.14
Excess of apportioned cost over revenue	5,977.67	
Excess of revenue over additional cost		8,830.64

The load factor of the traction service is about 34 per cent as compared with a load factor of 24 per cent for all other classes combined. This, together with the fact that the traction company takes about 26 per cent of the entire output of the station, seems to indicate that the additional cost for power would not be over \$10,000. It will be noted that under the apportioned basis \$2,422.39 of the general expenses have been included. Considered from the standpoint of the additional expenses that would be occasioned, none of this item would be assessed to traction.

The generating station has a capacity of 4,200 kilowatts and cost about \$103 per kilowatt. Of the total capacity about 900 kilowatts are used for the traction service. It is estimated that if the station had been constructed only large enough to meet the demands of the other classes of service, it would have cost about \$115 per kilowatt. The additional investment, then, necessary to furnish current to the traction company amounts to \$52,500 or about \$58 per kilowatt. Interest, depreciation and taxes on this additional investment, plus the \$10,000 of additional operating expense, give a total additional cost of \$16,982.50, which leaves an excess of revenue over cost of \$8,830.64 to be used in reducing the cost to the other classes

of consumers, as compared with the apparent deficit of \$5,977.67, which results when traction is assessed with its proportionate part of all expenses.

The effect on the cost to the other classes of selling current to the traction company at less than the proportionate cost of supplying it, can be readily seen by comparing the cost per kilowatt hour for the other classes of service when current is furnished the traction company, with the cost as it would be if current were not furnished to this company. Under the former condition, the average cost per kilowatt hour is 5.6 cents; under the latter the average cost to the remaining consumers would be 5.85 cents. While this difference appears slight, when presented in this manner, yet it nevertheless proves the point.

The justification of this method of treating some customers when their business cannot be had on a better basis is exhibited a little more vividly when a comparison is made between the cost curve of the business as a whole when traction is included and when traction is excluded, as shown in the following table:

Number hours plant is operated daily	Cost of supplying current when traction is included			Cost of supplying current when traction is excluded		
	Capacity	Output	Total	Capacity	Output	Total
	<i>cents</i>	<i>cents</i>	<i>cents</i>	<i>cents</i>	<i>cents</i>	<i>cents</i>
1	8.13	1.98	10.11	10.00	2.39	12.39
2	4.06	1.98	6.04	5.00	2.39	7.39
3	2.71	1.98	4.69	3.33	2.39	5.72
5	1.62	1.98	3.60	2.00	2.39	4.39
10	.81	1.98	2.79	1.00	2.39	3.39

It might be well to explain here that the term "capacity" as used in this table is the sum of the "consumer" and "demand" expenses shown in a previous table and is the same as the "fixed" expenses shown in the first illustration; also the "output" expenses are the same as the "variable" expenses referred to above.

It will be noted that the total cost when traction is included starts as 10.11 cents when the plant is operated one hour a day and decreases to 2.79 cents, when the plant is operated ten hours a day. Compared with this the cost when traction is excluded starts at 12.39 cents when the plant is operated one hour a day and decreases to 3.39 cents when the plant is operated ten hours a day. The differ-

ence between the two sets of figures decreases with the increase in the number of hours the plant is operated each day. For one hour of operation this difference is 2.28 cents and for ten hours it is 0.6 cent; consequently rate schedules modeled respectively after these cost curves will show a greater divergence for short hour than for long hour use. From this it follows that the customers who are most benefited by selling current to the traction company at less than the proportionate cost of supplying it, are the customers who use their installations comparatively a short time each day. These are usually residence consumers, the very ones on whom this manner of handling certain consumers is supposed to throw an additional burden. Under a uniform rate such adjustments, of course, would be impossible, and the result would be that regular consumers would have to pay more for current.

A high load factor stands for low costs but a satisfactory load cannot possibly be obtained without rate schedules that for each branch and class of service are as closely adjusted to the cost as is practicable under the circumstances. In the operation and management of a public utility, there is no feature that is of greater importance either to the utility or its customers than a properly adjusted rate schedule.

That such unit costs as those outlined above are of the greatest value in building up proper rate schedules for electrical plants is obvious. They constitute in fact the most important material for these purposes that it is possible to obtain. This is as true when the rate schedules are so constructed as to give separately the customer, the demand and the output charges, as when the customer and the demand charges are covered by meter rates, which decrease in amount with increases in the daily use of the service or installation. In connection with the form alone of the rate schedules, there is much to be said, but the space allowed for this paper does not permit a full analysis of the same.

ELEMENTS TO BE CONSIDERED IN FIXING WATER RATES

BY GEORGE W. FULLER,

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The modern cry for what has been happily termed the "square deal" is exercising a material influence on the management and operation of public utilities, particularly in their relation to the public. It is considered essential that all service rendered by a public utility shall be paid for by the recipient of this service, and that the payment for this service shall be proportioned to its cost to the public utility, so that no one consumer, large or small, shall receive special favors and benefit by rates lower than is fair, or suffer from rates higher than is fair. The basic principle of all rate making for public utilities is that a fair rate of profit shall be assured to the public service corporation, and that this profit shall be made up of a correspondingly uniform rate of profit on all portions of the service rendered. Wholesale rates or quantity discounts are to be justified only in so far as they are based upon a lesser cost of service under such conditions.

The public water supply company, which is probably the most important of all such public utilities, one which comes into most intimate contact with individual consumers, and whose proper management and fair dealing comes quickest home to the health and welfare of the individual, must make its rate to its customers on this basic idea.

Confusing Conditions

The cost of service and rates to be charged for water supply has in the past usually been, and still is, seriously confused by the special conditions attending this service. Some of the supplies are operated by the public themselves through their municipal government; others are operated by private companies for their individual profit; still a third class by a combined system in which the management of a private company is to some extent controlled by the public administration. Again, of the public water supplies, some are operated practically at cost, with the idea that the furnishing of

water to the citizens is a civic activity for the welfare of the citizens and that no profit should be charged for this service but only the cost of the service returned to the government. Some city governments supply this water at a loss, charging materially less than the cost and making up the deficit by a general tax levy. Still a third class charge a price for the water materially higher than its cost, bringing in a considerable profit, which is credited to the general income of the administration.

A further complication arises from the fact that water service for fire protection is often furnished either by the city or by the private water company free of any charge to the city government or to individuals. The water for public use for the municipal buildings, school-houses, hospitals, and prisons, is likewise furnished free of charge. In some cases water furnished for institutions maintained for philanthropic or charitable purposes, such as churches, hospitals and cemeteries, is not paid for.

Basic Principle

Such confusing and undesirable complications of bookkeeping make more difficult the determining and charging of equitable rates for the various classes of service. For the proper fair dealing to all, certain basic principles must be established.

1. All water furnished by the water service company should be billed and charged for at a fair rate, proportioned to the service, to pay a fair profit to the water company or to the public water service.

2. Water furnished for general public use or for fire protection or to any class of users to whom the city wishes to make a subsidy should be charged for at the normal rates. If the conditions of the franchise are such that such water must be furnished free by the water company, the service should still for proper bookkeeping be determined and charged even if it must be balanced by a credit which is practically a tax on the water company equal to the amount of this water bill.

On this principle there will be neither greater nor lesser income, either gross or net, to the public water service or water company, but there will be a clear understanding of the proper charge for each class of service, and charges can then be fairly divided.

The old forms of water rates which have in the past been based on no understanding of or care for the cost to the service were usually

flat rates, depending on the frontage of the property, the number and class of fixtures connected in the property, or the size of the tap to the street mains. Such a method of charge alone was highly undesirable and uneconomical. Waste of water was greatly encouraged and charges made to the various properties were almost invariably without any real relation to the cost and value of the service rendered. This method has been superseded in many cases by a straight meter system, in which the charge is made at a uniform rate based on the quantity of water actually registered. This charge is made high enough so that the total income produced will be the necessary amount to pay all fixed and operating charges and to leave a fair allowance of profit. The entire cost is then on the consumer alone and the apparent fairness of such a method has made it undeservedly popular and it has often been compared to the same method of charging for gas delivered.

The fairness of this method of charging is, however, only apparent and not real. The true cost of the service is no more to be properly based only on the amount of water consumed than it is to be based only on the number of fixtures connected in a house. It is not too much to say that there are even cases where the old-fashioned flat rate method of charging is actually fairer than this meter rate. The cost of service includes not only the cost of the water actually consumed on the premises, but it includes a large "readiness to serve" charge, which is always a material item in the cost and depends on many other factors apart from the amount of water used.

Elements of Rates

The elements to be considered in fixing water rates are fundamentally:

1. The total cost of service.
2. The division between the cost of service to the public generally and the cost to the individual consumer.
3. The division in the cost of service to the individual consumer between those elements of cost comprised in the phrase "readiness to serve" and those elements of cost proportioned to the amount of water actually consumed.

Plant Value

The total value of the utility is a very difficult quantity to determine properly, and it can be judged only by considering the question of appraisal from a number of standpoints. One important indicator is the book cost, showing what has actually been expended on the property after making suitable allowance to bring the bookkeeping methods up to what is required by modern practice. This book cost will, of course, make no allowance for changes between the value at the time the works were constructed and the present time, during which period the costs of material may have either increased or decreased and the costs of labor usually increased. It will, however, include practically all other elements of value.

The earning power of the utility under current rates is of itself no indication of the fair value of the plant. It is possible, however, to get some suggestive ideas by considering what would be the earning power of this utility at rates which are current and accepted as satisfactory with other waterworks property of somewhat similar nature and making due allowance for the actual conditions of operating expenses and other charges peculiar to the locality in question.

The most common and most generally accepted method of deriving the value of a waterworks plant is to make an appraisal of the cost of reproduction of its physical plant new, taking as unit prices averages of those current for material and labor over, say, the last five years. An addition to the net reproduction cost of physical plant must be made for engineering, legal expenses, clerical work, administration, and contingencies, ranging from 12 to 18 per cent, depending on local conditions.

In addition to these, an allowance must be made for interest on money invested during the period of construction. This period will vary according to the size and nature of the property, but will rarely be less than two years, and the cost of this interest may be taken at 6 per cent on one-half the reproduction value of the property for each year it is estimated the period of construction will last.

Other items of overhead expense which are often logically and fairly incurred are discount on bonds and the cost of promotion services. There are some cases where such charges are not properly to be included, but in the great majority of private waterworks properties these are fair elements of value and represent money ac-

tually expended. The amount of these items cannot be averaged, and must be judged from the nature of the property and its peculiar conditions.

A further item to be included in the value of the property is a fair allowance for working capital. This for an average property may be taken as a sum amounting to six months' operating expenses.

A further element of cost is what is usually called "water rights." If the owners of the waterworks property have an exclusive private ownership of the right to take the water needed for the purpose from certain places, this right represents a value which must be allowed for. In some cases the value of this water right can be measured by the difference of cost occasioned by attempting to get water from some substitute source. For those cases where no substitute source is possible, there is no concrete basis for evaluating the water rights, and an allowance must be made which seems fair in the judgment of the appraiser.

The last of the elements going to make up value is an item sometimes called "development expense" or "going value." This going value represents the difference between the actual live working utility and a plant which would have all its other assets and properties, except that of being in operation, having customers, and actually supplying them with water. Many arithmetical systems of calculating this going value have been suggested, but in the last analysis it comes to a question of judgment and the amount which, in the best judgment of experienced men, is to be allowed for this item will vary according to the nature of the property, ordinarily ranging from 10 to 20 per cent of the sum of all other elements of value.

Having obtained in this way a sum representing the total value of the utility under present conditions, all returns in the nature of interest and profit will be based in the majority of cases on the value of this property in its new condition. In some cases the depreciated value obtained by deducting the physical depreciation from the value new is a proper basis for returns. In still other cases an intermediate value is a fair one. There is no simple, universal rule for determining this proper basis, as it will largely depend on the adequacy or inadequacy of the income of the property properly to provide a suitable depreciation fund to maintain the property and to return its value to the investor at the end of the period of his franchise, if this is a limited one.

Cost of Service

The total cost of service is made up of a number of elements. The first of these is operation, and the second maintenance. These are entirely dependent on local conditions and cannot in any way be averaged or prejudged. The third element is the depreciation charge sufficient to maintain the property in first-class operating condition at all periods of its life, to renew any wornout or obsolete parts, and generally to provide a sufficient fund so that the investment may be maintained intact. This depreciation fund varies according to conditions, but may be assumed in the absence of special information to range from 1 to 2 per cent per year. The fourth element is interest on the investment, which may be taken as 6 per cent of the total value of the utility. The fifth and last element is profit, and this may be taken in addition to the interest allowance to be an average from 1 to 2 per cent of the total investment.

The sum of these elements fix what must be the gross income of the water supply utility. In considering the division between public service and private service, it will often be found that public service is not directly charged for. If the water supply is provided by the city government itself, the water department should bill against the general tax fund a fair charge for this public water service, and this public water service should be paid for not by the water consumers alone, who do not get the only benefit for this service, but by the city at large, for it is the city at large that benefits. If, on the other hand, a private water company is forced by the terms of its contract to give such water service without charge, or if partly paid for to give this service for an inadequate payment, the total cost for the excess of cost above payment of this class of service should be properly determined, and if it is necessary to charge it against the water consumers, as unfortunately it sometimes is, it should be charged not against the actual gallons of water consumed, but as an overhead charge in the form of "readiness to serve" charge.

With this preliminary consideration of cases where rates cannot be properly billed as they should be, the determination of fair water rates can be made.

Fire Protection

The investments for fire protection purposes include a number of elements which are obvious and a number which, though not so easily seen, are just as real. For the purpose of supplying the needed water for fire protection there will be required additional expense on all parts of the construction of the system, starting with intakes, conduits, and continuing through pumping station reservoirs, purification plants, distribution system, hydrants, and connections. For operating service there will not be required a large volume of water for fire purposes, but the fixed part of the operating expense not depending upon the amount of the water supplied must be in part charged to this fire service. In addition, a fair proportion of losses from the mains in the form of leakage which may amount to 25 per cent of the total water distributed is fairly chargeable to this part of the service. The ultimate proportion of the total investment and maintenance occasioned by or needed for fire protection will depend on the nature of the water supply system and the size of the plant. A water supply system delivering water by gravity from a large reservoir will have only a portion of the reservoir and distributing mains chargeable to fire protection. A direct pressure pumping system, however, will have a portion of all parts of the system needed for fire protection alone, and this element of the service will sometimes occasion a greater expense than the actual water consumed. A large system obviously need be extended only moderately to provide additional water and distribution facilities for fire service, while a small system must be heavily reinforced for this purpose.

The part of the water system properly chargeable to fire protection may range in a general way from 5 per cent in a town of 300,000 inhabitants up to 75 per cent in a town of 5,000 inhabitants, according to the local conditions.

An additional element is introduced under conditions where private consumers are encouraged or permitted to have connections for fire protection service, and the question arises whether such private fire protection should be charged to this individual consumer or whether it should be borne by the public. A decision on this disputed question will never be agreed to by all, but must remain a matter of opinion. It is our opinion that it is to the best interests of the public at large to encourage the use of such connections for

fire protection, and that the cost of these connections should be borne by the public, together with the costs of all other items of fire protection service.

The commonest way of charging for this public fire protection is in the form of a rental for hydrants installed. This method is not in every case an absolutely equitable one, as the cost of the water property is not entirely to be measured in proportion to the number of hydrants connected. If, however, the number of hydrant connections is a reasonable one and the rate of hydrant rental service is properly proportioned to the costs of the particular service and its conditions, this method of charging should be perfectly satisfactory.

The hydrant rentals common in this country range from nothing or nominal amounts to about \$60 per hydrant per year, with an average over the country of about \$40 per hydrant per year. On the basis of population the cost of this fire protection service will probably range from \$0.15 to \$1 per capita per year.

Public Consumption

Water supplied for public use is that delivered to the city for use in public fountains, for use for street sprinkling and street flushing, for municipal buildings, school buildings, and in addition water donated by the city to charitable institutions of various classes. The total amount of this may average 10 per cent of the total amount of water delivered. As we have above stated, all water used in this way should be considered and charged to the public exactly as water delivered to any other consumer, and will not affect fair average rates.

Private Consumption

The cost of water service to the water consumer is the next division which is to be considered. This should be fairly separated from other items of water service noted above, and only this portion of the water utilities cost should be charged to the consumer as a consumer. All other elements of expense are for the general public welfare and should be borne by the general public and not assessed against the water consumer alone. The consumers' rates should properly be such as will return to the public utility a profit on the cost of this particular service.

Having separated that portion of the total cost which is to be collected from the water consumer, there are two classes of charges which are to be made. The first of these is a service charge made against any consumer connected with the water system and embraces those elements of cost which are occasioned by the water utility being ready to deliver to the consumer his maximum required amount of water. The second of these is the water charge, and covers only the cost of the water consumed.

Service Charge

The general popular opinion which, aiming at justice, overshoots the mark, is that equity is observed in charging all consumers in proportion to the amount of water for use. The heavy costs of the "readiness to serve" charge are not fully appreciated. It costs the water company almost as much to connect a meter to a vacant house and stand ready to supply water at all times as it does to deliver the ordinary water consumption to a house using the average amount of water. The only difference between the two is this second element or charge for water alone.

The service charge which must be based on the maximum amount of water demanded by the consumer includes interest, depreciation, and profit on the investment of so much of the water company's property as is needed to deliver this maximum amount of water. This part of the property is usually the great bulk of the total. In the extreme case of a gravity water supply of an impounded water delivered to the consumer without purification and without pumping, it will cost the water company no more to deliver continuously over the twenty-four hours a quantity of say 4 gallons a minute to the consumer than it will cost to deliver to him the same amount only for one-half hour a day, particularly as the small consumer is almost sure to use his small quota of water at the peak of the load on the distribution system, and the distribution system must be proportioned to his maximum demands, though they are of short duration. For such conditions a meter system has only a limited function and a limited value, and has any value at all only because the times of water consumption, though roughly the same, will not exactly coincide, and the overlapping or maximum consumption of individual consumers will mean a slightly lesser total than the aggregate of

maximum demands. Another element of the "readiness to serve" charge is the overhead expense of administration, the expense of maintenance of the distribution system, the expense of supplying and maintaining meters, reading meters, making bills, etc.

Another element of the "readiness to serve" charge is leakage of street distribution mains. This leakage will seldom be less than 20 per cent and may easily exceed 40 per cent of the total amount of water handled. There is no reason why this leakage should be charged to the water consumer alone. It should rather be charged to all connected consumers, including the public service and public fire protection and all private consumers in the form of a service charge.

The last element of the service charge will be what is sometimes called "under-registry of meters." This is really occasioned by the condition that a continuous small leakage from the plumbing fittings in the house causes a loss of several gallons per hour, which is at too small a rate to register on the meter. This loss may range from 5 to 20 per cent of the total. It is, of course, in no sense proportionate to the actual registered consumption of the connected consumer, but is rather roughly proportionate to the service charge which is more nearly in the ratio with the number of fittings the consumer has connected.

The aggregate of all these costs should be charged against the individual consumer in the form of a service charge which should be proportionate either to the size of his meter or tap connection to the main or else the number of fixtures connected. The latter basis is probably a trifle more equitable than the former, but for the sake of simplicity it is probably desirable to base this service charge only on the size of the meter. The amount of this service charge, while varying with the nature of the water service, in all likelihood should never be less than \$5 per year for a $\frac{5}{8}$ -inch meter, which is the smallest in ordinary use, and in some cases it may fairly run to more than double this amount.

Water Charge

The final element of water service charges is the amount to be charged for the water actually consumed, as registered by meters. This will also vary according to the conditions of the water supply,

and may run from a very small figure to a very high one. It will comprise the costs actually expended for water delivered, including such elements as labor, pumping operation, returns on capital invested for water delivered, and other similar charges. The fair charge for such water delivered and actually registered will probably run from 4 cents to 20 cents per thousand gallons, in addition to the "readiness to serve" charge, which, as above stated, will run from \$5 to say \$15 per year for the $\frac{5}{8}$ -inch meter connection.

In brief, then, the income of the water utility, whether publicly or privately managed, should make an operating fund to cover the cost of operation, the maintenance of the property to take care of current repairs, a depreciation fund to cover the fund maintenance and repairs, obsolescence, and in general maintain the property at its maximum efficiency, interest on the value of the property both tangible and intangible, and finally, an allowance for profit. This income is to be derived:

1. From the public purse for services rendered to the public at large.
2. From a service charge made against all connected consumers, whether public or private.
3. From a meter charge for water actually consumed.

In the past the making of water rates has suffered from the fact that the bias of the rate makers towards certain ends has been substituted for a straightforward analysis of the elements of expense. On the one hand, the flat-rate system has been used only for the purpose of getting the desired income in the simplest way. On the other hand, the straight meter rate faddist has aimed at a straight fixed rate only for such water as is metered, so as to reduce waste.

The only fair method is to charge for any service what it is worth, which means here a combination of service charge and a moderate water rate charge. By such means it is possible that meters may find a ready acceptance in some places in which they have so far been unable to make entrance.

REGULATING THE QUALITY OF PUBLIC UTILITY SERVICE

By J. N. CADBY, E.E.,

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The popular conception of the usefulness of a public utility commission and of the relative importance of its various functions is undergoing a change. Occasionally these bodies are spoken of as "rate commissions," but as they become more thoroughly established, it becomes apparent that rate regulation is not their only important function. Thus far it has only been possible to revise rates by making rather elaborate investigations of the individual utilities concerned, and consequently relatively few people have been benefited by rate revisions during the first few years under commission regulation. In any large group of utilities some will be found where rate wars or other conditions have brought about abnormally low rates. These utilities are naturally among the first to apply for readjustment and thus the general effect of the first few years' work measured by rate reductions alone is often rather discouraging to those advocating commission regulation of public utilities. The authority of commissions to regulate the quality of service furnished by the utilities gives an opportunity to benefit practically all consumers of public utility service from the first. The service is improved from the time the utilities and commission's staff begin discussing and considering standards of service. Where the quality of service is not regulated, a reduction in rates may be followed by a reduction in quality of service and in this way the commission's order may be even worse than valueless. Reduction in gas rates could be counteracted or more than counteracted by a reduction in heat value.

The laws in many states give the commissions authority to regulate the service furnished by public utilities, but some prescribe, to a greater or less extent, the quality of service to be furnished and the methods to be employed by the commission in order to maintain this service. Perhaps the most common example of this feature in a public utilities law is that of requiring the commission to test

and seal each gas meter before it can be used in the state. A more effective method and one which has many advantages is to give the commission authority to ascertain and fix standards of service, as is embodied in the Wisconsin law.¹ This not only permits a careful study of conditions and requirements before standards are adopted, but also allows revisions to be made from time to time to take advantage of the progress in manufacture, utilization, regulation and testing.

In administering a law regulating the quality of service of public utilities, two general methods may be employed. The commission may do all the testing and inspecting or it may require the utilities to make inspections and tests which will be supplemented by tests and supervision by the commission. This latter method is much more efficient and satisfactory to all concerned. The utilities can test their own meters more cheaply than the commission can test them, and can check up pressure conditions with the extending of the system and variations in load that are bound to take place.

There are many advantages in having the service inspected by some one who is not actually assisting in furnishing the service. There are also many advantages in connection with the traveling about from one city to another, giving each operator the advantage of the experience of many others in dealing with much the same problems. Many of the smaller utilities and municipalities could not afford local inspectors or complete testing equipment. In the large cities, however, this is not the case. In the smaller municipalities the only people familiar with public utility operation are those connected with the public utility itself. Where the state organizes a technical staff to take care of the service of a few hundred public

¹ Sec. 1797m-2. The Railroad Commission of Wisconsin is vested with power and jurisdiction to supervise and regulate every public utility in this state and to do all things necessary and convenient in the exercise of such power and jurisdiction.

Sec. 1797m-23. The commission shall ascertain and fix adequate and serviceable standards for the measurement of quality, pressure, initial voltage or other condition pertaining to the supply of the product or service rendered by any public utility and prescribe reasonable regulations for examination and testing of such product or service and for the measurement thereof.

It shall establish reasonable rules, regulations, specifications and standards to secure the accuracy of all meters and appliances for measurements, and every public utility is required to carry into effect all orders issued by the commission relative thereto.

utilities, a high grade of work can be expected with but slight expense for each city affected. Carrying this a step further, however, and regulating the service of all utilities in the country from one central bureau or department decreases the effectiveness as well as the economy and gives such a wide diversity of conditions of the manufacture and utilization that uniform service rules would probably be impracticable. In some sections of the country natural gas is used almost exclusively, while in others it is not used at all. In some states open flame burners for illumination are common, while in others they are seldom found. In some localities gas is used principally for fuel and in others principally for illumination. It therefore appears to the writer that the state is the logical authority to regulate the quality of service furnished by the public utilities, and it is hoped that the following discussion will demonstrate this fact.

The general methods employed by the Wisconsin commission in administering that portion of the public utilities law which relates to the quality of service may be of interest. Here the general plan of procedure is begun with a preliminary study of the operating conditions and the quality of service already being furnished, together with an analysis of the complaints received from consumers in regard to their service. A public hearing is then called and all interested parties are given an opportunity to discuss the various elements which go to make up adequate service, and in some instances to discuss a tentative set of rules, covering these matters, which has been prepared by the commission's engineers. Before the commission's order is issued establishing standards of service in the form of definite rules, the utilities have begun to examine the service they are furnishing and to study the demands of adequate service. With the issuing of the order, the utilities begin making specific tests and keeping prescribed records and the commission's inspectors travel about the state unannounced to determine the degree with which each utility complies with the standards in force, and to examine its records. This commission has jurisdiction over all utilities furnishing gas, electric, telephone, telegraph, water, heating or transportation service. The commission regulating railroads was given authority to regulate all the public utilities in 1907. During the latter part of that year inspection and study were begun with regard to the quality of gas service then being furnished in the state,

which was followed and supplemented by investigations of gas and electric service usually in connection with formal and informal complaints before the commission. In the spring of 1908 a public hearing was conducted at which standards for gas and electric service were discussed, and in July, 1908, a formal order was issued establishing standards for gas and electric service. With the establishing of these standards the number of inspectors was increased and all plants in the state visited from one to six times a year, depending upon the conditions observed.

These standards of gas and electric service were administered with but few exemptions and modifications, until August, 1913, when they were superseded by a revised set of rules. Under this revision more of the detail work is carried on by the utilities, including the tabulation of certain phases of their testing work. Several changes have been made regarding the methods of testing electricity meters. Standards for telephone service have been discussed in conventions and in a public hearing, but the formal order of the commission establishing these standards has not yet been issued. The service of other public utilities has been investigated in connection with complaints, but as yet no formal standards have been adopted governing service other than gas or electric.

Gas utilities in Wisconsin are required to keep their meters correct to within 2 per cent and to test each meter before it is installed and at least once every four years. The complete original record must be kept of every gas meter test and proper precautions taken to insure accurate and reliable testing. Consumers may have their meters tested by requesting the utility to do so provided such test is not requested oftener than once in six months. Where consumers prefer to have the tests made by a representative of the commission they can do so. For these referee tests a fee of from \$2 to \$8 per meter is charged depending upon the size of the meter. This fee is paid by the consumer if the meter is correct or slow and by the utility if the meter is more than 2 per cent fast. Meter readings and dates are required to be entered upon the bills so that consumers can verify them.

The gas must have an average of not less than 600 British thermal units per cubic foot and the minimum heat value should never fall below 550. The larger companies are all required to have calorimeter outfits for determining the heat value and to make these

determinations at least three days each week. The pressure must be kept within prescribed limits and each utility is required to make a survey of its system to demonstrate that the pressure conditions are satisfactory. The amount of sulphur and sulphureted hydrogen allowed in the gas is limited and the companies are required to keep a record of all complaints made regarding the service, together with the time the complaint is made, its nature, remedy and time of completing the work.

Electric utilities are required to maintain their meters correct within 4 per cent from one-tenth load to full load. These meters are required to be tested at installation and at intervals of from six to twenty-four months thereafter, depending upon the type and characteristics of the meter. Requirements similar to the gas rules are in force covering meter tests, records and billing. The utilities are required to make all reasonable effort to eliminate interruptions in service and are required to keep records of these interruptions and of the station operation. They are required to maintain the voltage throughout their systems within prescribed requirements and to make plans to demonstrate their compliance with these requirements. They are also required to inform consumers of conditions under which efficient service may be secured, and to render assistance in securing lamps and appliances best adapted to the service.

The inspections are brief, but cover the various items enumerated above. The inspectors usually complete an inspection in one or two days, but sometimes are obliged to spend a week or more in one place. The plan adopted consists of beginning the tests, if possible, before the inspector's presence is known. Before leaving, the inspector goes over the records of the utility, interviews the municipal and utility officials and consumers, follows up any irregularities reported in connection with the former inspection and by the aid of indicating and graphic recording instruments determines accurately the conditions prevailing at the time of the inspection. The inspector's report, together with maps, records and newspaper clippings, is sent to the office of the commission where the report is checked over and a letter is written to the utility giving the results of the inspection and calling attention to irregularities which may exist together with suggestions and recommendations when these seem necessary.

If the service is found to be inadequate and steps are not taken

to make proper improvements when these matters are taken up informally, the utility is notified to appear before the commission in a public hearing and show why the penalty for violating the orders of the commission should not be imposed. Frequently the improvements are made before the hearing or so soon thereafter that no further order or action is necessary. Sometimes orders to make specific improvements are issued, but it is seldom necessary to do so.

The efficiency of having state regulation of the service furnished by these utilities is particularly apparent in the case of gas inspections. In order to determine the heating value of gas a rather expensive and complicated testing outfit is required. It would be something of a burden for the individual cities to obtain an outfit of this kind together with a man to properly carry on the tests. In the state of Wisconsin there are thirty-six gas plants, which are regularly inspected by the commission's representative and this work is all done with one testing outfit which is shipped about the state in a trunk. As a matter of fact, the entire time of the one inspector has never been devoted to the inspection of gas service.

For the inspection of the service furnished by nearly three hundred electric plants, the state has been divided into districts. Four or five district inspectors are able to check up the quality of service furnished by these plants. These inspectors incidentally report on telephone service and extension matters, railway service, dangerous construction and operation, and other miscellaneous matters.

In order to administer these standards it is necessary to have a high grade of inspectors. In Wisconsin these men are all technically trained and in addition have had several years of practical experience. The inspectors keep in touch with the latest developments in the lighting business through the technical press and membership in technical societies. They attend conventions and have their own conferences semi-annually. A little over a year ago the standards laboratory at the state university was enlarged and is now run jointly by the university and the commission. Here the equipment of the commission's inspectors is kept in adjustment and that of the utilities, taken care of. Here also apparatus can occasionally be rented by utilities. This has facilitated to a considerable extent the inspection work.

It might be anticipated that this inspection work would be ex-

pensive, but this is not the case as will be seen from the analysis of costs of the work of the commission. Including supervision and general office and overhead expense of the engineering staff, stenographic work, railroad fare, express and repairs to equipment, the average cost of the gas inspections for the year ending June 30, 1913, was \$35. This makes a total cost per city served for that year of approximately \$65 for gas inspections. The electrical inspections made during that year cost about \$26.50 each, and since those plants giving fairly adequate service were visited only once, the average cost per city visited did not exceed \$34 for this year. The street lighting investigations made during this period are not included with the regular service inspection expense, as this work was rather elaborate and included research and experimental investigation. Many telephone service inspections were made, in which from 40 to 100 test calls showed the promptness and accuracy of operators, the conditions of maintenance and general adequacy of the service. The average cost of these inspections during the year was \$27. With the revised standards for gas and electric service and definite standards for telephone service, still lower costs can be expected within the next few years.

The economy indicated by the above statements would not be possible except for the fact that the utilities are encouraged and required to criticise and inspect the quality of service they are furnishing, and to do the detail meter work themselves. The commission does not attempt to locate all places where irregular service conditions prevail, but leaves this responsibility with the utilities. The service now being furnished by the public utilities in Wisconsin is considerably better than what it was six years ago and is better than that in many neighboring states.

SERVICE REGULATIONS FOR GAS

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When it is understood that the business of the gas utilities of this country furnishing manufactured gas amounts to over \$100,000,000 annually, to say nothing of the tremendous natural gas business, the need of definite standards for the conduct of a service that affects the majority of homes in every urban district becomes apparent. The larger cities have for many years exercised considerable supervision over the gas service of their respective communities but it is within a very few years that the regulation of gas utilities has been made a part of the responsibilities devolving upon the public service commissions of the states. Circular No. 32 of the bureau of standards shows the regulation of the gas utilities for 229 cities of more than 25,000 population to be as follows:

	Number of cities
State rules enforced.....	76
State commission has authority (unexercised).....	94
City ordinances enforced.....	78
No artificial gas supply.....	21
No rules enforced and no state commission in authority.....	12
Ordinances pending.....	4
Municipal operation.....	3
Total, less duplicates.....	229

Twenty-one states do not attempt regulation of such companies and of the twenty-seven states that have the power, but few have commissions that have prescribed definite rules or have taken steps to regulate the character and quality of the gas supplied. Massachusetts is reported as the first state to enforce regulations of gas service, a state inspector having been appointed in 1861. A state commission was appointed in 1902 which has controlled such matters since that date. In 1907 the Railroad Commission of Wisconsin was given power to supervise and regulate every public utility in the state. Several state commissions have been organized within the

past five years and the work now being carried on under the direction of these commissions is attracting conspicuous attention as the purpose, efficiency and fair-mindedness of these organizations become better known.

In preparing rules for the regulation of any public utility the underlying principle should always be one of fair treatment for both the public served by the utility and the utility itself. The stringent regulations that might be consistently met by certain large gas companies in the larger cities might prove absolutely prohibitive when imposed upon the smaller companies of a state with limited financial backing. The rules adopted by a state commission must, therefore, be thoughtfully and fairly drawn. On the one hand, they must impose high standards of gas quality, pressure and uniformity of service and on the other they must impose no undue hardships upon the smaller companies. Any rules or regulations that place excessive demands upon a utility result in increased expense and any increase in the cost of manufacture or distribution must ultimately be borne by the public. It is, however, but fair that the price charged shall warrant adequate and satisfactory service and shall allow a fair return on the invested capital.

A thinking public is willing to pay a fair price for efficient gas service but is not willing to meet an increased price with no apparent increase in efficiency of service or quality of gas. In formulating rules, to govern the production, sale or distribution of gas it is important that they be so drawn as to be fair in every detail to both the public and the utility company. It is also important that, although the requirements must be rigid, they should not be so rigid as to prohibit the possibility of their proper enforcement.

From utilities furnishing gas service the public has a right to expect

1. Gas of good and reasonably uniform quality.
2. Satisfactory and reasonably uniform gas pressure.
3. Correct appliances for measuring the gas used by each customer.
4. Freedom from interruptions to service and avoidance of accidents.
5. Reasonable prices for the service rendered.
6. Proper distribution and readiness to serve all communities within the natural territory supplied by the utility.

For a great many years the quality of gas was largely determined by means of the so-called candle power requirement and many

ordinances and regulations today still cling to the candle power test. When open flame gas burners were in general use the candle power standard was undoubtedly the most effective and altogether satisfactory one. Today, however, when probably not over 10 per cent of the total gas used is consumed in open burners it is questionable whether the candle power standard is of any real service in determining gas quality. For use in connection with gas ranges for cooking, incandescent mantles for lighting, furnaces, ovens and pits for heating, and gas engines for power development, a quality requirement based on the heating value of the gas seems to be more consistent today than a candle power requirement and the double standard recommended by some seems quite unnecessary. Experts in the field of gas manufacture seem to be almost unanimous in the feeling that proper regulation of heating value can be more readily obtained than of candle power. They are, therefore, distinctly of the opinion that in general the one standard, heating value, is the desirable one. It is undoubtedly true that in certain sections of the older cities open flame burners are more or less in use and it is possible that in a few of these cities these burners may utilize as much as 25 per cent of the gas supplied to these communities but these burners are rapidly being displaced by the mantle type and when natural gas is taken into consideration it is probable that the total gas utilized in open flame burners will fall well below the 10 per cent limit indicated above. The need, therefore, of the candle power standard seems to be obsolete. Assuming that, for state regulation, the single standard of heating value is to be adopted, it becomes necessary to determine the definite heating values which shall serve as limits in the regulations imposed. At least two heating value standards must be recognized, one for manufactured gas and one for natural gas.

Several kinds of manufactured gas have to be considered. Usually they are coal gas, carbureted water gas, coke oven gas, mixed gas and oil gas. Coal gas is made by the destructive distillation of coal in retorts which are externally heated. Approximately 5 cubic feet of gas are secured per pound of coal and the heat value of such gas usually ranges from 550 to 630 b.t.u. per cubic foot. Carbureted water gas is the result of a combination of two gas-making processes. Water gas is generated by turning a jet of steam upon an incandescent fuel bed. This water gas is usually enriched by the addition of gas generated from oil, the resultant gas being known as carbureted

water gas. The larger portion of the illuminating gas in this country is of this type. Carbureted water gas usually has a heating value ranging from 500 to 650 b.t.u. per cubic foot. Coke oven gas is practically a regular coal gas but the process of manufacture is somewhat different from that of the so-called coal gas. The primary object of the coke plant is the manufacture of coke and the gas generated is practically a by-product. The heating value of coke oven gas is usually somewhat lower than that of ordinary coal gas. Mixed gas—many plants today are manufacturing a so-called mixed gas which is nothing more nor less than a mechanical mixture of carbureted water gas and coal or coke oven gas. Oil gas—in the oil districts of the country large quantities of gas are made directly from crude oil.

In determining the proper standard for the heating value of gas in any community it is essential that the types of gas manufactured in that territory be carefully considered and that the efficiency of the processes of manufacture or the individual standards of the companies furnishing this commodity be taken into account when first establishing a basis for regulation. This is essential because it is important that sufficient leeway be granted to meet the commercial conditions involved in the manufacture of the different types of gas of reasonable quality supplied in the different sections of a state. It should further be recognized that to impose too rigorous conditions during the early application of new laws may mean either excessive expense to the smaller companies, resulting in an abnormal increase in the cost of gas to the public or the impossibility on the part of the utility to carry out the requirements imposed. An examination of the heating value standards of various states and cities shows the average to be about 600 b.t.u. per cubic foot; but in the majority of these cases the gas is limited to the three varieties, namely, coal gas, carbureted water gas or mixed gas. It is usually customary in all such regulations to permit a maximum variation of 50 heat units below the average monthly requirement, that is, the usual stipulation is that the utility furnishing manufactured gas service must supply gas of not less than 600 b.t.u. total heating value per cubic foot as referred to standard condition of temperature and pressure and that the minimum heating value shall never fall below 550 b.t.u.

It is undoubtedly true that many companies are today manufacturing gas of a considerably lower heat value than they imagine.

Owing to the fact that they have not been working under strict regulations they have never actually made any heat value determinations but assume that the gas which they manufacture is necessarily equal in heat value to that of certain other plants from which they have obtained information. A recent report of a joint committee on calorimetry of the public service commission and gas corporations of a state that has been living under gas regulation for several years indicates that even without considering coke oven gas the 600 heat unit standard seems high and this committee has seen fit to recommend an average standard of 570 b.t.u. If coke oven gas becomes an important factor it seems consistent to make the standard even lower than that recommended by this committee.

As a summary of the various recommendations and of the regulations now in force, the following requirements seem consistent for the best results today:

For states already working under gas regulations and in which the manufactured gas supply consists entirely of coal gas, carbureted water gas and mixed gas, a standard of 570 b.t.u. per cubic foot for the monthly average seems to be very satisfactory, although for states in which gas regulation is just being introduced or in which coke oven gas plays an important part, this heat value standard may in some instances be wisely reduced slightly below these figures, with a minimum in each case, as previously outlined, of 50 heat units below the monthly average.

The heat value of natural gas ranges from about 700 to over 1100 b.t.u. per cubic foot. It seems to be consistent to require a quality of natural gas that shall insure a heat value of not less than 800 heat units as a minimum. These heat value determinations of the gas are made on the basis of recognized standard conditions of temperature and pressure.

Gas manufacturers who have been accustomed to no special standards can undoubtedly improve the uniformity of the quality of the gas supplied by their plants and it is quite consistent for a state commission to increase its requirements from time to time.

The phrase "quality of gas" not only relates to its heating value but also to freedom from impurities. Manufacturers of gas are expected satisfactorily to control, among other impurities, the proportions of hydrogen sulphide, total sulphur and ammonia. Gas engineers seem to differ radically as to the seriousness of a trace of hy-

drogen sulphide in gas. Some claim that a trace does absolutely no harm save that the odor produced when the gas is burned is objectionable. Others claim that this odor serves a useful purpose in warning of leaks or open valves. The removal of hydrogen sulphide is a comparatively simple process and the gas company that has any interest in the attitude of its customers will see that its gas is free from this somewhat offensive impurity. It seems, therefore, hardly necessary to include any requirements regarding hydrogen sulphide, but gas regulations should specify the total amount of sulphur that will be permitted. Inasmuch as it is quite possible in good practice with the grades of coal used today to reduce the amount of sulphur to 20 grains or less per 100 cubic feet of gas produced, it has become customary to make the maximum limit as prescribed in the regulations, 30 grains of total sulphur per 100 cubic feet. This serves as a regulator and at the same time cannot be regarded as a hardship.

The regulation of the pressure at which gas is supplied to the customer's appliances seems to be imperative if service is to be of a thoroughly satisfactory nature. This is emphasized distinctly in the following passage from the 1909 report of the Wisconsin Railroad Commission:

It has been shown that in general the gas furnished in cities of this state has been of good quality and the value has been uniform. In spite of this fact, complaint is frequently heard of "poor gas." The summary of gas complaints and our own experience have shown "poor gas," as the consumer uses the term, to be synonymous with "poor pressure" and may be due to one or more of a number of causes. It may be that the pressure furnished to the mains is inadequate, that the service or house piping is inadequate or otherwise faulty, or that the pressure is unsuited to the adjustment of the appliances in which gas is used. In most cases, however, it goes back to the matter of pressure. For this reason, the control of the gas pressure is the most important single factor in securing satisfactory service. The use of gas has been greatly extended in the last few years and all of the appliances which have come into use require a higher pressure than the old open flame burner. It is stated in the discussion of pressure in a former bulletin that the pressure under $1\frac{1}{2}$ inches is unsatisfactory. Most of the companies in the state maintain a standard pressure of about $2\frac{1}{2}$ inches, and it has been noticed in general, where the pressure drops below 2 inches, complaints are heard.

Owing to this tendency to increase gas pressures, the majority of gas appliances are today regulated for pressures of from 2 to

6 inches of water pressure when operating on manufactured gas and for a somewhat higher range of pressures when operating on natural gas. Experience seems to show that the most satisfactory results are secured with incandescent mantles, gas ranges and other household appliances when the pressure is greater than 2 inches. When gas appliances have been adjusted for certain definite pressures it is exceedingly difficult to get satisfactory results if the pressure is allowed to fluctuate through wide ranges or at frequent intervals. It becomes incumbent upon the gas companies, therefore, to hold pressures within certain ranges and to control the daily variation within reasonable limits. Such pressure requirements as the following seem to protect the public on the one hand and to be entirely fair to the utility on the other.

Each utility furnishing manufactured gas shall maintain at the consumer's meter outlet a gas pressure of not less than $1\frac{1}{2}$ inches nor more than 8 inches of water pressure and within said limits the daily variation of pressure at the outlet of any one meter on the system shall never be greater than 100 per cent of the minimum pressure. Each utility furnishing natural gas shall maintain at the consumer's meter outlet a gas pressure of not less than $1\frac{1}{2}$ inches nor more than 14 inches of water pressure, except when greater pressure is specifically provided in the contract between the utility and the consumer, provided there shall be no unfair and unreasonable discrimination or preference, and within the said limits the daily variation of pressure at the outlet of any one meter on the system shall never exceed four inches of water pressure above or below the normal pressure maintained at such point of delivery, unless it can be shown to the commission that such greater variation is due to extraordinary demand in extreme weather. Provided, that variations in pressure caused by operation of the customer's apparatus in violation of contract or the rules of the utility or from causes entirely beyond the control of the utility shall not be considered a violation of this rule.

In order that the consumer may be assured of the correctness of bills submitted for gas service rendered, it becomes imperative that some definite standard of reliability be adopted for meters used in measuring the gas. In general it has been found that the accuracy of properly constructed gas meters may easily be maintained within two per cent when passing gas at a rate of flow common in commercial use. It is, therefore, consistent to stipulate that no gas meter shall

be placed in service which shows in comparison with a standard gas prover an error greater than 2 per cent when passing gas at its standard test rate of flow. It also becomes important in the interest of good service that the accuracy of such meters shall be definitely checked periodically. Each utility should, therefore, be required to check the accuracy of all meters within stated periods and to readjust them if found to be incorrect. Experience has shown that such meters should be checked for accuracy at least every five years.

From time to time consumers feel that their gas meters are inaccurate and that their bills are excessive. Although meters may register in favor of the gas company, yet as a rule when they are in error, their registration is favorable to the consumer. The impression regarding the inaccuracy of a meter is sometimes due to natural but overlooked causes, such as extreme weather conditions, social functions, or other temporary but excessive gas demands.

It is customary, therefore, to make provision for the checking of any meter at the request of any consumer under certain specified conditions. Among other conditions imposed it seems consistent to require the consumer to pay a reasonable fee for such special test if the meter so tested shall be found to be accurate within the limits specified by the regulations, but if the meter is not so found, then the cost of the test should not fall upon the consumer.

Satisfactory service from a gas company implies continuity of service at all times and a reasonable protection from injury to persons or property resulting from defective equipment or carelessness. With this in view, service regulations should require of the utility an inspection of its equipment and facilities with the necessary tests for water and leaks therein. The utility should also be required to supply records and reports of the conditions found upon inspection, of interruptions to service and of any and all accidents related in any way to the company's equipment or facilities, necessary to give the commission all desired information.

Modern business methods accompanied by improved systems of manufacture and distribution have tended toward a reduction in the price of gas, but this reduction has been largely offset by the increased cost of materials, fuel and labor. Higher standards of service are constantly demanded by the public, but any attempt on the part of a utility to increase prices is met with stubborn resistance. Disinterested, impartial, and fair regulation is needed in such cases.

A public service commission is the natural body to adjust such matters and the public should recognize the propriety of an increase in the price of gas just as much as a decrease when the character of the service rendered warrants it or requires it in order to guarantee a reasonable financial return.

It is important that utilities supplying gas in a community be ready to serve the entire community within the natural territory supplied. Discrimination cannot be permitted and districts reasonably populated have a right to expect reasonable consideration. The general responsibility of gas utilities to the public is to furnish and maintain such service, including facilities, as shall in all respects be just, reasonably adequate and practically sufficient for the accommodation of its patrons, employees, and the public.

In conclusion, it should be said that it is today the policy of many gas companies to maintain standards of service and of gas quality that are superior to any demands that would be made by any regulations that would, in general, be just to both utility and consumer. There are, however, companies in every community that have never known any standard and a definite basis for their future procedure is required. A sane application of reasonable regulations will result in high standards of gas quality and service, uniformly fair prices and reasonable financial returns; a more cordial relation between the public and gas companies, and finally, a better understanding of the underlying principles that make for good government and a square deal for all.

SOME NOTES ON THE REGULATION OF GAS SERVICE

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The ideas expressed herein are based on the experience of several years in actual inspection of gas service, and upon two or three fundamental concepts as to the relations between the public and a utility corporation, and as to the object of any rules or requirements to be promulgated.

First. I assume that a utility accepting a franchise allowing it special privileges in the use of public property, without which it would be unable to do business at all, or at least without prohibitive cost, utilizing these privileges without adequate payment for same, must therefore be obligated to give the best possible service and lowest prices consistent with a fair reward for conducting and improving the business.

Second. I assume as operative, the modern conception that the proper public officials have and exercise the right to investigate conditions and cost of service, to fix standards of service, and to determine a reasonable selling price.

Third. I assume that any assumption of regulatory powers is either to safeguard the public health and safety, or to produce the greatest measure of service for the least cost.

With this modern viewpoint, we can divide regulatory requirements into several groups:

1. Fullest measure of service to any and all consumers in the community ready to pay the reasonable price, consistent with the principle that the cost of serving any one consumer or group be not so out of proportion to usual costs as to put an undue burden on the balance of the consumers.

2. A minimum average standard of effectiveness of the service rendered which subdivides into (a) inherent qualities of the gas and (b) condition of delivery to the consumer.

3. Means of measuring service both as to quantity and quality.

4. Price to be paid for the unit of measure of service.

5. Methods of inspection, to determine that requirements are met.

1. Fullest Measure of Service to Consumers

To develop the idea a little more clearly, a citizen of the town or city who happens to reside so remote from other citizens that it would cost hundreds of dollars to lay mains to reach him from the nearest point of reasonable consumption, his probable business representing almost no returns on the investment, cannot in justice expect such special investment. Neither should service to an individual citizen be denied because probable consumption would not pay regular profits on cost of reaching him. As a taxpayer and inhabitant, he contributes in a variety of ways to the successful maintenance of the more closely settled districts, where it is easy to figure profits on each customer which insure the success of the utility. Therefore, an expense of installation, somewhat greater than that which his particular business at that point will pay a usual or average profit upon, is his of right. How to generalize this expense must be left to local calculation. The basis sometimes used of 100 feet appears to me to be too small, probably 200 to 250 feet from nearest previous installation would not be unreasonable.

2. Minimum Average Standard of Effective Service

Inherent useful qualities are those for which the gas is bought, namely, as a source of light and heat. Under present conditions and as far as we can see in the immediate future, it is not economical to distribute in ordinary towns and cities distinctly low grade gas (that is gas with small heating power per unit of volume) because of the great expense of a distribution system of sufficient capacity. Under present conditions, methods of manufacture producing a quality of gas economical to distribute, produce gas of good heating value and of some open flame illuminating value. Since the great bulk of the gas sold, as well as the requirements of the greatest number of consumers is for heating effects, it is sufficient to establish a standard for heating value only. American standard practice calls for 600 B.t.u. gross per cubic foot. European practice utilizes much gas at about 500 B.t.u. with excellent results. This standard as well as all others must be therefore set at such a figure as prevents careless operation, but permits of utilization of serviceable gas which, while possibly of lower B.t.u. than other grades, may be distributed and sold at such

a figure as to give more service at less cost, compared with gas meeting a higher requirement. I consider that a range of requirement calling for a monthly average of either 500, 550 or 600 B.t.u. gross, depending on local conditions, should be sufficient with no requirement as to candle power.

For good service it is necessary that this heating value does not radically or frequently change, as might happen if high B.t.u. natural gas should occasionally be mixed with ordinary coal gas. With only a heating power requirement for the gas, it might be possible to limit the fluctuation to 75 or 100 B.t.u. above the minimum required, or possibly better, a fluctuation of not more than 75 to 100 B.t.u. at any consumer's supply, above the minimum actually delivered at that consumer's supply, based on monthly series of tests. While such a rule has never been discussed to my knowledge, my experience would indicate its feasibility and its desirability in preventing irregularity of service.

Other inherent qualities are associated with the possible presence of preventable impurities in the unburned gas. Impurities in the unburned gas are only of interest when they affect the quality of service by corroding or stopping up fixtures, and producing obnoxious products of combustion. I believe it is a fair requirement that the presence of hydrogen sulphide be kept down to only traces when gas is tested with lead acetate paper, for in removing this impurity other impurities are largely eliminated, or the manufacturer of gas is obliged to use fairly good materials to avoid excessive expense in removing hydrogen sulphide. I would omit all requirements as to the total sulphur, ammonia, tar, or chemical constitution.

In the matter of delivery of gas to the consumer we have to consider conditions of pressure in the supply pipes, and means of measuring the amount of gas consumed.

A requirement of not less than 2 inch water column pressure at the consumer's meter at all times is essential to passable service and safety. It insures continuity of service. I do not believe it wise or necessary to fix an upper limit for pressure but it is essential to fix a limit on the daily and monthly fluctuation in pressure at any consumer's meter or service pipe. Not setting a maximum allowable pressure, I cannot set the limits in fluctuation as now customary, on a percentage of the minimum or maximum actually reached. I incline to a definite range in inches. I find a limit of 2-inch fluctuation

can be readily realized and it is not inconsistent either with good service or reasonable cost. Not over 3-inch fluctuation should be tolerated in any ordinary circumstance. Since all evidence goes to show the possibilities of more efficient utilization by the consumers of gas under high pressure, and higher pressure increases the capacity of an existing distribution system thus reducing capital charges, no hindrance should be placed on the use of higher pressures than now prevail, except that the gas utility should give due and direct notice to all consumers that a definite change in usual pressure is to be made, and then follow up the change with assistance in readjusting appliances to the new condition. The progress of the industry for most consumers should not be held back to enable a few consumers to continue to use antiquated appliances, which is too nearly the attitude of the present service requirements.

3. Means of Measuring Service

The present day commercial gas meter is an instrument of fair but not close accuracy. Without undue expense it can be made and kept so as to register more accurately than normal conditions affecting the volume of gas itself can be maintained. That is, the temperature and barometrical changes in the course of the seasons cause a variation in the volume occupied by a given amount of gas substance of from 10 to 15 per cent under ordinary conditions. Therefore attempts to hold meters to a very close degree of accuracy at considerable expense are unjustifiable. It is a fair requirement that all meters when put in service shall be in good order, that they shall have been carefully adjusted to register between 98 per cent and 101 per cent of correct where tested by usual commercial method, such final adjustment preferably being verified and meter sealed by a sworn tester; that meters should not remain in service longer than five years before being removed, tested for accuracy and inspected; and that consumers suspicious of the accuracy of their meters have the right to have their meters tested by a sworn tester at any time by paying a part of the cost of the test. A meter so removed for test and showing within 3 per cent of correct registration should be considered commercially correct, any excess of 3 per cent to be the subject of allowance on bills for not exceeding preceding six months' service of that meter. Probably the return by the company to the

complaining consumer of his deposit towards expense of test in case his meter is fast beyond 3 per cent is justifiable as a penalty against the company, since the company should expend sufficient money to maintain its meters within 3 per cent, and if it has not done so the individual consumer should not have to pay the large proportion on his particular meter. Any such penalties ought to be charged against the profit account of the utility and not reckoned as operating expense. Consideration of the construction of meters and experience show that in common sizes of gas meters, if properly adjusted when put in service, they cannot get faster than 5 or 6 per cent, while leaks developing may cause any percentage slow up to 100 per cent or non-registration.

4. Price

Under our assumption that price is subject to adjustment on basis of costs of production, etc., it is as much a matter of justice to the average consumer that slow meters be not left in service, as that individuals shall not suffer from excessive charges due to fast meters. The fundamental idea is that the cost of production shall be figured on the same relative amount of material as is delivered to and paid for by the consumer.

5. Methods of Inspection

The extent of the inspection depends on the ratio of cost of the same to the business done. A fundamental principle is that those who benefit by the inspection pay the cost and not the general taxpayer. So a logical situation is that, in figuring the selling price, a certain small allowance be made for cost of supporting public inspection, say 1 mill per thousand cubic feet sold. This money should be turned over to the proper public authority, which shall expend it wholly in inspection work as it sees fit, unhampered in any way by the company. The inspector's equipment, be it meagre or extensive, should be at all times wholly in his control, also tests made by him at any and all times and the service rendered judged by them, subject only to the privilege of the company occasionally to inspect and test the apparatus and observe the methods used, that it may be informed of the conditions under which tests are made. But this privilege in no wise gives the company a right to be notified when and where tests are to be made or to participate in the tests and have

their tests part of the results reported as the inspector's tests. Also, whatever tests are made by the inspector upon which complaint of poor service is based must be sufficient in number and obtained in localities to be typical of average or ordinary service conditions.

The question of the location of the test places is immediately associated with the standard of service adopted, especially in our larger cities. The financial success of high pressure and long distance transmission favors the concentration of manufacture. Even well-made gas commonly decreases in candle power and heating value by transmission. In the old days of relatively short transmission, a distance of a mile from works was adopted as giving an average condition, but such is far from being the case in many large and some small cities. Standard and test conditions which are more or less fictitious as compared with real results to most consumers should be avoided. Therefore, a standard low enough to ensure the more distant consumer a definite value and tests made to meet that requirement should be provided for. For this reason I avoid stating a certain distance or location and prefer a requirement based on "any consumer's meter," possibly qualified to exclude consumers in extremely bad situations where conditions are especially deleterious to the quality of gas used, such situations not approximating to the average conditions of any considerable number of consumers.

To summarize the principles of requirements, rules should be as few as possible and only those which tend to emphasize the important features of the service and can be readily verified. Such rules should really measure the service to all consumers in ordinary situations in the territory served, should be flexible enough to allow the introductions of improvements without delay, should be ample to insure uniformity of service within commercial possibility and reasonable expense, and rigid enough to prevent careless or slipshod methods in management. All regulations should be held subject to change upon demonstration that any suggested change means more service for less cost to the majority of consumers, even if such change disturbs the occasional consumer who wants to avoid purchasing modern efficient apparatus, or altering his routine. Our present regulations on the gas industry seem to consider far too much the desires of the unprogressive members of the community, a consideration which is not given in matters of transportation, water, electricity and other utilities.

Rules relating to service must not be formulated on the basis of

obtaining the best possible in service only, but with a clear idea of the effect on the cost of the whole service. The whole matter, under right conditions, is the simple financial question of how to get the largest measure of satisfactory use from the dollar expended.

Of course, in communities having little or no control over the selling price, but authorized to regulate quality of service, the only way to get the most for their money is to raise the standard as high as possible, so 600 or 625 B.t.u. and even a candle power requirement of 18 to 22 is justifiable, and ought to be enforced if conditions indicate that the utility can get a fair return at its fixed price.

SERVICE REGULATIONS FOR ELECTRICAL UTILITIES

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It is the purpose of this article to present, in condensed form, some of the present day conditions in the field occupied by the electrical utilities, and to outline briefly what principles should govern the formation of the rules of a public service commission pertaining to such utilities. Underlying all rules must be the fundamental principle of fair play—a just return to the public in the form of safe and adequate service on the one hand, and a fair compensation to the utility for the service demanded, on the other.

Many difficulties are to be met with in attempting the solution of this problem. The standards of service must be higher under some conditions than others. Care must be exercised that the utilities are not compelled to supply, and the communities to pay for, a quality of service not commensurate with their needs. The development of small and outlying districts should not be retarded by prohibitive rates. Rules must be so worded that they can be observed and yet not appear to give official sanction to a lowering of the standards of service. It is very difficult in many cases to draw the line between the end sought and the means to that end. The rules should unquestionably set the standards and wherever possible should define satisfactory service, but under no avoidable circumstances should they prescribe methods of management unless absolutely essential to secure the desired results. Every possible freedom should be given to the management not positively inimical to the carrying out of the service requirements.

Full use should be made of the state association where such an organization exists, and of the National Electrical Light Association. Credit should be given to the work of these bodies and wherever possible the standards of service, the methods of procedure, and all requirements should be in accord with those which have received the approval of these associations. The influence which such organizations can and do bring to bear on men engaged in the same line of work are fully as effective as any pressure from without, and should be encouraged to the fullest extent.

Too much importance cannot be attached to the value of the good will and coöperation of the utilities themselves. Much can be done to disarm the rather natural suspicion and gain the confidence of the men representing the utilities by the exercise of tact and by giving due consideration to the opinions of these men who have spent years in the work. Once they are convinced that a commission is disposed to be perfectly fair; that it is as ready to protect a utility from an unreasonable public as to protect a public from an unreasonable utility, one of the greatest barriers to satisfactory regulation is removed. The existence of a commission of the proper character should give stability to the industry and peace of mind to the conscientious management. Few men in responsible positions prefer to give poor service. Competition and the fear of competition are as often the cause of low quality as they are of low prices.

In the effort to follow standard practices, considerable care should be taken that the rules of other commissions are not followed blindly. Every state presents some peculiar conditions that deserve consideration. A prairie state which has no water power, no cheap fuel, which is essentially an agricultural district with few if any large cities, certainly differs from one with large urban centers, which abounds in natural resources, and which possesses many large isolated power users.

Summarizing briefly, then, it seems that the principles that should in some measure govern the formation of the rules are:

1. There should be as few rules as possible.
2. They should deal only with such things as are pertinent to the rendering of good service.
3. They should be of such character that they can be observed by every well intentioned company.
4. They should be worded in the simplest and most direct language, even if this robs them entirely of their legal aspect.
5. They should disturb established business routine as little as possible, and should require just as little additional work and expense as will insure the successful operation of the rule.
6. They should, in so far as possible, conform to the recommendations of the state and national societies working to the same end, and should encourage coöperation from these bodies.
7. They should carefully distinguish between the object of the rule and the means necessary to secure that object, and should religiously avoid infringing on the field of the manager.
8. They should encourage rather than discourage the development of the industry.

In the following it is assumed that a commission is concerned only with those things that go to make up the quality of the service rendered to the public. No effort is here made to formulate definite rules, but rather to discuss briefly the general nature and limitations of such rules as are intended to control directly the elements of service. These elements are:

a. Continuity. This is without question the most important. No human agency, much less a mere rule, can insure it. In a system covering miles of territory and with a dozen different links in the chain, many things can happen that will interrupt the service on all or a portion of the system, and which cannot by any chance be foreseen. There are, however, two precautionary measures which should be adopted and rigidly enforced, and which will greatly reduce the likelihood of interruptions. One is to require the utilities to make thorough, systematic, and periodic inspections of all the various links where prevention is possible. The second is to require a detailed record of all such interruptions. The first, if properly done, will greatly reduce the preventable accidents, while the second will furnish the moral stimulus conducive to sustained and whole-hearted effort for the elimination of such occurrences.

b. Constancy of Voltage. In almost all classes of service this will rank second in importance. This can best be discussed under the two sub-heads, lighting and power. In lighting, particularly, the question of permissible variation in voltage is complicated by the fact that not only the magnitude of the variation, but also the duration and the frequency with which variations occur, are of importance. The voltage on a house lighting circuit may drop, momentarily, 10 per cent or more below the normal, and, if this happens but rarely, cause nothing more serious than curiosity; or the voltage may vary 4 or 5 per cent above or below normal, and if the change take place gradually, be scarcely noticed. If, however, a variation of so little as 1 per cent occur at the critical frequency, say once every second, it may become a very serious matter.

For power circuits the same change in voltage is not so serious, though wide variations in the voltage of alternating current circuits cause considerable change in the speed of induction motors, and in the heating of all induction apparatus. Direct current power circuits should meet about the same requirements as alternating current circuits, except possibly the rare instances where power is sold from

direct current trolley wires, in which case they should be exempt from specified voltage regulations.

There are two ways of covering the matter. One is by a rule setting definite limits beyond which no utility should permit its fluctuations in voltage to extend. This has the disadvantage that it is difficult to set limits wide enough so that they can in all cases be met, and yet not appear to give official sanction to a quality of service poorer than the public is used to and has a right to demand. Where the rule takes this form the permissible limit should be set at about 5 per cent above or below the normal voltage, and such wide variations should be permitted to occur but seldom and then only gradually. Even with this limited range, the lamps, if rated at the normal voltage of the circuit, will be subject to changes in life and candle power of approximately 20 per cent above and below normal life and candle power. The permissible variation on power circuits could justly be double that named above. The other form of the rule would simply indicate what variations would ordinarily be allowed, or considered reasonable service, and leave all questions pertaining to such cases as actually do constitute poor service for adjustment in the individual cases. This would permit the setting of higher standards, say a maximum permissible variation of 3 per cent above and below normal for lighting circuits and double this for power circuits. In any case each utility should adopt standard service voltages for the different centers, or districts, or zones, and should provide every reasonable facility for maintaining the voltage practically constant at all times during which service is supplied.

c. Variations in Frequency. Such variations in frequency as are likely to occur in practice are not objectionable on lighting circuits. They might become so on power circuits due to the change in the speed of alternating current motors and the increased heating in induction apparatus on frequencies lower than normal. A 5 per cent variation either way should be sufficient.

d. Meters. At no other point does the utility meet so intimately such a large portion of its public as at the meters. The meter is the ever-present agent of the company, and upon its integrity depends to a large extent the reputation of its owner. No management which values the good will of its patrons can afford to have its meters fast, neither can it, in justice to its stockholders, permit meters to become slow. The rules pertaining to meters should contemplate and provide for:

1. Periodic tests of service meters.
2. Complaint or request tests.
3. Limitations of permissible inaccuracy.
4. Specified procedure for determining the accuracy.
5. A penalty on the utility in the shape of a refund to the consumer for meters fast beyond the allowable limits.
6. Tests with and without such accessories as instrument transformers.
7. Tests at appropriate power factors, and
8. The possession by each utility of adequate and satisfactory testing facilities.

1. *Periodic Tests.* All service watt-hour meters should be tested periodically, preferably by the utility in their place of installation, with approved equipment, and without charge to the consumer. The length of the period between such tests may vary from three years for the modern low capacity induction type of meter to one year for the larger self-contained polyphase meters and the commutator and mercury types.

2. *Complaint Tests.* Every consumer should have the privilege of having his meter tested at any time that he is in doubt as to its accuracy. To prevent an aggrieved citizen from taking an unfair advantage of the utility, the consumer should be required to deposit a sum sufficient to cover the cost of making the test and which he would forfeit to the utility in case the meter was found to be correct within the established limits. In case the meter be found to be fast or slow beyond the established limits, the utility should bear the burden of making the test and the deposit returned to the consumer. The justice of this is evident when it is remembered that it is the duty of the utility to maintain its meters approximately correct.

3. *Limitations of Permissible Inaccuracy.* These limits are set in practice by the inherent qualities of the meters and by the economic balance between the time required to make fine adjustments and the benefits gained thereby. Meters which register from 98 to 102 per cent of the energy passing through them are usually considered correct, and no penalties should be imposed until the accuracy falls without the limits represented by 96 per cent and 104 per cent.

4. *Method of Determining the Accuracy.* The methods of measuring the accuracy of a meter vary, due to the difference in the definition of the expression "accuracy of the meter." The actual error of a meter depends upon the load at which it is measured, hence the necessity for the definition of the term. It is usually de-

fined in terms of the accuracy at two or more different load points, e.g., it might be the average of the accuracy at "light load" and the accuracy at "full load" or "heavy load," these terms being defined; or it might be considered as the average of the accuracy at "light," "normal," and "heavy" loads, giving more weight to the accuracy at "normal" load. This necessitates the definition of still another term—normal load. The normal load is based upon the class of service in question and may, of course, be different from the actual normal load for a particular meter. In some cases the half load point is used for the normal load point. All are approximations and since the calibration curves for the modern meter are fairly straight, it would seem that the simplest is the best for all practical purposes.

5. *Penalty for Fast Meters.* There seems to be no question about the justness of making some reparation to the consumer in cases where the meter has been found to be unreasonably fast. The argument here hinges entirely on how far back the refund should go. Since experience shows that for every meter that runs fast in excess of the limit, there are about six that run slow in excess of the same limit, it would seem that the utility should not be required to make refund beyond the current bill.

6. *Meters used in conjunction with instrument transformers* are usually of small capacity, and are much more easily tested as self-contained units. This should be permitted on condition that the ratios of the transformers are known. The testing of instrument transformers is not an easy matter and, wherever possible, the ratio of the manufacturer's test should be accepted. If no tests have ever been made on the transformer, it should be compared with another and calibrated transformer at least once to establish an acceptable ratio.

7. *Power Factor Tests.* Most modern alternating current meters are provided with an adjustable compensation for low power factors, or are adjusted for correct registration in the factory, on such low power factors. If this has not been done the meters should be tested in service for low power factor accuracy in all cases where the load is inductive.

8. *Facilities for Testing.* Whether the testing of service meters be done by the commission or by the utilities, the integrity of the testing apparatus should be beyond question. This duty of supervising the character of the testing facilities belongs to the state.

As to the exact nature of these facilities, much depends upon the magnitude of the scale upon which the testing must be done. For service meters the rotating standards are usually best adapted, while for check meters the indicating types may be most suitable.

The last and not the least important of all the rules which are necessary is the one pertaining to the records which should be kept. This constitutes a valuable part of the work, and, while it can easily be made burdensome, yet if indulged in, in moderation and in reason, it furnishes a trustworthy guide to the activities of the utility and in many instances constitutes the only witness for the defense in cases on complaint before the commission.

TEN RULES FOR SERVICE

PRINCIPLES APPLIED BY THE RAILROAD COMMISSION OF CALIFORNIA TO THE REGULATION OF PUBLIC UTILITY SERVICE

BY P. A. SINSHEIMER,

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Only in recent years has the importance of service been recognized in public utility regulation. Regulating bodies addressed themselves primarily to rates. This disclosed inevitably the inter-relationship between rates and service. As this inter-dependence has come to be thoroughly understood, service issues have become predominant.

It is not my purpose to enumerate merely those regulations which have been adopted by the California commission, but rather to outline the broader principles which have guided it. Nor shall I assume to present the views of the California commissioners, but rather to interpret their decisions in the light of my own understanding.

A presentation of service principles must be predicated upon a proper understanding of the necessity for such service regulation. I shall, therefore, begin with a discussion of the necessity for service regulation; pass to the consideration of service principles; and conclude with an analysis of their practical application.

The necessity for the regulation of utility service is inherent in the very nature of these utilities. They are privately owned and operated for profit. Service is incidental and given only in so far as conducive to profit. Unbridled, a public utility gives a minimum of service for a maximum of rate. Individual protest proved futile. Collective opposition followed and then ensued public regulation.

It is upon this basic idea of service that public ownership of utilities finds its logical argument. A utility, publicly owned, is conceived for public service. It is not born solely for profit.

Considerations of service are elements of growth. Public utility enterprises differ from other enterprises primarily in the degree of the public interest attached thereto. We have been accustomed to think of public utilities as separable from other industries by reason

of their use of public property. We are now coming to regard them as separable from other industries by reason of the public's use *in* their properties. It is upon this premise that utility service assumes primal importance in utility regulation. We admit the public's use in a utility property, and we are called upon inevitably to determine the extent of that use.

We need go back barely a page in our history to discover that arbitrary usage and high-handed practices were substituted for efficient public utility service. To recall these conditions or to view them where they still exist is merely to remember that kings have been tyrants and would again be tyrants. Stranger, though, and difficult of understanding, were they not a certain outcrop of economic formations, are the many headstrong and stupid regulations which were enforced by the public utility against the public, but even more against itself.

The right of the public to adequate service has become axiomatic. It must be given by the utility either voluntarily or under compulsion; and if it can not be given under compulsion, the utility and not the public must give way. The public has always been a partner in public utility enterprises. It is no longer a silent partner. It may not have the majority of the stock, but it has the majority interest.

We therefore offer as Rule No. 1:

Service must be measured primarily by the needs of the public and only secondarily by the ability of a given utility.

Much of the earlier effort to regulate utilities was in retaliation. This took the form of revenue reductions. It was the most obvious point of attack and there was undoubtedly a certain sense of satisfaction that it hurt the most. But it followed as a natural sequence that the utility could shrink its service to meet the rate. Thus came the full understanding that rates and service are so closely entwined as to be inseparable.

Not so widely understood, but equally fundamental, is the fact that service is just as closely interwoven with securities. We may complete the trinity, for securities and rates are joined economically beyond the power of man to separate. We may assume at the outset, therefore, that the regulation of public utility service can not be disassociated from the regulation of public utility rates and finances.

The principles of service established by a regulating body may be as broad and no broader than the law from which that regulating body takes its authority. The public utilities act of California confers upon its railroad commission plenary powers of service regulation. The service jurisdiction is delegated directly through a grant of service authority and indirectly through grants of related power. These indirect powers come from the commission's jurisdiction over

1. Franchises
2. Consolidations
3. Rates
4. Finances

The principles of service as established by the California commission have been founded largely upon this related jurisdiction.

1. Franchise Power

The public utilities act of California, in common with similar acts in most of the states of the union, provides that no utility may enter a new field without the commission's certificate of public convenience and necessity. This certificate is fundamentally a franchise. The California commission, like many other commissions, has not encouraged plant duplication. In many states this policy has been carried to the extent of apportioning permanently a fixed territory to a given utility. The California commission has never adopted this policy. It has protected utilities against competition in their given fields, but has given this protection only in so far and for such time as the utility rendered proper service at proper rates. The commission has held that the public, as a matter of right, was entitled to the best service at the lowest reasonable rate. It has held further that, if one utility occupied a field and another utility sought to enter, the first utility could be protected in its monopoly only if its service had been as adequate and its rate as reasonable as the new utility could give.

In one of its most important cases the commission found that a gas and electric company had not given adequate service and that its rates had been unduly high, and therefore, when a second utility sought to enter, the commission granted the necessary certificate. In another case which assumed state-wide importance, the commission found that the gas and electric company serving the city of

Stockton was rendering as complete service as the new applicant could offer and that the rates proposed in competition were not sufficiently different from those in force to warrant the substitution of the dual for the single agency.

In the case of the Pacific Gas and Electric Company against the Great Western Power Company the commission expressed its idea in these words:

We announce the rule that only until the time of threatened competition shall the existing utility be allowed to put itself in such a position with reference to its patrons, that this commission may find that such patrons are adequately served at reasonable rates. By announcing this principle, we hope we shall hold out to the existing utilities an incentive which will induce them voluntarily, without burdening this commission, or other governmental authorities, to accord to the communities of this state those rates and that service to which they are in justice entitled, and to the new utilities we shall likewise hold out the incentive that on the discovery by them of territory which is not accorded reasonable service and just rates, they may have the privilege of entering therein if they are willing to accord fair treatment to such territory.

This principle was reiterated in the case of the application of the Oro Electric Corporation for a certificate of public convenience and necessity to serve the city of Stockton.

In this way there has developed in California a sort of potential competition which of itself has aided greatly in the regulation of monopoly utilities. It has given, in effect, competition without duplication. It has brought about all that competition could bring about in the way of service improvement, and it has prevented those ills in the form of duplication of investment which flow from unregulated competition. In practice, the commission has found that this policy has served to bring about voluntary service improvements and voluntary rate reductions. It has been an automatic regulator, so to speak.

The enunciation of this principle has been followed by a marked decrease in minor complaints against utilities. It has, for instance, brought about the creation of special service, complaint and adjustment departments in most of the utilities. At the same time the entire level of rates, particularly in the electrical field, has been voluntarily reduced throughout three-fourths of California.

It has been found necessary in some instances where a local utility could not give the service, to allow the second utility to come

in, and where this has been done it has always been justified by the vast improvement in service and the reduction in rates.

The only danger to the public interest in this general policy lies in a possible apportionment of state territory by agreement among the utilities themselves. The commission has already, in a recent decision, issued a warning against such a compact, and holds as a weapon of prevention its positive powers of service, rate and financial regulation.

We therefore offer as Rule No. 2:

Adequate service is the price a utility must pay to hold a field free from competition.

2. Consolidations

The California commission has authority to authorize the consolidation of utility properties. When matters of this kind come before it, the commission's inquiry goes to two matters: service and rates. If the consolidation will substantially improve the service and reduce the rates, the commission holds it to be in the public interest and therefore gives its approval. It does not encourage competition as such, but looks to the public interest to be subserved. If the consolidation is intended either to restrict service or to increase the rates, it is vetoed.

In actual practice, these consolidations have been in the public interest. The two schools of economists now wrestling with the nation's problems are divided upon this issue. The California commission, however, is repeatedly on record in favor of utility mergers in the public interest. Within the past year these two schools of economic thought have been brought into sharp contrast on California issues. The present national administration, through its attorney-general, after severing the Southern Pacific Railroad control from the Union Pacific directed that the Southern Pacific should divest itself of the Central Pacific. The purpose, as expressed, was to destroy monopoly and restore competition. It so happened that the California commission had jurisdiction over related features of this general plan. While the commission recognized the authority of the federal government so to proceed as it saw fit and as it interpreted the law, it expressed its belief that the railroad service would be impaired by the severance.

Within recent date the national administration, through the

attorney-general, has brought about the so-called dissolution of the American Telephone and Telegraph Company. The fundamental idea is presumably to restore competition. The California commission has repeatedly authorized the consolidation of telephone companies in California, always looking to betterment of service and decrease in charges upon the public. The attorney-general announces with some pride that he has persuaded the American Telephone and Telegraph Company to allow interchange with independent companies. The California commission has long since adopted as a definite policy compulsory interchange. This form of interchange means the substitution of a joint agency for a dual and competitive agency.

The California commission has gone a step further in its willingness to recognize the advantages of a single agency. Competition between telephone companies, for instance, carried to its ultimate conclusion, would entail a condition wherein a given city were served by two telephone companies with equal investment and with parallel and equal facilities; every householder possessed of two telephones; and the two agencies each performing one-half of the required service, although either could, with half the investment of the two, handle it all. Either the patrons must pay a return upon twice the required investment, or both of the telephone companies must go into bankruptcy, and bankruptcy, of course, means disruption of service.

We offer, therefore, as Rule No. 3:

The highest type of service may best be obtained through a single agency.

3. Rates

It is an aphorism that one gets what he pays for. So it is with public utility service. Service cannot be measured of and by itself. It bears a fixed relationship to rate. If a regulating body fixes a rate for utility service and then neglects to maintain a standard of service, it might as well never have fixed the rate. The public pays in rates a fixed sum for which it should receive a fixed return in service. The natural tendency of man being to profit himself, utilities, unregulated, would give a minimum of service for the rate. Eggs are not more infinite in their variety than is service; as with eggs one gets what he pays for, so with service.

This principle has been uniformly recognized by the California commission. Not only does the commission fix rates in relation to the service but when it finds a utility alone in a given field and unable to render service, it readjusts the rate to correspond to the deficient service. In a water case in southern California the commission, finding the flumes of the company inadequate and deficient and the service barely tolerable, ordered that the company's rates be reduced until such time as the service was made adequate.

President Ripley of the Santa Fé Railway, in contrast with some of his railway colleagues, has taken the position that an increase in rates is desirable for the betterment of service. In his testimony before the railroad commission he said: "It is almost true that we have only imitations for railroads. We haven't got what we ought to have. We haven't got properties that are going to be equal to the strain on them if we continue to grow, in a few years more." He had reference to the necessity of making those improvements which went directly to the benefit of service.

Following its investigation of a wreck upon the electric line of the San Francisco, Napa Valley and Calistoga Railway, the California commission indicated the necessity of capital expenditures primarily in the interest of safety. Recognizing the inseparable relation to rates, the commission said:

Most of these interurban lines should be protected by block signals, and our engineer has been directed to have a thorough investigation made of all these roads with a view to requiring the installation of block signals at once in the more urgent cases and gradually in all cases. If the installation of the necessary safety devices requires an increase of the rates of these utilities, such increase will be allowed. The traveling public has a right to be protected, and should be willing to pay for such protection. Up to the present time, however, in this state, it can not be said by any public utility that its failure to install proper safety devices is due to inadequate rates. No suggestion has come from any one of them that this commission permit an increase in rates for this purpose. The commission stands ready at all times, however, to permit rates high enough to pay a reasonable return upon the fair value of the property devoted to the public service, good wages to experienced men, and installation of such appliances as may be necessary to promote the safety of the traveling public and employees of the utilities under its jurisdiction.

We offer, therefore, as Rule No. 4:

Utility rates should be adjusted to fit the quality of service rendered.

4. *Finances*

There are some thinking men who still doubt the wisdom of public regulation of utility securities. The regulation of stocks and bonds, however, has become one of the most important functions of the California commission. As this work has broadened the commission has been impressed with its necessity. It is difficult to understand how doubt can still exist on this question when recent revelations have shown the ugly manipulations in the unregulated issues of New Haven, Rock Island and "Frisco" securities.

An over-capitalized utility can pay return upon its securities only through exorbitant rates or inadequate service. The regulating body may prevent the exorbitant rate but it must be at the sacrifice of service. In most of our American cities, the 5-cent street railway fare has been accepted as fixed. Obviously, earnings can be paid on over-capitalization only through the impairment of service. It is safe to say that a majority of the street railway enterprises in the large American cities have been so over-capitalized that their whole endeavor has been to make good this capitalization through neglect of service. This has in some instances given our large American cities merely the shadow instead of the substance of service. Routing is restricted to the congested districts; the outlying sections are unserved; an insufficient number of cars are operated; the road-bed is not maintained; a public clamor ensues; there is much talk but no service.

In its regulation of security issues the California commission has endeavored to authorize only those securities upon which return might reasonably be paid under a proper operating rate wherein adequate service is maintained. In all security regulation the California commission insists that the financial structure of a utility shall be such as to limit charges so as to leave a net earning of sufficient size to insure proper continuance of service. Where necessary, the commission has directed utilities to reorganize in the interest of service. It has not waited for bankruptcy but required the re-casting of the financial frame so as to admit of the service to which it holds the public entitled.

We offer, therefore, as Rule No. 5:

Security issues should be so regulated as to render the utility financially able to meet all reasonable demands for service improvements.

5. Jurisdiction over Service and Extensions

The direct grant of service authority in the California law enables the commission to prescribe first, the extent of service; and second, the character of service. A somewhat general provision of the act gives the commission whatever latitude may be required in the exercise of its jurisdiction to regulate public utilities. This confers jurisdiction over any matters of service which might have been omitted from the act or which may hereafter be necessary. We may assume, however, that the entire field may be covered by regulating the extent and character of service.

The California commission has authority in prescribing the extent of utility service to require utilities to extend their facilities, to restrict their facilities, or to unite their facilities.

In the broad exercise of its authority to require extension service, the commission has held that the utilities must make such extensions as are reasonably required for the public convenience in their respective fields. This authority has been construed to require utilities both to extend their operations into new fields and to widen their operations in fields already served.

The San José Railroad, for instance, was directed to construct a standard gauge line of railway to connect with its previously constructed line to Alum Rock Park. A water company in southern California was directed to take over and operate a water system in a territory which it had not previously undertaken to serve. The Pacific Telephone and Telegraph Company was directed to give service in the town of Saratoga, in Santa Clara County, although at the time it had not undertaken to serve the territory.

The commission has required of all utilities that they make reasonable extensions. Utilities have been obliged to pay the cost of ordinary service connections and meters, and to lay such mains as may be necessary for the maintenance of a proper supply. The commission has provided that unusual extensions, the cost of which would throw an additional burden upon existing patrons, may be provided by a division of the cost thereof between the utility and the patron or patrons to be served by the extraordinary extension.

The California commission has had a special problem in the regulation of irrigation service. The season of 1913 was rated as a dry year. Irrigation service fell off and complaints poured in upon the

commission. As a solution, the commission directed the irrigation utilities to make the expenditures necessary to enlarge their water supplies, and in return directed that the patrons should pay additional rates as a return upon the added investment of the water corporations. The effect was to give a greatly improved irrigation service at a very small increase in rate. Only in rare instances was there objection to this policy, either from the water utility or its patrons.

We therefore offer as Rule No. 6:

Every utility must make such extensions or provide such additions as may be reasonably required so far as its rates will enable it to earn a fair return upon its property.

The California commission has power to restrict the extent of service of water utilities. This power was given to correct the tendency of irrigation companies to undertake to serve a greater acreage than their supply of water would permit. Lands were marketed in the belief that they would have an inherent right in the water, but in practice it developed that large acreages were left unserved or only partly served because the amount of water available was insufficient. Under the authority thus conferred, the commission has restricted the territory of water companies to the limits which they can adequately serve. This policy has been adopted in irrigation and domestic use.

The same primary idea prevails in the regulations adopted by the commission for the distribution of natural gas which restrict sale for domestic use and admit of sale for industrial purposes only after the domestic demand has been adequately met.

We therefore offer as Rule No. 7:

A utility with limited product must be restricted in its operation to the area in which it can render adequate service.

The joint use of facilities has been adopted by the California commission as a means of bringing about a desired service by united agency where the single agency was not equipped for its performance. The commission has required that through routes and joint rates be established between steam and electric lines. This has augmented to a remarkable degree the transportation service of rural communities. Carrying forward the same policy, independent telephone companies have been required to make physical connection when such connection would serve the public interest. In the so-called Union

Pacific-Southern Pacific merger case, an arrangement was sought by the railroads whereby the Southern Pacific and Union Pacific should interchange and each use the other's facilities. The commission found no objection to this in and of itself, but insisted that this arrangement could be legalized only if both parties extended the same right to any other carrier which might desire it. The commission's purpose was not to restrict, but to enlarge the policy of joint usage and interchange. The advantages of such a service requirement are manifest. The entire principle is based upon public convenience.

We offer, therefore, as Rule No. 8:

Every utility must extend the use of its facilities to any other utility to perform a service which the first utility is, itself, not able to perform.

When we pass from a consideration of the extent of service to the character of service, we enter upon a wide realm. It is not my purpose to detail the manifold rules and regulations upon which the character of service is based, but to indicate merely the broader foundations upon which it is grounded.

The regulation of the character of service must be in the interest of (1) public convenience and (2) public safety. The California commission has prescribed a series of rules providing for proper train schedules, train stops, for the care of railway facilities, and for the convenience of passengers while using these facilities. Blanket orders have been issued prohibiting any curtailment of facilities without the express authority of the commission. Such new service requirements as appear to be necessary from time to time are prescribed for each branch of utility enterprise. Regulations have been put into effect in different communities for gas service and telephone service prescribing in minute detail the quality, pressure, etc., for gas, and the switching regulations and time allowances for telephone services.

In addition, the commission has undertaken broader inquiries into utility service where the prime consideration was the convenience of the public. Such an issue was involved in the commission's inquiry into the proposed contracts between the Southern Pacific and the Union Pacific railroads. Service to the shipping and traveling public was the prime motive of the commission's research. In another instance the commission called into question all of the prac-

tices of the Pullman Company, delving into the system in its most minute ramifications.

A broad inquiry that has had for its purpose both public convenience and public safety has been the extensive investigation into inductive interference between high tension power lines and telephone lines. Complaint was made to the commission by telephone companies that the construction of high tension power lines in close proximity to their wires produced inductive interference and rendered the telephone lines non-commercial. Danger to human life was put forth as a secondary complaint. Neither the telephone corporations nor the power corporations could assert a prior right in a public highway and the very nature of the two enterprises made it necessary that their lines should come into close proximity at certain points.

The issue was such a large one that the California commission appointed a joint committee composed of representatives of the commission and representatives of both the power companies and the telephone companies of the state. This committee was instructed to conduct experiments and scientific research and formulate a plan by which this inductive interference could be eliminated. This committee has conducted field experiments over a period of a year and has already made such headway as to encourage the belief that some effective solution may be evolved.

We offer as Rule No. 9:

Utility service regulations must combine a maximum of convenience to the public with a maximum degree of protection to the utility.

I have chosen to emphasize the importance of safety in service regulation by construing it as a finality. In any consideration of the subject the principle that recognizes the priority of safety finds no dissenters and the problem reduces itself merely to the means of bringing about the desired result. Block systems, automatic crossing signals, interlocking devices, flagmen, steel equipment, all have been tried and all have brought beneficent results but we still find that wrecks occur. It is being impressed upon the minds of the regulating authorities that, while they have placed heavy reliance upon the efficacy of mechanical protection, they have overlooked the human element. This apparently is the conclusion which the Interstate Commerce Commission has now reached. We quote from

the last annual report of the Interstate Commerce Commission for the year ending December, 1913:

The commission again is compelled to note the exceedingly large proportion of train accidents due to dereliction of duty on the part of employees. Fifty-six of the accidents investigated during the year, or nearly 74 per cent of the whole number, were directly caused by mistakes of employees. These mistakes were of the same nature as those noted by the Commission in its last annual report, namely, disregard of fixed signals; improper flagging; failure to obey train orders; improper checking of train register; misunderstanding of orders; occupying main track of superior train; block operator allowed train to enter occupied block; dispatcher gave lap order or used improper form of order; operator made mistake in copying order; switch left open in face of approaching train; excessive speed; failure to identify train that was met.

These errors are exactly the ones which figure in the causes of train accidents year after year. Their persistence, leading always to the same harrowing results, points inevitably to the truth of one or the other of the following alternatives: Either a great majority of these deplorable railroad disasters are unavoidable or there exists a widespread lack of intelligent and well directed effort to minimize the mistakes of employees in the operation of trains. It is not believed that all those accidents which are caused by the mistakes of employees are unavoidable. It is quite true that man is prone to error, and as long as absolute reliance is placed upon the human element in the operation of trains, accidents are bound to occur, but until it can be shown that all reasonable and proper measures have been taken for its prevention no accident can be classed as unavoidable.

All of the mistakes noted above are violations of simple rules which should have been easily understood by men of sufficient intelligence to be entrusted with the operation of trains. The evidence is that in the main the rules are understood, but they are habitually violated by employees who are charged with responsibility for the safe movement of trains. The evidence also is that in many cases operating officers are cognizant of this habitual disregard of rules and no proper steps are taken to correct the evil. Many operating officers seem to proceed upon the theory that their responsibility ends with the promulgation of rules, apparently overlooking the fact that no matter how inherently good a rule may be, it is of no force unless it is obeyed. On very many railroads there is little or no system of inspection or supervision of the work of train service employees so far as pertains to those matters which vitally affect safety. Employees are not examined on the operating rules except at the time of their promotion, and only the most perfunctory efforts are made to determine their fitness to perform duties assigned to them from time to time.

In thus expressing itself the Interstate Commerce Commission has affirmed a belief expressed by the California commission and duly acted upon. The California commission took the view that

many of these wrecks were due plainly to the human element and addressed itself to the problem of minimizing as far as might be the human liability to err. The commission did not assume to place responsibility upon the employees but put it squarely on the shoulders of the operating officials of the carriers.

The California commission, in passing upon the wreck on the San Francisco, Napa Valley and Calistoga Railroad, in which 13 persons were killed and 28 injured, said:

It is manifestly impossible for this commission to require employees of utilities to comply in all respects with the rules adopted by such utilities unless it be given a force sufficiently large to operate the utilities of the state. Of course this can not be done and it should not be expected, but the commission and other public authorities can and will require the officials of these companies to see that their rules are complied with or assume the legal consequences of such failure. Regard for the public welfare, if not for the property under their control, should induce managers and owners of public utilities to see that they are safely operated. While we shall to the extent of our ability check the violations of the rules, still we must look to the officials of the companies to see that the rules are complied with. One of the main causes of wrecks from violations of rules, in our opinion, is the failure of officials of railroads to see that violations of rules are punished regardless of the result of such violations. The practice too common is merely to discharge or punish that employee whose violation of the rules has resulted in disaster. Violation of a rule which results in no disaster should and must be as severely dealt with as the violation which is not successful and which results in loss of property or life. We desire to impress this fact upon the public utility officials and owners and to insist that it is their duty to see that the proper rules are complied with in every respect and they should not feel that they have acquitted themselves properly when they discharge or punish the employee when disaster has been the consequence of his failure to comply with the rules. We can reach no other conclusion than that many officials of railroads at present connive at and in effect sanction departure from or violation of important rules of safety in those instances when no damage results therefrom. This practice must be discontinued.

In its findings upon the wreck of the Pacific Electric Railway Company when 16 persons were killed, the commission again found that the operating officials of the road were responsible through failure properly to instruct and train their employees. In this case the commission passed upon the roadbed, rails, equipment and general operating conditions of the railroad. As a result of its inquiry, it directed the company to prepare plans to block signal its system, to safeguard its dangerous crossings by automatic signals or grade

eliminations and to submit plans for the proper drilling of its trainmen. These matters are now under way. It is of particular interest, however, that the company has, following the suggestion of the commission, opened a school of instruction for its men. In this school are taught all of the operating rules and regulations until they are thoroughly mastered. Not the least interesting feature of this school is the use of moving pictures for purposes of illustration.

Previous to both of these accidents, however, the California commission had organized a service staff consisting of two men. One had formerly been the general superintendent of a large railroad, and the other had been the chief dispatcher of one of the large transcontinental railways. These two men were sent throughout the state and investigated the operating rules of every carrier, paying particular heed to the method of their enforcement.

It was one of those rare coincidences that the commission had, on the day of the accident on the San Francisco, Calistoga and Napa Valley Railroad, sent instructions to that company to revise its operating rules and to eliminate therefrom the very practices which resulted in the wreck. This line of safety work has been carried into other utility fields and is being extended constantly by the California commission.

We offer, therefore, finally but foremost, Rule No. 10:

The first consideration in utility service must be safety.

BOOK DEPARTMENT

NOTES

ABBOT, E. V. *Justice and the Modern Law*. Pp. xiv, 299. Price \$1.60. Boston: Houghton, Mifflin Company, 1913.

ACLAND, A. H. and RANSOME, C. *A Handbook in Outline of the Political History of England to 1913*. Pp. xii, 391. Price, \$2.00. New York: Longmans, Green and Company, 1913.

This new edition of the well-known outline brings the chronology down to 1913. Aside from the few pages added for this purpose there appear to have been no changes. Erroneous statements made in earlier editions are again repeated (e.g., pp. 7, 29, 35, 73), and the text does not appear to have been revised in the light of subsequent historical research since the original edition of 1881.

ANDERSON, J. D. *The Peoples of India*. Pp. x, 118. Price, 40 cents. New York: G. P. Putnam's Sons, 1913.

A hundred small octavo pages cannot of course give more than a bird's eye view of the peoples of India. Mr. Anderson does not attempt more. The material is, as the author repeatedly points out, very largely drawn from standard works of reference. The discussion is divided into chapters on race and caste, languages and religions. The style is excellent and the proportion well maintained. A bibliography gives a select list of the best authorities and there are two excellent maps showing the density of population and the location of the chief language groups.

BABSON, ROGER W. and MAY, RALPH. *Commercial Paper*. Pp. 253. Price, \$2.00. Wellesley Hills, Mass.: Babson's Statistical Organization.

Although as Mr. Babson states, "this book is primarily written for the officers of our nation's twenty thousand banks," it contains material which will prove of importance to all engaged in commercial pursuits. Chapters on the form of commercial paper and the rediscounting of commercial paper are of special interest at the present time since the new currency act has again impressed upon the banking community and public alike, the necessity of sound commercial paper and an open discount market.

BELLOM, MAURICE. *La Prévoyance Légale en Faveur des Employés*. Pp. 105. Paris: G. et M. Ravisce, Editeurs, 1913.

This pamphlet deals with one of the more recent developments of social insurance—that which furnishes protection to the salaried worker. Previous movements have dealt with the manual worker, but Austria and Germany have

now undertaken to protect from sickness and old age this other group. M. Bellom discusses these systems under the following headings:—the beneficiaries, returns and premiums, the payment of premiums, the machinery of administration, the payments of insurance. He analyzes and compares the laws in two countries with special reference to the difficulties encountered by the older of the two, the Austrian. A series of careful recommendations dealing with all phases of the law completes the study.

BELLOM, MAURICE. *La Statistique Internationale de L'Assurance Contre L'Invalidite*. Pp. 35. Vienna: Imprimerie Frederic Jasper, 1913.

This tract embodies a report to the International Institute of Statistics and presents a discussion of the subject of international statistics of invalidity. Formulas for deducing costs are given followed by an analysis of tables and statistics now in existence showing probabilities of invalidity, of mortality among invalids, of invalids again becoming well, of the well remaining well and of mortality among healthy risks. These data are based largely on experience in Germany and Austria. The content of a general body of statistics is carefully outlined and is followed by an enumeration of studies thus far made of insurance against invalidity. Two reports by actuaries, M. Maingie and M. Hamza and two by the governments of Austria and Sweden respectively complete the list. In conclusion M. Bellom finds several difficulties facing a development of international statistics of invalidity: (1) the difficulty of defining invalidity; (2) an insufficiency in the amount of data on which tables are based; and (3) the impossibility of obtaining correct knowledge regarding the cessation of invalidity or the death of invalids. This report embodies an invaluable addition to the subject of invalidity statistics.

BOND, FREDERIC. *Stock Prices: Factors in their Rise and Fall*. Pp. 124. Price, \$1.00. New York: Moody's Magazine Book Department.

Considering the magnitude of the subject treated, Mr. Bond has succeeded remarkably well in presenting in a comparatively few pages the sum and substance of what can knowingly be written on the movement of stock prices. He delves into theory only so far as the past has proved the theory to be correct, and while he advances no startling new truths, he treats the known factors of stock prices in a clear and readable way. The chapter on distribution of profit and loss in the market is most convincing and all statements are well substantiated by actual illustrations, which drive home the points made.

BOOTH, CHARLES. *Industrial Unrest and Trade Union Policy*. Pp. 32. Price, 10 cents. New York: The Macmillan Company, 1913.

Claiming that trade unions have done little to increase the production of wealth and less to secure more equitable distribution and almost nothing to increase the efficiency of labor, Mr. Booth feels that for the most part they have been economically useless. He lays down a broad program for better understanding between employers and employees on the basis of increased efficiency in the individual worker.

BROWN, W. J. *The Underlying Principles of Modern Legislation.* Pp. xx, 331. Price, 10/6. London: John Murray.

BURTON, THEODORE E. *Corporations and the State.* Pp. xvi, 249. Price, \$1.25. New York: D. Appleton and Company.

Although the title *Corporations and the State* would not lead one to suppose that information and discussion of the monetary and banking problems were contained therein, nevertheless, a chapter on banking corporations treats these subjects very thoroughly. The chapter on regulation of corporations is of timely interest, confronted as we are with legislation on this subject. The historical section of the book, treating the subject of origin and development of corporations, is most thorough and interesting, throwing, as it does, light on one phase of the subject which is rarely touched upon.

BUSSELL, F. W. *A New Government for the British Empire.* Pp. xii, 108. Price \$1.25. New York: Longmans, Green and Company.

This belongs to the large class of transitory literature produced by the recent political crises in England. Mr. Bussell, evidently much perturbed by the current trend of party politics (pp. v, vi), decides that contemporary democracy is "an empty imposture, disguising absolute government in an anonymous and peculiarly distasteful form; as precarious in tenure as the older despotisms, and far less dignified, continuous and efficient in its policy" (p. 9). His remedy is reversion to government by king and aristocracy. He would permit popular control of local concerns by "home rule all around," but imperial affairs should be managed by a monarch with the advice of ministers actually selected by himself and by a deliberative chamber of elected hereditary peers and colonial representatives. Only by some such method, he concludes, can *imperium* and *libertas* both be preserved.

CHILDS, MARY L. *Actual Government in Illinois.* Pp. 224. Price, 50 cents. New York: The Century Company, 1914.

As a handbook giving the knowledge of the machinery and structural form of local and state government in Illinois, this volume is eminently satisfactory. Its foreword to the teacher is suggestive of the volume yet to be written that will be a laboratory manual for the study of "actual" government out of the things daily seen, read and heard by the high school or grade student. To this end also the questions at the end of each chapter are helpful. One is disappointed, however, after noting the word "actual" in the title, to find that the volume treats only of the formal machinery in a traditional way and says not a word of the actual law-creating and government-directing social forces, such as public opinion, political parties, citizens' associations and publicity.

CROCE, BENEDETTO. *Philosophy of the Practical.* (Translated by Douglas Ainslie.) Pp. xxxvii, 591. Price, \$3.25. New York: The Macmillan Company, 1913.

This is a contribution to ethical theory of interest primarily to students of philosophy. In viewpoint idealistic, and in method Hegelian—by its use

of a refined dialectic—it demonstrates the unity of the theoretic and the practical. Spirit shows itself in these two forms. The practical is thought which realizes itself. The practical, therefore, presupposes the theoretical. Will is impossible without knowledge; as is knowledge, so is will. No third form can exist. The introduction of a third form, "feeling," has been of provisional assistance in getting away from the bad determinateness of intellectualistic philosophy, but its service is transient.

Economic science receives some share of attention. Its propositions are excluded from philosophical, historical or naturalistic science. It is reduced, therefore, to the position of a mathematic "applied to the concept of human action and to its sub-species. It does not inquire what human action is; but having posited certain concepts of action, it creates formulae for the prompt recognition of the necessary connections." It is a "simple descriptive or quantitative discipline treated with much elegance."

DOWDING, W. E. *The Tariff Reform Mirage*. Pp. xiv, 351. Price, 3/6. London: Methuen and Company, Ltd., 1913.

This is an interesting addition to the somewhat voluminous literature appearing in England on the subject of tariff reform. The author considers that the tariff reformers have merely "schemed to fill the air with alluring and deceptive shapes and they have schemed so well that they have overdone it." His discussion is in the form of a history of the tariff reform crusade which is written by weaving together the declarations and publications of the reformers themselves. Their appeals to the agriculturist, the imperialist, the merchant and the workingman are all held up to ridicule by pointing out various absurdities and inconsistencies. Each quotation has been verified, the references when not in the text being given in an appendix.

ELLWOOD, CHARLES A. *Sociology and Modern Social Problems*. Pp. 394. Price, \$1.00. New York: American Book Company, 1913.

This is a revised edition of the work first issued in 1910. The author has incorporated the 1910 census figures and has added two chapters, the bearing of modern psychology on social problems and theoretical summary. The last is a brief sketch of the origin and nature of society, theories of progress, etc. The original volume has been widely used as a text book for study classes and the revision will make it more valuable for that purpose.

EMERY, HENRY C. *Politician, Party and People*. Pp. 183. Price, \$1.25. New Haven: Yale University Press, 1913.

This is a series of four addresses in the Page lecture series, delivered before the senior class of the Sheffield Scientific School, Yale University, by Prof. Henry Crosby Emery. The lectures are entitled respectively—The Voter and the Facts, The Voter and the Party, The Voter and His Representative, The Representative and His Constituency, and The Representative and His Party. The essays present an incisive analysis of the relation of the man of affairs to the forces and facts in his actual government. They are happily devoid

of ultra-idealism and replete with the comment and knowledge of one intimate with the law-creating and the actual law-making and enforcing agencies of the day.

FARWELL, PARRIS T. *Village Improvement*. Pp. xi, 362. Price, \$1.00. New York: Sturgis and Walton Company, 1913.

This is an admirable handbook on things that have been and may be done for village improvement. It is not a "harangue," teeming with exhortations for the "up-lift" of the country dweller; quite to the contrary, it is full of constructive suggestions as to what is being done and what can be done in every phase of industrial, economic and social life in the small town to make life in the community more attractive and fruitful. It is overflowing with sane suggestions on how to improve the home and its surroundings; how to plant trees and make park improvements; how to plan and equip country roads and village streets; how to plan parks, large and small; the essentials as to public buildings and institutions; how to conduct a "clean-up" campaign; how to make the public school a social center; the need of play for young and old; the country church; improvements in school buildings; marketing clubs; farmers' clubs; neighborhood houses, etc. It is just the kind of a book needed for use in the small town where needs are many and means for satisfying them seldom at hand.

FRASER, JOHN F. *Panama and What It Means*. Pp. ix, 291. Price, \$1.75. New York: Funk and Wagnalls Company, 1913.

GASKELL, THOMAS P. *Protection Paves the Path of Prosperity*. Pp. xii, 147. Price, 3/6. London: P. S. King and Son, 1913.

We have in this volume another plea for the abandonment of free trade and the adoption of protection as an aid to prosperity in Great Britain. The author finds in successive chapters that agriculture has declined since the establishment of free trade in 1846; that Cobden was less far-sighted than Malthus, and that agriculture in England has lagged behind that of Germany and France. Statistics are appealed to in support of his contention that free trade lessens employment and lowers wages. There is also the familiar appeal for protection to afford food supplies in time of war. The feature for which the author claims originality is his discussion of the effect of free trade on the production, consumption, importation and prices of wheat from 1822 to 1912, which he presents both in statistical tables and in a diagram.

GOLDIN, H. E. *Mishnah—Baba Mezi'ah Order IV*. (Treatise II.) Pp. viii, 205. Price, \$1.50. New York: G. P. Putnam's Sons, 1913.

GONZALÉZ, JOAQUIN V. *El Juicio del Siglo ó Cien años de Historia Argentina*. Pp. 298. Buenos Aires: Juan Roldan, 1913.

In this volume Dr. González has collected a series of papers and addresses dealing with the political and social development of the Argentine Republic.

The first part is devoted to a discussion of conditions during the early and turbulent period of Argentine history, and prior to the adoption of the constitution of 1853. These essays deal not only with political events, but throw considerable light on the social conditions which contributed to the instability of the Argentine political system prior to the adoption of the present constitution.

In the second portion of the book the author deals with the origin of the written constitution of 1853, and presents an interesting analysis of the leading tendencies in the operation of the Argentine political system. His discussion of the movement toward parliamentary government is particularly illuminating.

HOLLAND, THOMAS E. *Letters to "The Times" upon War and Neutrality.* Pp. xii, 203. Price, \$2.40. New York: Longmans, Green and Company, 1914.

The second edition of this collection of letters to *The Times* coming, as it does, within four years of the initial publication in 1909 is indicative of the keen interest at present accorded to subjects in the nature of war and neutrality. The many changes and additions to the neutral obligations of sovereign states dealing with the "still unsettled questions suggested by the work of the second peace conference, by the declaration of London, and by the naval prize bill of 1911" rendered a new addition imperative. Chief among the letters since 1909 are those discussing such interesting subjects as the naval prize bill, the closing of the Dardanelles, the aerial navigation act, private property at sea, German war material for Turkey, and the various problems contained in the declaration of London.

JOHNSTON, SIR HARRY. *Common Sense in Foreign Policy.* Pp. x, 119. Price, \$1.25. New York: E. P. Dutton and Company, 1913.

JORDAN, DAVID STARR. *America's Conquest of Europe.* Pp. 70. Price, 60 cents. Boston: American Unitarian Association, 1913.

This booklet comprises an essay, with the above title, and an address on World Peace and the Treaty of Ghent, which was delivered in Ghent, in 1913, before an international congress of heads of secondary schools. The theme of both essay and address is practically the same, and it is developed in the distinguished author's well-known suggestive and stimulative manner.

The "conquest" referred to is, of course, not one of force, but of New World ideals over Old World ideas, and is the result of the triumph of democracy over paternalism; of opportunity over exploitation; of the man over the dollar; of the individual over the despotism of state and church; of national confidence, as illustrated by the unfortified Canadian boundary line, and as based on open diplomacy, over mutual suspicion, as based on armament increase and secret diplomacy; of national federation, resulting in "jurisdictions," over an imperialism which produces "powers;" of the freedom of the seas, and the immunity of private property from capture in naval warfare, over the principle of *mare clausum*; of law and public opinion over militarism at home, and of international justice over national force abroad.

KEELING, FREDERIC. *Child Labour in the United Kingdom*. Pp. xxxii, 326. Price, 7/6. London: P. S. King and Son, 1914.

This is an authoritative work. It would be hard to find a more carefully elaborated study of the development and administration of the law relating to child labor in any country. It has been prepared as a report to the International Association for Labor Legislation as one of a number on conditions in different countries. These reports are to be presented to a special international commission appointed to discuss the question of child labor. This report outlines the history and present position of child labor legislation in the United Kingdom, and then deals with current problems of administration, as affecting the principal varieties of child labor. Reports on local administration are particularly detailed. An excellent bibliography and carefully organized indices add to the value of the work.

KIRKBRIDE, FRANKLIN and STERRETT, J. E. *The Modern Trust Company*. (4th Ed. Rev.) Pp. xiii, 319. Price, \$2.50. New York: The Macmillan Company, 1913.

Students of banking in all of its phases will welcome the fourth edition of this standard work. In its preparation all facts have been brought down to date and the valuable bibliography has been much enlarged. It is to be hoped that the authors of this volume who have shown themselves so well qualified to discuss the subject will furnish frequent revisions of their book. The recent passage of the federal reserve act may sufficiently influence trust company business to make another edition advisable within a very short time.

MACFARLAND, C. S. *Spiritual Culture and Social Service*. Pp. 222. Price, \$1.00. New York: F. H. Revell Company.

MANNIX, W. F. (Ed.) *Memoirs of Li-Hung-Chang*. Pp. xxvii, 298. Price, \$4.00. Boston: Houghton, Mifflin Company, 1913.

Extracts from a diary continued from youth to old age, containing much internal evidence that the writer must have been not only a man great in power over men but also (notwithstanding his evil reputation among foreigners) possessed of the wisest patriotism and real human feeling. Of especial interest are his successive utterances regarding Christians and foreigners, showing a gradual breaking down of early hostility, accounts of his intercourse with various foreigners, General Gordon, General Grant, President Cleveland, Bismarck and others, his manifestations of gratitude to the United States as "the friend of China," and a narrative of the Boxer disturbance.

MARKS, T. E. *The Land and the Commonwealth*. Pp. xxv, 314. Price, 5s. London: P. S. King and Son, 1913.

MARRIOTT, J. A. R. *The French Revolution of 1848*. (2 vols.) Pp. xcix, 679. Price, \$2.00 each. Oxford: Clarendon Press, 1913.

The title of this work is quite misleading unless a rather long introduction to a new edition of the works mentioned below can be called a history of

the revolution of 1848. For we have here nothing more nor less than a republication of two remarkable works relating to the economic history of the last century, or to be more specific, to the history of social experiments in 1848. The first, the *Organisation du Travail* has been republished and translated at different times—note particularly the English edition by Dickoré—but the second, the history of the workshops by Émile Thomas who temporarily saved the *ateliers*, so-called, is much less known and accessible. That the work will be welcome in these days of social experiments and interest in economic history goes without saying. The text of the original is carefully reproduced and the historic setting is discussed with sympathetic insight and at considerable length in an introduction of ninety-nine pages. Added to this is a rather exiguous list of books (pp. xviii–xeix) given without date of publication or reference to editions and without critical comment and evaluation.

MARTIN, ASA E. *Our Negro Population*. Pp. 189. Price, \$1.25. Kansas City: Franklin Hudson Publishing Company, 1913.

One of our great needs, if we are to devise better programs, is the study of actual concrete localities, not the theoretical discussion of the so-called Negro problem. This little volume is welcome, therefore, for it is a study of the Negroes of Kansas City. The author is a teacher in the high school there. The findings are presented in interesting fashion with many tables and illustrations.

MILLER, WILLIAM. *The Ottoman Empire, 1801–1913*. Pp. xvi, 547. Price, \$2.50. Cambridge: University Press, 1913.

MILNER, VISCOUNT. *The Nation and the Empire*. Pp. xlvii, 515. Price, \$3.00. Boston: Houghton, Mifflin Company, 1913.

MOXEY, E. P. *Principles of Factory Cost Keeping*. Pp. 102. Price, \$1.00. New York: The Ronald Press Company, 1913.

NOGARO, BERTRAND. *Éléments d'Économie politique: Répartition-Consommation Doctrines*. Pp. 291. Price, 4 fr. Paris: M. Giard and É. Brière, 1914.

This is the complementary volume to one of which a notice appeared in THE ANNALS for March, 1913 (p. 196). This second volume completes a brief treatise by a discussion and application of the doctrines of distribution and of consumption. The earlier volume dealt with production and exchange.

OLBRICH, EMIL. *The Development of Sentiment on Negro Suffrage to 1860*. Pp. 135. Price, 25 cents. Madison: University of Wisconsin.

This master's degree monograph of five chapters traces the development of ideas on Negro suffrage from colonial days to 1860 as a basis for judging the reconstruction measures of 1867.

In the colonial period, only North and South Carolina, Virginia and Georgia had any expressed exclusion of Africans from the franchise. Although slavery and prejudice were general, people occasionally acquiesced in cases of the free Negro vote. Between 1790 and 1838 definite action was taken to disfranchise Negroes whether they voted by suffrage or legal right, although "in none of the states, probably, was Negro voting uniform." The main reason for the disfranchisement efforts was the increasing number of those who voted. Between 1838 and 1846 the agitation in favor of Negro suffrage was more or less connected with the abolitionist and anti-slavery movements, or with the liberty, the free soil and Republican parties.

The struggle in the northwest, 1844 to 1857, showed strong favorable sentiment in the northern sections of the old northwest where the settlers came from New England and New York or where Quakers and abolitionists added their strength. So that Wisconsin, Michigan, and northern Ohio furnished more champions of Negro suffrage than Illinois, Indiana and southern Ohio. The Republican party crystallized this phase of "the idealistic political movement" and although in the minority, in several states the large endorsement of Negro suffrage before the heat of Civil War helps greatly in accounting for the reconstruction act of 1867 and the fifteenth amendment.

OLIN, W. H. *American Irrigation Farming*. Pp. 364. Price, \$1.50. Chicago: A. C. McClurg and Company, 1913.

This is essentially a manual for farmers who irrigate their land in the arid portions of the United States, including also a sketch of the ancient history of irrigation and its present practice in foreign countries.

POLLOCK, H. and MORGAN, W. S. *Modern Cities*. Pp. x, 418. Price, \$1.50. New York: Funk and Wagnalls Company, 1913.

This is a series of disconnected essays covering a number of pertinent city problems, such as city planning, the housing problem, city streets, art in cities, parks, harbors, conservation of human life, the structure of government, municipal home rule, the selection of city officers and employees, control of municipal utilities, recent developments in education, the relation of the municipality to religious life, and the social evil. The data used are not especially new, nor do the authors present anything like a descriptive point of view. While not making a "contribution," they have written a book that makes interesting and popular reading.

RIVES, G. L. *The United States and Mexico*. Pp. xiv, 1446. Price, \$8.00, New York: Charles Scribner's Sons, 1913.

SEAGER, H. R. *Principles of Economics: Being a Revision of "Introduction to Economics."* Pp. xx, 650. Price, \$2.25. New York: Henry Holt and Company, 1913.

STEWART, H. L. *Questions of the Day in Philosophy and Psychology*. Pp. ix, 284. Price, \$3.00. New York: Longmans, Green and Company.

TUCKER, G. F. *Income Tax Law of 1913 Explained*. Pp. xi, 271. Price, \$1.50. Boston: Little, Brown and Company, 1913.

Although this volume was issued so promptly after the passage of the law that it describes, it contains much of interest. The author presents the law section by section with comments and citations, basing his opinions upon previous court decisions, and departmental rulings on points at issue under other similar laws. Many of these will doubtless be helpful to the reader but he will hesitate to accept them until confirmed by rulings and decisions under the new act itself. Treasury regulations of October 31, 1913, are included. Unfortunately for the taxpayer so large a number of later rulings have already appeared that he can not view this volume as a safe guide on any points upon which he is in doubt.

WEBB, M. DEP. *Advance India*. Pp. viii, 190. Price, 5s. London: P. S. King and Son, 1913.

This volume may be accepted as the most authoritative presentation of the arguments in favor of free coinage of gold and the use of gold as a medium of circulation in India. To the activities of the author more than to any other one man, was due the appointment of the Royal Commission on Indian Finance and Currency whose report has but recently been submitted. The book is divided into four parts: the first is written for English readers, the second for Indians, the third gives the text of the royal commission with a discussion of its leading points, and the fourth is an appeal for the adoption of the author's views for the sake of both India and London.

Free coinage of gold at an open gold mint at Bombay where British sovereigns, or, as a second choice, Indian sovereigns of the same size, weight and fineness should be coined; encouragement by the government of the use of gold as currency, especially by paying all obligations possible in gold; suspension of the coinage of rupees until the country has absorbed all the gold coin it will take; profits on coinage to be held in India chiefly in a gold reserve with but a small part invested in Indian securities; and the avoidance of sterling loans, are the leading recommendations. Supplementary suggestions are that (1) council drafts be restricted to the sums required to meet the home charges and additions to the token coinage; (2) council drafts be drawn at one uniform rate, and (3) the inclusion of the treasury at Delhi and Karachi among those on which council drafts can be drawn.

The recently published *Indian Currency and Finance* by Mr. Keynes is a very forceful reply to many of Mr. Webb's contentions and on many of the points in dispute Mr. Keynes seems to have the better of the arguments. The value of *Advance India* is, however, unquestionable and is, so far as the reviewer is aware, the best available presentation of this side of the case.

WHITNEY, NATHANIEL R. *Jurisdiction in American Building-Trade Unions*. Pp. vii, 182. Price, \$1.00. Baltimore: Johns Hopkins Press, 1914.

To the layman, one of the incomprehensible difficulties arising from trade union activity is the "jurisdictional strike." Dr. Whitney has analyzed the

causes of such difficulties in an important industry, critically examined prominent instances and suggested remedies. The overlapping of various trades is the chief cause; the solution lies in agreements between unions and in arbitration. The general public favors union conditions. It should not be forced to suffer because of conflicts between unions as to which shall do work. This book is an interesting study of a serious and complex problem.

WICKWARE, F. G. (Ed.) *American Year Book, 1913*. Pp. xx, 892. Price, \$3.00. New York: D. Appleton and Company, 1914.

WILLIAMS, ANEURIN. *Co-Partnership and Profit-Sharing*. Pp. vii, 256. Price, 50 cents. New York: Henry Holt and Company, 1913.

This popular discussion is of particular value at this time, in view of the increasing interest in co-partnership and profit-sharing. Although intended primarily for the general reader, the expert will find much of interest and value. The point of approach is English, but a large number of the examples are American. The author feels that the plans he discusses have done much to emphasize the mutual interest of employer and employee. The potentiality and possibility for better understanding are very great. They do not imply the destruction of trade unionism, but rather assume "reasonable forms of trade unionism, collective bargaining, the meeting of capital and labour" (p. 207). "Employers, if they wish to get the benefits and to confer the benefits which attach to profit-sharing and co-partnership, can only do so if they are willing once for all to renounce any hostility to trade unionism" (p. 73). Encouraging employees to obtain a financial interest in the business in which they are engaged and allowing them to share in its profits give them increased interest in its success and develop an *esprit de corp* that makes for efficient management.

WINGFIELD-STRATFORD, ESMÉ. *The History of English Patriotism*. (2 vols.) Pp. lii, 1286. Price, \$7.50. New York: John Lane Company, 1913.

REVIEWS

ABBOTT, HOWARD S. *Public Securities*. Pp. xx, 1280. Price, \$7.50. Chicago: Callaghan and Company, 1913.

There is so much need for a treatise on this subject that the volume compiled by Mr. Abbott will receive a most hearty welcome. As announced by the publishers it is "thorough and exhaustive," in fact so much so that a reviewer must content himself with a survey of only a few of its many excellent points.

To the layman the volume appears admirable. In its compilation there has evidently been an effort to present not merely those facts which are necessary to a logical and well developed treatise but also to place emphasis upon those features in connection with public securities, that are today most important. Thus chapter III on the power to incur indebtedness and issue

negotiable instruments and chapter IV on limitations on the power to incur indebtedness or to issue negotiable securities are especially valuable. Even though other considerations than legality should determine the creation of indebtedness, a clear recognition of the legal limitations may prove a check on reckless borrowing.

Apparently the author has had the same point in mind in chapter XII on the validity of public securities, chapter XIV on the payment of public securities and chapter XV on actions on public securities. The tremendous increase in municipal indebtedness and the tendency in the last few years to a rapid growth in state debts indicate that sooner or later there must be a reckoning. Borrowing on long-time bonds to meet current expenses or to finance short-lived improvements will before long precipitate disaster. When the trouble comes the public corporation may find repudiation the easiest solution. Even the serious effect of such a course upon credit does not always deter and moreover other devices may be employed that are nearly as serious for the security holder.

During the last year, an important municipality found difficulty in meeting its maturing bonds on which a low rate of interest was being paid, a rate that was justified by market conditions at the time of the issue some years ago. But conditions have changed and today the city that fifteen years ago borrowed at 3 per cent must now pay 4 per cent and those that paid $3\frac{1}{2}$ per cent must now pay a correspondingly higher rate. Regardless of this change in interest rates the municipality in question offered to pay the old issue by giving in exchange a new issue bearing the same rate of interest. To this the bondholders offered an indignant protest. Another evidence of growing trouble was the difficulty experienced by one of the states in meeting a maturing loan, the problem being finally solved by the issue of short-term notes at a high rate of interest.

These incidents illustrate the necessity of a close scrutiny of public securities in order to be sure of their validity. Investors will find care in this particular increasingly important.

E. M. PATTERSON.

University of Pennsylvania.

AMERY, L. S. *Union and Strength*. Pp. vi, 327. Price, \$3.50. New York: Longmans, Green and Company.

This is a collection of papers on imperial questions published or delivered at various times between 1905 and 1912. The method of construction results in a large amount of repetition, but the sacrifice of unity, which might be anticipated, has been avoided by the tenacity with which the author clings to his theme. This he designates as "the urgent necessity of attaining to some real and enduring constitutional union for the British Empire, of paving the way towards that union by the development of mutual trade, and of defending the existence of that empire from destruction by external force during the period of transition" (p. 5). He writes as the frank advocate of these objects, but his partisanship takes a comparatively moderate tone and his viewpoint is highly practical.

The papers constituting the volume may be grouped under four topics. In the first three papers the case for imperial unity is presented in broad outline. Without attempt at elaborate proof Mr. Amery gives reasons in favor of federation, sketches the essential features of such an organization, and suggests several changes in the existing system as preliminary steps along the desired road. On the subject of imperial defense, which occupies over half the book, the treatment becomes more argumentative and detailed. A graphic and instructive survey of the geography of the empire from the viewpoint of the possibilities of attack and defense leads the author to conclude that existing defenses are hopelessly inadequate. As the principal means of supplying this deficiency he argues at length for a method of compulsory military service similar in principle to the German. Imperial preference is dealt with rather cursorily. Some of the anticipated advantages of this policy are indicated, but the most substantial contribution here is a discussion of the probable effects of such a relation with South Africa. The last two papers are occupied with an interesting estimate of the resources and future possibilities of British East Africa and the Hudson Bay region.

Taken as a whole the book deserves an eminently respectable place among its fellows. It represents only one side of the case, but of that side it is a well-balanced and conservative statement.

W. E. LUNT.

Cornell University.

Cambridge Medieval History. (2d Vol.) Pp. xxiv, 891. Price, \$5.00. New York: The Macmillan Company, 1913.

The second volume of the *Cambridge Medieval History* covers the period from the accession of Justinian to the coronation of Charlemagne and bears the sub-title "The Rise of the Saracens and the Foundation of the Western Empire" as an indication of the two most important phases of the three hundred years in question, though all aspects of the period are treated by the twenty-one contributors to the volume. The editors have drawn upon the scholarship not only of England but also of Germany, France, Austria, Russia, Spain and America and their choice has been justified by a series of chapters fully abreast of the latest knowledge on the various subjects and, in nearly every case, presented with literary skill. It is decidedly a more interesting volume than the first one of the series.

Of the twenty-two chapters, twelve are devoted to a narrative of events and ten to the description of institutions, a most satisfactory division of emphasis for the period in question. In the narrative chapters, Prof. Diehl deals with the reign of Justinian, Dr. Pfister with the Merovingian period, Dr. Altamira with Spain under the Visigoths, Dr. Hartmann with Lombard Italy, Mr. Baynes and Mr. Brooks with the Eastern Empire from Justinian to Leo the Isaurian, Prof. Becker with the expansion of the Saracens in Asia, Africa and Europe, the Rev. Mr. Warren and Prof. Whitney with the conversion of the Kelts and Teutons, Mr. Corbett with the history of England to 800, Prof. Burr with the reign of King Pepin and Prof. Seeliger with Charlemagne. Among

these varied topics the chapter of Prof. Burr on the Carolingian revolution and the Frankish intervention in Italy stands out above all the others for clarity of treatment and charm of style and it would be difficult to find elsewhere within the same space a better example of the presentation of a critical and complicated episode of history.

The first of the descriptive chapters contains a summary of those features of the Roman law that most affected the period, by Mr. Roby, who, though deprecating a comparison of this with the famous chapter of Gibbon, has nevertheless succeeded in compressing into small space a vast amount of information regarding the principles of the Roman legal system. Further on Prof. Pfister describes the political and social institutions of the Merovingians, Dr. Hartmann those of imperial Italy and Africa, and Prof. Seeliger those of Charlemagne's empire. An excellent and judicious account of Mohammed and the rise of Islam is given by Mr. Bevan and an unexpected pleasure is afforded by a chapter on Keltic and Germanic heathenism from the experienced pens of Prof. Jullian, Prof. Anwyl and Miss Phillpotts. Finally, Prof. Vinogradoff contributes a chapter on the foundations of society with the somewhat deceptive sub-title origins of feudalism, for the chapter deals almost exclusively with Germanic social organization, little being said of the institutions of the later Roman empire. The most striking contribution in the book is on the expansion of the Slavs, by Dr. Peisker, who contributed to the first volume the chapter on the Altaic Nomads. This account of the Slavs contains much information that will be new to most western readers, but one feels that some of the writer's views are hypotheses and deductions built upon a somewhat uncertain basis of facts and that too much use has been made of theoretical reconstructions.

The volume closes with fourteen maps, most of them excellent. The bibliography follows the plan of the first volume and covers some hundred pages. It has been somewhat more carefully edited in this instance, but still shows a regrettable lack of care in the reading of the proof. It ought to be possible to adopt a uniform method of capitalization in the citation of books in the same language.

A. C. HOWLAND.

University of Pennsylvania.

CLEVELAND, F. A. *Organized Democracy*. Pp. xxxvi, 479. Price, \$2.50. New York: Longmans, Green and Company, 1913.

Dr. Cleveland's book makes a most acceptable addition to the American citizen series. It is inclusive in its subject matter and suggestive in its ideas and arrangement. In the latter sense only, however, is it a "contribution." It contains a good bibliography covering practically the entire range of American institutions and the citizen's relation thereto, while each chapter is introduced with a splendid bibliography on the special subjects therein treated. The volume is divided into five parts entitled respectively—The Foundations of the American Republic, Provisions for Making Citizenship Effective, The Electorate as an Agency for Expressing Public Opinion, Utilization of the Electorate and Provisions for Making Public Officers Responsible and Responsive.

In Part I are discussed the conflict between absolutism and feudalism on the one side and self government and democracy on the other, the transplanting of fictions of absolutism in America and the distribution of powers among American officials and other absolute principles of American government. In Part II are briefly discussed the rights that citizens have as against their government, the duties and responsibility of citizens as such (and he does not include among them the moral responsibility of writing to their congressmen), and direct legislation by which citizens may directly participate in governmental acts. In Part III are discussed the evolution of qualifications for the suffrage, the exclusion of the unfit therefrom, the inclusion of women, the formulation of electoral issues, nominations of candidates, registration of voters, legal safeguards in casting and counting of ballots. Part IV describes how the electorate is utilized in passing on constitutional provisions, on laws, and the provisions for, and the judicial decisions pertaining to, direct legislation. The provisions for making public officers responsible and responsive are discussed. These include the direct choice of senators, the protection given to legislators, the recall, legislative reference bureaus, the restraint on legislators by the bill of rights, the means of fixing responsibility on executive officers through the right of inquiry, publicity, civil service and the restraint on judicial officers.

Dr. Cleveland sees the hope of the future in the awakening of the electorate as evidenced, among other things, by the demand by women for the ballot, and in the new movement to give to the government a social purpose and to dispense with the doctrine of *laissez faire*. Among the means still to be provided for making the popular will effective, he especially emphasizes proper provisions for budget making, efficiency records and reports, and other provisions for poignant publicity.

CLYDE LYNDON KING.

University of Pennsylvania.

CORWIN, EDWARD S. *National Supremacy: Treaty Power vs. State Power*. Pp. viii, 321. Price, \$1.50. New York: Henry Holt and Company, 1913.

During the last few years there has been much discussion of the scope and limits of the treaty-making power of the United States. The subject is one which for many decades has occupied the attention of commentators on constitutional law, but during recent years it has become an acute international question. The helplessness of the government of the United States in giving adequate protection to foreigners resident within the states, and the humiliating position in which the President has been placed in replying to the protests of foreign governments have gradually developed a body of opinion in favor of the extension of federal authority in dealing with the treaty rights of resident aliens. The long series of outrages on foreigners beginning with the Chinese massacres in 1895 gave to the United States an unenviable reputation in international dealings. These outrages were a constant source of international irritation, and one cannot but feel that foreign governments were deserving of great credit for the patience and forbearance shown when their citizens and subjects suffered by reason of mob violence. This question of the scope of the

treaty-making power was moved further into the foreground of public attention by the California school regulations discriminating against Japanese, and later by the legislation of California, Arizona and New Mexico limiting the property rights of persons ineligible to United States citizenship. The significance of these questions, their bearing on the good name of the United States, and their direct relation to the maintenance of international peace give to the work of Mr. Corwin a position of exceptional importance not only for special students of constitutional law but for every one interested in the fostering of friendly relations with foreign countries.

In the arrangement of this work, the author first gives an excellent historical survey of the scope and limits of the treaty-making power under the Articles of Confederation, and then traces the development of this power under the Constitution, its exercise in our foreign relations as well as its interpretation by the federal courts.

In his conclusions the author is a pronounced nationalist, and his position is clearly shown when he contends that "the United States possesses adequate executive power to safeguard any large general interests entrusted to its keeping, even though Congress may have failed to provide the precise channels in which such executive power should flow." Applying this standard to the treaty-making power the author maintains:

1. "The right of the executive to interfere with such force as may be necessary, at all times and places, not simply for the enforcement of judicial decisions determinative of alien rights under treaty, for that faculty of the executive was already plain, but for the purpose of preventing an interference with such rights.

2. "The right of the federal courts to interfere by injunction, not merely upon the application of an alien whose property interests are menaced, but upon the application of the executive agents of the Government itself, to prevent injury to rights secured by treaty.

3. "Constitutes from the raw material, so to speak, of the treaty pledges of the United States, a standard of public policy of which all courts should take cognizance in evaluating contracts and other juristic acts of private parties, and of which the federal courts are obliged to take cognizance when adjudicating controversies between citizens of different States."

Dr. Corwin has performed a real service not only because of the fact that he has so clearly formulated the issue between federal and state authority, but has also presented a definite and constructive program, which will permit the federal government fully to meet its international obligations. Every one reading Dr. Corwin's book must be forced to the conclusion not only that the federal government must afford more ample judicial remedies to resident aliens whose property or persons have been injured through the violation of rights guaranteed under treaties, but that it is necessary for the government to go one step further, exercising the full authority of the executive in preventing attacks on the rights of aliens.

This book is a real contribution to the study of an intricate and delicate constitutional and international problem.

L. S. ROWE.

University of Pennsylvania.

CORY, G. E. *The Rise of South Africa*. (Vol. II.) Pp. xvi, 489. Price, \$5.50. New York: Longmans, Green and Company, 1913.

The second volume of Mr. Cory's *Rise of South Africa* fully maintains the high standard set in the first. The actors in the country's history continue to tell their own story. The material is well documented and the author is successful in keeping himself in the background. Unlike the first volume dealing with the history of times previous to 1820, there is for this one a large amount of reliable published material. This is so profusely used that the author at times fails to realize that the reader has not intimate knowledge of the country's characteristics and general development. It is to be regretted that greater effort is not made to summarize the developments which the detailed description illustrates. The illustrations, which are excellent, are from contemporary cartoons, village plats, early books on South Africa and from photographs of the places where the events described occurred.

The account here given traces the life of the colony through the troublous period from 1820 to 1834. It is largely a record of heroic pioneer work, struggles with hostile natives and an inhospitable soil. There is the usual dreary tale of jealousy, inefficiency, mismanagement, corruption and petty local bickering, that abounds in pioneer ventures but the story as a whole is one which shows the indomitable determination which has made British colonization the world over a success.

Up to 1820 South Africa, in spite of the British occupation in 1806, was British only in name but in that year alone under the influence of the movement to relieve the distress at home by sending the poor to the colonies, 4000 emigrants were sent to the cape. More unfavorable circumstances could hardly be imagined than those under which the ventures started. The government of the colony was not appraised of the intended immigration, the ships were ill-provisioned, no adequate facilities for handling the people were provided against their arrival and bickerings among the authorities and the settlers were prominent from the start. Crops were blighted, the Kaffirs drove off what cattle the colonists raised. The trials attendant on the first years were only earnest of those which continued throughout the period and the difficulties inherent in the situation were much exaggerated by the political mistakes made by both the home government and its local representatives. The governors made the most of the fact that they were distant from the authorities to which they owed obedience and the authorities at London misunderstood South African conditions.

But political conditions, however unfortunate, from many viewpoints, resulting in the outbreak of war in 1834, did not prevent material advance. By the end of the period wagon roads had been extended, native trade developed, ivory, hides and gum had become important articles of export and wool production had been firmly established. Had there been better understanding of conditions and less insistence on British standards the author believes that even at that time the Cape of Good Hope might have become one of the most important of British colonies.

CHESTER LLOYD JONES.

University of Wisconsin.

DAVENPORT, H. J. *The Economics of Enterprise*. Pp. xvi, 544. Price, \$2.25. New York: The Macmillan Company, 1913.

The title of this book is misleading. He who expects to find here a presentation of the practical problems of the subject will be disappointed. The book instead is a theoretical study of the various factors in distribution.

Economics is defined as "the science that treats phenomena from the standpoint of price." The problem of market price is held to be the central problem of present-day economics, the core of all economic theory. Wages, rent, interest, and all other economic incomes appeal for their explanation to an analysis of the general principles of price. The author considers fully the various shares in distribution, with the exception of the share going to laborers; singularly enough, there is no chapter devoted to wages. There is quite a lengthy treatment of money, credit, and banking, and a chapter on combination and monopoly; but even in these two chapters the treatment is mainly theoretical.

The general viewpoint of the author on these theoretical questions is indicated in the preface. In questions of economic theory, he admits himself to be in essentials rather a conservative than an innovator. He aspires, it is true, to reformulate the established principles, but to restate them in fundamentals only to affirm, and rarely or never with the purpose of putting them in issue.

With respect to the applications of economic principles to the problems of practical progress, however, the author regards himself as a radical economist, as belonging to that group of thinkers who are facing towards the new day—the disturbers at large of the peace. He insists that economics must cease to be "a system of apologetics," a "creed of the reactionary," a "defense of privilege," or a "social soothing syrup." Had it been within his power this book would have set forth a new political program. As it is, it aims to furnish to progressive social workers an ultimate and working basis of economic theory. The call is sounded, however, for someone to construct a program for social progress, based upon the theoretical foundation established in this book.

It is to be hoped that our author, having provided the foundation, will himself complete the superstructure. While the present book will appeal, in the main, to the small group of economists who are especially interested in the refinements of economic theory, the proposed applications of these theoretical principles, in the spirit of our author, would teem with interest for a large circle of readers.

ELIOT JONES.

University of Pennsylvania.

FARRAND, MAX. *The Framing of the Constitution*. Pp. ix, 281. Price, \$2.00. New Haven: Yale University Press, 1913.

Professor Farrand has condensed in this volume the original material edited by himself in his three volume work on *The Records of the Federal Convention*. He does not, therefore, presume to throw any new light on the fram-

ing of the Constitution of the United States, but rather to present in one concise book the work of the convention and the details and compromises discussed and finally worked out and adopted therein.

Professor Farrand summarizes the details he has presented in his chapter on the convention and its members by stating that the fifty-five who actually attended the convention were at an average age of forty-two or forty-three, one-sixth were of foreign birth, three-fourths had served in Congress, and practically all of them had played important parts in the revolution. "In a time before manhood suffrage had been accepted, when social distinctions were taken for granted, and when privilege was the order of the day, it was but natural that men of the ruling class should be sent to this important convention."

He shows that every provision of the Constitution can be accounted for in American experience between 1776 and 1777 and that it is "neither a work of divine origin, nor 'the greatest work that was ever struck off at a given time by the brain and purpose of man,' but a practical, workable document. . . . It was floated on a wave of commercial prosperity." He finds that the features that recommended the Constitution to the acceptance of many were its simplicity and its practical character. He illustrates the differences of opinion pertaining thereto, however, by noting that in Halifax, Virginia, a preacher had pronounced from the desk a fervent prayer for the adoption of the federal Constitution. No sooner had he ended his prayer than a clever layman ascended the pulpit, invited the people to join a second time in supplication and put forth an animated petition that the new scheme be rejected.

CLYDE LYNDON KING.

University of Pennsylvania.

GANTT, H. L. *Work, Wages and Profits*. Pp. 312. Price, \$2.00. New York: Engineering Magazine Company, 1913.

Mr. Gantt begins his book by showing that both employers and employees have attempted to advance the interests of their classes by the use of force. The factory owners have combined in an effort to keep the laborers in separate wage groups, and have refused to advance the compensation of the groups except under compulsion. Individual, good workmen have been unable to obtain higher pay than the mass, hence have sought to make the group wage higher through unions. This system brings the welfare of employer and employee into antagonism, and produces strife without ultimate profit to either party to the conflict. Mr. Gantt believes that the laborer's desire for greater remuneration and the owner's wish for lower labor cost can be harmonized, through a system of better management, whereby each party gets part of the gain derived from an increased production.

In the system he advocates, it is the management's duty to analyze the processes of manufacture in order to discover the best way to do any particular operation. When the best method has been discovered it is to be made a standard to which the workman must conform. To guarantee that the job may be done in the standard way it is also the function of the management to provide proper tools, appliances and materials, and to see that these are always

ready for the workman's use. The standard method is set as the laborer's task. If the task is done in the way prescribed and in the time allotted, the worker should be rewarded by a bonus in addition to his regular wage. Every one contributing to the successful completion of the task, even foremen and superintendent, also receives a bonus above his wage if the task be properly done. After a task is once set, and the bonus agreed upon, they should not be changed even if the worker receives wages that seem to be extraordinary. An essential part of the system is the keeping of accurate records of every task and each worker.

Such a system rewards the factory owner, because it gives a larger production of better quality with the same equipment as used formerly. Hence labor cost is reduced. It benefits the worker by rewarding skill and good work in direct proportion to the effort put forth.

From the practical viewpoint the book makes a great contribution to the science of management in the scheme of bonus payment for a set task. The numerous charts, and the evidence drawn from the author's personal experience are also valuable.

As a piece of literature the book might be much improved. For instance chapter XI on prices and profits might well have been placed first, instead of next to the last. Throughout the first part of the book there are also many repetitions of the same ideas often expressed in identical words. The volume shows too plainly that it is a collection of magazine articles, and not a consecutive story, planned as one complete piece of work.

R. MALCOLM KEIR.

University of Pennsylvania.

Industrial Unrest and the Living Wage: A Series of Lectures given at the Inter-Denominational Summer School, held at Swanwick, Derbyshire, June 28-July 5, 1913. Pp. 182. Price, 2s. London: P. S. King and Son, 1913.

This little book is simply a report of the addresses delivered at the second session of the United Summer School—appearing as the second volume of a series of such, entitled *Conveying Views of Social Reform*. It is significant as expressing the reaction of the religious groups of England to the pressing questions of social advance. An interesting fact is that this important summer school took its rise from the student Christian movement. The English experience perhaps points the way to a closer coöperation of the church and university in this country through the present emphasis of the intercollegiate Christian associations upon social service.

With regard to the contents of the book, the introductory address by Mrs. Creighton, and those following by the Bishop of Lichfield and Rev. Lloyd Thomas, with the last in the volume by Canon Holland, present well the varied relations of Christianity and social service, and emphasize the responsibility of the church for leadership in the essentially Christian social movements of the day.

The remainder of the lectures are discussions, by able students, of the subject of the standard of living, and its maintenance by the enforcement of

the living wage. Of course, they do not claim to be original contributions to the field, yet they have considerable educational and propagandist value. English thought is indeed changing when the Rev. Dr. Carlyle, a pastor from the town of Oxford, can present in a few terse pages the causes of the present industrial unrest. Professor Urwick reviews the question of the efficiency standard of living; then Professor Hobhouse justifies the living wage from the economic viewpoint; Mr. Shann shows the disastrous effects of non-living wages; Dr. Slater discusses the vital relations of the living wage and trade unionism; Professor Macgregor makes a strong plea for profit sharing; and Mr. Mallon tells in an enlightening way of the working of the minimum wage regulations under the trades boards act of 1909. It is worth noting that women, Miss Rankin and Miss Smith (and remember women are more definitely affected by the new legislation) treat the matters of wage movements and legislation in Australia and the United States. On the whole the book, although not in any sense a scientific treatise or even a presentation of new facts and viewpoints, nevertheless does furnish a valuable popular review of the standard of life and living wage discussion now rife in England.

FRANCIS D. TYSON.

University of Pittsburgh.

INNES, ARTHUR D. *A History of England and the British Empire.* (4 vols.) Vols. I and II, pp. lxiv, 1092. Price, 6s. each. London: Messrs. Rivington, 1913.

Mr. Innes has attempted to place at the disposal of the general reader the more important results of the critical and monographic study of the last generation. Volume I deals with the period to 1485; II, 1485-1688; (III, 1689-1802; IV, 1802-1914). The scale of presentation is comparable in general to the *Short History of the English People* by John Richard Green, and the work of Mr. Innes is no less characteristic of the present generation than Green's work was typical of the temper of the seventies. The earlier work is dominated by its ardent enthusiasm for the struggle of democratic leaders with prerogative. The main interest lies in the establishment of the authority of Parliament, and perhaps it is for this reason that the narrative of the earlier period received so much attention from Green. Mr. Innes represents the newer school that is more dispassionately concerned with the evolution of modern society. There is less disposition to take sides, with either Crown or Parliament. The narrative thus unfolds the record of the British empire and not merely the history of the English people. The adoption of this definitely scientific point of view leads to the inclusion of constitutional and economic material that is frequently neglected entirely or subordinated to the narrative of political events. Mr. Innes has maintained a more just proportion in the treatment of these different elements. Footnotes and critical apparatus are not in evidence but the temper of the work is essentially critical and appears clearly in the text, most particularly with reference to economic and constitutional material. Mr. Innes has thus achieved the distinction of presenting to the general reader a vital and significant interpretation of English history.

The interpretation of English history must needs rest upon the view taken of the relations of the Crown and Parliament. The view taken will surely color one's judgment of all events, and, because no two historians can entirely agree upon these matters, the history that is the work of many hands necessarily suffers from confusion of judgment or from exclusion of much interpretation. The tone of Mr. Innes' History is best indicated by his attitude upon these issues, and at each juncture his opinion is distinctly modern and judicial. He holds no brief for Crown or for commons. The constitutional reforms of Henry II are carefully sketched and due credit given to the Crown. The origin of trial by jury is described, its probable Norman source mentioned, and distinctions drawn between the earlier and later uses of juries. The rise of Parliament is described in terms that denote a careful attempt to avoid anachronism by attributing to the struggles of the thirteenth century a "democratic" character in the modern sense of this term. Simon de Montfort is given due credit for his Parliament of 1265, but the significance of this step and the real accomplishment of Montfort's ideas is credited to Edward I. "The constitutionalism which created the model Parliament was not intended to limit the power of the Crown, but rather to provide a counterpoise to the greater barons" (I, p. 263). The establishment of the foundations of English liberty is thus definitely ascribed to the Crown; to monarchs that were seeking to resist the tyranny of baronial oligarchy by building up a government founded upon laws and defended by the knights and burgesses who might easily become the prey of the barons. The problems of Crown and Parliament in the Tudor and Stuart period are carefully and consistently handled. The judgment of the issues of the period is too complex for adequate statement within the compass of a review. The essence of the view taken is that the Tudors exercised in fact powers that were never actually accorded to the Crown in form. There were many possibilities of discord but they remained dormant. Innes feels that open criticism of the Crown in the latter years of Elizabeth was restrained in a large measure by respect for her achievements. James thus came to a country ripe for a revolt which was brought to an intense crisis by the efforts of the Stuarts to exercise, in a less discreet manner, powers that in their judgment were by long custom accorded to the Crown.

It may be that many will differ from Mr. Innes in his judgments of men and of events but none will hesitate to accord to him the credit of presenting an intelligent, sincere, and dispassionate interpretation of the great historical episodes. Mr. Innes writes in an unadorned and compressed style that is neither strikingly graceful nor distressingly plain. The most serious problem that will occur to the teacher will be the availability of the book for the higher classes in secondary schools. Because it is a more carefully considered kind of historical writing it would seem likely that it would be somewhat more difficult reading than Green, but whatever effort the general reader or student may feel, there can be no doubt that he will be adequately rewarded for his pains, if he reads conscientiously.

ABBOTT PAYSON USHER.

Cornell University.

KALES, ALBERT M. *Unpopular Government in the United States*. Pp. viii, 263. Price, \$1.50. Chicago: University of Chicago Press, 1914.

Through the election of countless officers and multiplicity of election districts, American legal government has been completely decentralized. In control of this decentralized government is a highly centralized, though extra-legal and invisible government, composed of a professional vote-directing partisan organization. The electorate by being required to vote too much has, in effect, been deprived of its right to vote at all. Nine-tenths of the voters must vote the way they are told for four-fifths of the officers on the average ballot. Since the ballot is too cumbersome to vote without direction, a complex vote-directing professional class has been evolved. This vote-directing organization is our invisible, though actual, government.

Rewards for service are apportioned out among local leaders as special privileges or immunities, but to the lord paramount and his tenants in chief are reserved the highest privilege, and reward—that of entering into an alliance, offensive and defensive, with special business and property interests which need the aid of the local or state governmental power to exploit to the best advantage of the many or the protection from governmental interference at the demand of the many who are being exploited. “Indeed, so close may the relations become between the great captains of such special business and property interests and the extra-legal government by politocrats, that the real power of government may to some extent actually reside in the former rather than the latter. It will indeed be difficult in many instances to tell which group commands and which obeys. Where the leaders of both are equally able there will be a complete partnership.” When the outlook is dark for this extra-legal government by and for the politocrats, they nominate a Hughes or a Wilson, and content themselves with the “spoils” of the smaller offices.

The king-pin of “unpopular government,” that is government “of the few by the few and for the few at the expense and against the wish of the many,” is that the electorate is voting for a dummy though legal government. The only avenue through which unpopular government may be converted to essentially popular government is through centralization of legislative, executive and judicial power, such as is typified in the commission plan of government and in the short ballot. Thus judges will always be nominated by somebody. They may as well be nominated by some responsible person in power.

So runs the argument in this tersely written and pertinent book by Prof. Kales, who is professor of law in Northwestern University.

CLYDE LYNDON KING.

University of Pennsylvania.

KEYNES, JOHN M. *Indian Currency and Finance*. Pp. viii, 263. Price, \$1.60. New York: The Macmillan Company, 1913.

The appointment to the Royal Commission (1913) on Indian Finance and Currency of a man with the keen insight and great ability of the author of this volume is reassuring. Rumor has it that Indian affairs have too often been treated superficially and without appreciation of the seriousness and

complexity of the problems involved, but such an attitude will not be taken by the present commission if all of its members possess the same grasp of fundamentals as does Mr. Keynes.

In this volume there is given a thorough description and analysis of the Indian banking and currency system and its relations to the London market. The eight chapters cover the entire field. The two leading problems now up for settlement have to do with (1) an extension of the use of gold in India by the establishment there of a mint and by an attempt to increase the use of gold as a medium of exchange and (2) some reform in banking conditions, through the establishment of a central bank, or a broadening of the present work of the presidency banks or perhaps merely by strengthening the banking law of the country. The author opposes the general use of gold because (1) such use is expensive, (2) the plan would compel the government to dissipate over the country some part of its sterling resources now held in its reserves, thereby weakening its ability to meet a crisis and (3) gold would not supplant the rupees which are worth about half as much as gold and will still be needed for small payments but will take the place of notes for large amounts and will thus add to the heavy expense of a metallic medium. He advocates the establishment of a central bank, giving six very convincing reasons for his view, but fears that action may not be taken until a severe crisis makes it necessary.

On two points special comments seem appropriate. Mr. Keynes' very clear picture of the dangers lurking in the banking situation has already been proved correct by the events of recent months. The failure of several banks last fall made very evident the unsound conditions. The most important was the People's Bank at Lahore with 72 branches and a subscribed capital of Rs. 22 lakhs. It is to be hoped that this will be as much warning as is necessary.

On a second point the events of the past year do not so clearly prove the author correct. In chapter II he endeavors to place the whole Indian system in its proper perspective by contending that the British system is peculiar and is not suited to other conditions, that a somewhat different type of system has been developed in most other countries, and that in essentials the Indian system conforms to this other type. He finds (p. 19) the essentials of the British system to be (1) the use of checks and (2) "the use of the bank rate for regulating the balance of immediate foreign indebtedness (and hence the flow, by import and export, of gold)." In support of this he cites the increasing extent to which the continental banks of France and Germany at times partially suspend free payments in gold and accumulate foreign bills and credits upon which they may draw when necessary. His facts seem correct although the total of the Reichsbank's holdings of foreign bills and credits does not seem very impressive even at their present amounts. The interesting point, however, is the continued effort of these banks during the last twelve months to add to their holdings of gold, apparently with the intent of changing the situation pictured by Mr. Keynes. The Reichsbank has added \$100,000,000 to its holdings and has intimated an intent to secure \$75,000,000 more. The Bank of France has recently resumed its campaign for more gold as has also

the Imperial Bank of Russia. Apparently these institutions will not be content to drop into the gold exchange standard group in the company of India and the Philippines.

We have Mr. Keynes to thank for one of the best books on the subject that has ever appeared. It is clear throughout and bears on every page evidence of the ability, good judgment and thoroughness of its author.

E. M. PATTERSON.

University of Pennsylvania.

KLUCHEVSKY, V. O. *A History of Russia.* (Translated by C. J. Hogarth.) (3 vols.) Pp. xxv, 1079. Price, \$2.50 each. New York: E. P. Dutton and Company.

One of the best historical works published in any language in recent years is this history of Russia, by the late Professor Kluchevsky of the University of Moscow. For this is not a simple narrative of political or international happenings but a remarkable study of Russian social, economic and international history based upon years of personal research in the available historical sources of the subject. This will appear even to the casual reader if he is at all acquainted with the older histories of Russia. Instead of the conventional and somewhat disconnected chronicle by Rambaud, we have here a work that not only approaches the subject from a new and original point of view but reveals in every chapter a familiarity with and an assimilation of the sources for Russian history that compels attention and interest. Nowhere for example is there to be had such a searching review of the old chronicles, church ordinances, the lives of the Russian saints, the *Russkaia Praoda* or civil code, etc. Yet with all his detailed research, Professor Kluchevsky never loses sight of the forest for the trees, his interpretations are always ready and his generalization on the tendencies in Russian history at different periods are often startling in their sweep and boldness. Thus, for example, he tells us that the processes dominant in Russian history were comparatively simple, and that the "principal fundamental factor has been migration and colonization," a process in progress today.

In the three volumes before us, the story of Russian evolution is carried through the reign of Tsar Alexis. Right at the beginning the student accustomed to the old idea of Russian history will be surprised to find Ruric and his Norsemen playing a comparatively minor rôle in the early history of the eastern Slavs. Long before the appearance of the men from the North, the eastern Slavs had already organized in a military way in the Carpathians. Thence they turned back and moving eastward occupied the lower Dnieper where they established a capital at Kiev on the great highway of commerce between the Baltic and Byzantium. But they were unable to defend this region against the Tartars and they trekked northward mingling with the Finish tribes of the middle Russia regions. From this admixture of races came the Great Russian stock which gradually organized into petty principalities, the chief one having its seat on the Muskova. Here two chiefs appeared who drove out the Tartars and brought the neighboring principalities under their control.

Unlike the Kievan state, the new state of Moscow was agricultural and not commercial. This gave rise to new problems, the greatest being the status of the agriculturist, the later serf, to whose conditions Professor Kluchevsky has given special attention. Conspicuous in the treatment of the rise of Muskovy is the remarkable study (vol. II, ch. VI), of Ivan IV, popularly known in history as Ivan the Terrible, whose extraordinary excesses and cruelties have so fascinated posterity that the real character of the brilliant and warped barbarian is little known. With remarkable insight and power, in vital touch with the world from London to Peking, he not only pushed the Russian territory to the Caspian and created organs of self-government, both local and central, but introduced the printing press, collected a large and valuable library and with a keen literary bent left us a wonderful revelation of himself in his own writings.

Among the topics of the third volume, which has just appeared from the press, is the period of troubles, sometimes called the Interregnum, the election and success of Michael, the change in the political institutions and the centralization of administration, peasant and agrarian conditions, the western influence and the great schism in the Russian church by which is meant "the separation of a large portion of the Russian orthodox community from the Orthodox church." On the agrarian conditions, Professor Kluchevsky writes with especial insight and conviction (chs. IX and X) for here he is on a subject on which he successfully advanced and maintained a theory all his own many years ago. Russian serfdom he claims was an evolutionary product and not all the result of this or that edict. On private lands a gradual decline of peasant or tenant debtors into a condition of servitude took place, while on the state lands the Muscovite system of collective responsibility on taxes worked toward the same end.

The fidelity or rather discrimination of the translator Mr. Hogarth in rendering the original into English has been severely criticized. By way of partial extenuation it should be said that the task of finding exact equivalents in English for the names of institutions unique to Russia is extremely difficult. Nevertheless when western parallels do not exist, it would be better to retain the Russian and explain the exact meaning in a note.

In conclusion, it should be added that a proper appreciation of this work presupposes a fair knowledge of Russian history. It is not altogether a connected story, but rather a series of essays or special studies woven into a history, being first given as lectures to his large student audiences at Moscow.

WM. E. LINGELBACH.

University of Pennsylvania.

KNAUTH, OSWALD W. *The Policy of the United States towards Industrial Monopoly*. Pp. 233. Price, \$2.00. New York: Longmans, Green and Company, 1914.

This monograph is an attempt to interpret, in a purely objective manner, the policy of the federal government towards industrial monopoly. This policy is determined, of course, by three agencies: namely, Congress, the

executive, and the supreme court. The first two chapters outline the policy of Congress, chapter I containing an account of the passage of the Sherman anti-trust act of 1890, and chapter II the history of anti-trust legislation since 1890. Chapter III presents the views and policies of the executives from President Harrison to President Taft, inclusive. The supreme court, however, has done more, our author believes, than the legislative or executive branches in outlining a policy towards monopoly, and, therefore, in chapter IV all the cases bearing upon the trust problem decided by the supreme court are briefly analyzed. It is hardly to be wondered at, in view of such an elaborate program, that the real significance of some of these decisions has not been perceived. For example, in the abstract of *United States v. Reading Company*, et al., the author has missed the main point. The principal contention of the government in this case was that certain railroad and coal companies had entered into a combination general in scope, by means of which they monopolized the anthracite coal trade. The supreme court dismissed this charge, holding the case to be "barren of documentary evidence of solidarity." The supreme court did declare certain minor acts of the combination unlawful, but the combination itself was not dissolved, as the author's account would lead us to believe.

Chapter V well summarizes the earlier chapters. The conclusion is reached "that the government shows no evidence of ever having undertaken seriously a study of the trust problem, such as would be necessary for the formation of a definite and enlightened policy. Broadly speaking, Congress has accomplished nothing of note since the passage of the act of 1890; the executive has been largely impotent; and the supreme court, while displaying a growing, and finally well-nigh complete, grasp of the economic problems involved, has because of limitations inherent in its nature and functions, been unable to cope in a constructive way with the vast problem which confronts the country."

ELIOT JONES.

University of Pennsylvania.

KNEELAND, G. J. *Commercialized Prostitution in New York City*. Pp. xii, 334. Price, \$1.30. New York: The Century Company, 1913.

FLEXNER, ABRAHAM. *Prostitution in Europe*. Pp. ix, 455. Price, \$1.30. New York: The Century Company, 1914.

Some two or three years ago Mr. John D. Rockefeller, Jr., chanced to be chairman of a special grand jury investigating the white slave traffic in New York City. One result of this was the formation by Mr. Rockefeller and a few others of the bureau of social hygiene. The two volumes here referred to are the first publications of that bureau.

Mr. Kneeland approached his task in New York with the experience gained in a similar investigation made in Chicago a few years ago. In this volume we find a complete description of the existing situation in New York City and the relation it bears to the authorities. A large number of narrative accounts taken from actual life are given from the statements of victims of the evil. A

supplementary chapter of the greatest value is added on the study of prostitutes committed from New York City to the State Reformatory for Women at Bedford Hills by Miss Katherine B. Davis, then Superintendent of the reformatory, now commissioner of corrections in New York City. Altogether, the volume forms one of the most valuable studies of this disagreeable but intensely important subject produced in this country. It would be easy to bring certain criticisms to bear. It is obviously impossible for any one investigator to cover the entire field. Mr. Kneeland was therefore obliged to depend upon the reports of many subordinates, some of whom might easily have exaggerated unconsciously the things they saw. This would be particularly true with reference to the conditions existing in the large department stores. As a matter of fact, certain of these stores have rather successfully challenged some of the statements made. Such weaknesses, however, are probably of minor importance, and the information may be accepted as generally reliable.

The second volume by Dr. Flexner furnishes a complete study of European policies and results. Dr. Flexner spent about a year in Europe, another year in working up his material. He traveled from London to Budapest, and was given opportunities to see the details of governmental agencies. He found that everywhere there was admitted failure to secure the hygienic results that had been anticipated by the physical examination of prostitutes. Moreover, in most places he found the laboratory facilities antiquated, and sometimes so meagre that the examination was little more than a farce. He saw that the time given to each patient was too brief to give definite results. Moreover, in contrasting a city like London which does not believe in the continental method they found the situation quite as good and in some results better. Segregation he considers a failure. He found everywhere indications of a progressive policy looking toward the elevation of moral standards and toward the suppression rather than the regulation of prostitution. This material is presented in agreeable and convincing fashion. One is impressed by the size of the problem and the terrific misery it produces. By way of criticism, I might add that one gets the notion that Dr. Flexner had his mind made up in advance as to the things he would find. The tabular arrangement of the book is open to the objection that the material with reference to any one city is scattered throughout the various chapters.

There is today so much sentimental discussion of the evils of sexual immorality that it is very encouraging to find a bureau which is seeking to put forth plain, unvarnished facts and allow them to speak for themselves. The two volumes here considered form a very important contribution to the literature on the subject.

CARL KELSEY.

University of Pennsylvania.

LAIDLER, HARRY W. *Boycotts and the Labor Struggle*. Pp. 488. Price, \$2.00. New York: John Lane Company, 1914.

In view of the fact that bills are at present before Congress expressly exempting labor bodies from the operation of anti-trust laws and placing

restrictions on the issuance of injunctions by the federal courts, this volume on boycotts is especially timely. Nothing is left to be desired in this clear, scholarly and unbiased study. Although mention is made of the practice in other countries, it is essentially a study of the boycott as utilized by labor in the United States. The first part of the book, dealing with the economic side, discusses the early boycotts and the railway cases, with special emphasis on the Pullman strike. It analyzes in detail the Bucks Stove and Range boycott and that in the Danbury Hatters' case.

The legal aspects are considered in the second part: laws and decisions are carefully summarized. The questions of malice, of the law of combination, of illegal means and of illegal ends are considered. The lack of uniformity is noted as well as the growing emphasis on the discussion of the particulars in the individual case. The boycott is but seldom a thing by itself, but is considered in relation to the end sought and the means by which it is sought.

In view of the unfairness of manufacturers and the increasing hostility between the opponents in the labor struggle, the author feels that the time has come when we must recognize this method in the industrial struggle. The fear that greater danger to the community will come if we continue to frown on the boycott, is another reason for the legalization of this method. Of the peaceful methods utilized by labor to accomplish the reasonable ends of raising the standards of wages and of working conditions, the boycott alone is illegal.

The material has been thoroughly covered. The bibliography is suggestive and the list of cases invaluable. The appendix summarizes and digests the important decisions in various jurisdictions. The introduction by Professor Seager is particularly illuminating and suggestive.

ALEXANDER FLEISHER.

Philadelphia.

LLOYD, G. I. H. *The Cutlery Trades: An Historical Essay in the Economics of Small-Scale Production*. Pp. xvi, 493. Price, \$3.50. New York: Longmans, Green and Company, 1913.

Mr. Lloyd's purpose in writing this book was to trace the course of industrial evolution from handicraft to machine industry as exemplified by the cutlery trades of England, since they furnish an excellent example of the continued survival of the characteristic features of the domestic system. He points out the fact that the great alteration in industrial form which we call the industrial revolution must be considered a product of the nineteenth century and not of the eighteenth as is generally stated. It was only in the manufacture of cotton that the change took place so early, and so completely. All other industries have lagged behind, some retaining the chief features of the domestic system even down to the present day. Among these last, the English cutlery group should be ranked. Therefore the book traces the minute history of the cutlery trades. Especial attention is given to the efforts at concentrating the work, and the attempts at combination on the part both of the employees and the employers.

The author has gone so deeply into the details of the development, that the book would be more properly classified under the heading of History than of economics. Such a maze of historical facts is presented, that the reader has difficulty in getting the economic significance of those facts, and the author himself does not clearly point out their import.

For a reader interested in the struggles of early trade unions, there are three excellent chapters full of illustrative material taken from the cutlery group. A chapter comparing the evolution in edge tool manufacture with that in cottons, woollens, linens, ribbons, hosiery, and leather gives weight to the author's contention that the making of knives, saws, and scissors is not alone in long retaining parts of the domestic system, and that the industrial revolution in the great mass of industries has been attained very slowly.

R. MALCOLM KEIR.

University of Pennsylvania.

LYDE, LIONEL W. *The Continent of Europe*. Pp. xv, 446. Price, \$2.00. New York: The Macmillan Company, 1913.

This, the first volume of a new geographical series on the continents of the world, is a comprehensive treatment of the geography of Europe. The author's conception of geography is decidedly one showing relationship between physical features and man, with emphasis on man's response to his environment. Hence, throughout this large volume, the social, political and economic adaptations of man to land and climate are treated in a most suggestive manner. The book may be divided into two parts: the first part, comprising about 80 pages, treats of the continent of Europe as a whole—its world relations; its relief and the control of relief on land communications and distribution of population; its climate and climatic controls of life. The remainder, and much the larger portion of the book, treats of the various political divisions of Europe.

Under the regional treatment of various countries no rigid outline is followed, but in most cases a chapter discusses such topics as geographical position and its significance; physical features and climate with their economic and social responses; agriculture, minerals, water power and industries of the country as a whole, followed by an account of the geographic factors underlying the growth and development of the most important political divisions and cities. It naturally follows from the large number of countries and topics discussed that the treatment is fragmentary in many instances; often broad generalizations are left unsupported by facts or reasons. Clearness is frequently sacrificed to the brevity demanded by the great amount of detail the text contains. Fuller discussion of fewer topics would have added greatly to the value of the book for most readers. On the whole, however, the book well interprets the general facts of Europe's commercial, economic and political conditions in terms of geographic environment.

The book contains twelve colored maps giving physical features together with the important political divisions. Scattered throughout the text are many diagrams and maps in black and white. A complete index is appended.

University of Pennsylvania.

G. B. ROORBACH.

MONROE, PAUL (Ed.) *A Cyclopedia of Education*. (Vol. V.) Pp. xiii, 892. Price, \$5.00. New York: The Macmillan Company, 1913.

With the present volume the *Cyclopedia of Education* is completed, and we are in a position to estimate with some precision what its prospective usefulness is. On the whole, it must be said that the work is an honor to American scholarship and enterprise, especially to the latter, as every one must realize who has ever tried to get other men to do anything important, and to do it on time.

The work has the great advantage of being an initial enterprise. Every article is, to the best of the author's ability and information, fresh and down to date, and not a rehash of former articles by men either too indolent or too old to incorporate recent discoveries or developments.

Aside from the contents, the most valuable feature about the present volume is the *analytical index* for the entire *Cyclopedia*, for not only does this give a comprehensive survey of the whole, but it enables the reader to tell at once the range of articles in each part of the field. Some of the departments most profusely supplied with articles are the following: history of education, philosophy of education, educational psychology, teaching methods, educational administration, elementary and secondary education. The teacher of any one of these departments has at hand a convenient summary and bibliography of each important topic. To illustrate how useful this material may be made, the present writer will indicate how he is using the articles on the history of education. By beginning with an outline of the present educational situation respecting classes of the population to be educated, dominant educational aims, organization of education, the curriculum, didactics, etc., and taking up the history of each in order, the *Cyclopedia* articles fit into the scheme perfectly, for they are written not from any antiquarian interest, but strictly to throw light on the present condition of the matter in hand. Consequently, whichever way one proceeds, the treatment either begins with the present and goes backward, or beginning in the past the destination is always the present. The history "functions," therefore, at every stage of the work, and no longer loses itself in mere academic consideration of the past. Continuity is preserved by constant reference to a good text-book in the history of education. Four sets of the *Cyclopedia*, scattered about the university, suffice to enable the general readers and a class of seventy-five to have convenient access to the volumes at almost any hour of the day or evening. A similar use of the *Cyclopedia* in other departments will be found equally satisfactory.

Lack of space forbids a description of the many interesting and valuable articles contained in the present volume. The writer can not close, however, without expressing his satisfaction with the interpretation that Frederick Montser has given to the doctrines of Rousseau, for he corrects the false or misleading expositions of Davidson, and many others, who regard the two Dijon essays as the basis of Rousseau's ideals of education. Recognition should also be given to Henry Suzzallo's many and excellent contributions. Would it be too much to ask for an index of articles according to authors?

Cornell University.

CHARLES DEGARMO.

REW, R. H. *An Agricultural Faggot*. Pp. x, 187. Price, 5s. London: P. S. King and Son, 1913.

This collection of essays on quite various topics in agriculture is by no means devoid of interest, notwithstanding the fact that only three out of ten papers were written within the present century. As the writer observes in his introduction, the persistence of the problems of agriculture is exemplified by the continued timeliness of certain of his papers written twenty years ago—as the one on agriculture and free trade, and another on the townward migration of laborers.

An American must be impressed by certain contrasts with American methods and points of view. Thus it is argued, in a chapter on the middlemen in agriculture, that it would be more economical for farmers always to slaughter their cattle destined for the London market, instead of sending them alive. It appears that in the nineties the practice of shipping only the carcasses was becoming more frequent. We should probably conclude that, however superior English agriculture may be in many particulars to our own, we are more fortunate in the mechanism for disposing of products—at any rate as regards live stock. Thus it appears that the English farmer (unless there has been a change) has no means of knowing the prevalent price of cattle, because there are no quotations having the approximate correctness of the reports for our central markets, and it seems quite astonishing to find a discussion of the question whether the weight of cattle should be determined by the use of scales or estimated from measurements of the animal's back-bone and girth.

In the introduction it appears that after twenty-five years of discussion the old method survives.

Mr. Rew is assistant secretary to the Board of Agriculture. In addition to subjects just mentioned he discusses farming in olden times, English markets and fairs, the nation's food supply, British and English agriculture.

A. P. WINSTON.

Pearre, Md.

RUBINOW, I. M. *Social Insurance*. Pp. vii, 525. Price, \$3.00. New York: Henry Holt and Company, 1913.

Summarizing the causes of poverty as "(1) absence of a worker in the family; (2) physical inability to perform labor, because of illness, accidental injury, chronic invalidity, or the physical deterioration accompanying old age, and finally, (3) inability to find employment" (p. 8), Dr. Rubinow examines the ways by which these factors may be met by insurance. He points out that the individualism, which insists that each person arrange for the carrying of this burden, is not only unusual, but practically impossible. That there is need for a comprehensive scheme is clearly demonstrated.

This study is in five parts—introduction, insurance against industrial accidents, insurance against sickness, insurance against old age, invalidity and death, and insurance against unemployment. The introduction contains the concept of social insurance, the development of the movement in Europe, and the need of such insurance in the United States. Under the last heading

it is shown that, although the wage-earner may be able to maintain a standard of life adequate for efficiency, it is impossible for him to lay aside enough to meet emergencies.

Almost one-third of the book is devoted to the subject of industrial accidents. This is permissible, in view of the fact that nearly one-half of the states have undertaken to relieve the worker from the harmful results of such accidents. The analysis of the number and causes of industrial accidents is probably the best short statement of this problem yet made. The legislation in America, as well as in foreign countries, is summarized, carefully examined, and constructively criticized. It is shown that the problem of developing a system of sufficient and reasonable care for those injured in modern industry is being rapidly met; the questions to be solved are those of means, rather than of end.

Basing his estimates upon figures from countries that have sickness insurance, Dr. Rubinow concludes that ill health causes an economic loss of over \$650,000,000 each year. This affects between 40 and 50 per cent of the wage-earners. Since it does not seem reasonable or advisable to have this loss fall on the individual worker, the author finds the solution in distributing the burden of the loss. Some scheme of insurance must be adopted, as, without it, the efficiency of the entire family is reduced. Again the European results are summarized.

The factory worker, whose working life has been shortened by the stress of modern industry, can be satisfactorily protected only by invalidity insurance. His wages do not amply meet this emergency, and it is unreasonable to insist that the old must rely upon outdoor relief. Compulsory provision for the future is the only practicable answer. Here also must be considered the provision in case of the untimely death of the wage-earner. This should take the form of life insurance, rather than that of pensions for widows and children.

In the last part of the book, the experiences of various states and countries, in their attempts to solve the problems of unemployment, are discussed. This is a comparatively virgin field, and a discussion of results is premature.

The final chapter is devoted to a summary and a refutation of the usual arguments advanced against social insurance. The author feels that there are serious problems naturally developing from modern civilization and modern industry that can be met only by the means that he suggests.

This study is a valuable contribution to the subject of social insurance. With the present growing interest in these subjects, there will be an increasing demand for this clear, systematic presentation of both problems and solutions.

ALEXANDER FLEISHER

Philadelphia.

RUSSELL, JOHN H. *The Free Negro in Virginia, 1619-1865.* Pp. viii, 194. Price \$1.00. Baltimore: The Johns Hopkins Press, 1913.

This monograph is a first-hand study, largely from legal documents. In 1782, when restrictions on emancipation were removed, free Negroes numbered

about 2800, increasing rapidly until 1806 when a legislative act prescribed banishment for manumitted slaves. They continued to increase, though less rapidly, until 1860, numbering 36,875 in 1820, about one-third of the total population, 49,841 in 1840 and 58,042 in 1860, constituting in both of the latter years less than one-third of the total population. About two-thirds of the entire free Negro population was distributed in the tide-water section of the state. In a number of counties of this section from one-sixth to one-half of the colored population was free.

The free Negro class, as shown in chapter II, originated from the importation of indentured black servants before 1662, from children of free colored parents, mulattoes of free colored mothers, mulattoes of white servants and of free women, children of free Negro and Indian parentage, and from manumitted slaves. Chapter III gives a good account of manumission, which came by (1) acts of the legislature, (2) by last will and testament, and (3) by deed. Slavery in the seventeenth century was regarded only as service for life; the slave was a person, not a thing or chattel as he later became. The revolutionary doctrine of natural liberty was applied by individual masters giving freedom to their slaves. However, "rather by changes in sentiment than by changes in laws," the chances of manumission dwindled from about ten in a hundred, 1782 to 1800, to about four or five in a hundred, 1800 to 1832, and to about two in a hundred after 1832.

The legal status of the free Negro, chapter LV, shows that from the beginning he had the right to hold and alienate property and that the courts preserved this right down to 1865, except that ownership of weapons was generally forbidden. Free Negroes could own slaves; and could hold indentured white servants before 1670; many prevented deportation of relatives and friends by owning them.

A very grievous burden upon the liberty of the free Negro was the necessity of proving his freedom if anyone disputed it, contrary as this was to the legal principle which presumes a man innocent until proven guilty. The burden of proof was on the claimant in case of a white man or Indian whose freedom was questioned. After 1793, legal restrictions on freedom of movement from place to place were increasingly burdensome. The right of regular court trial was accorded during most of the period, although no Negro could bring action or bear witness against a white man.

Military service was required in all cases including confederate service in the Civil War. At times there was discrimination in poll-taxes, but other taxes, so far as the law said, were the same for Negro and white man. Prior to 1723 the Negro could vote. After that date he enjoyed less and less of the "privileges and immunities of citizens of the several states" as guaranteed by the federal constitution.

Chapter V on the social status of the free Negro records restrictions on account of color prejudice from the beginning. Before 1723, these were limited to measures against racial intermixture with the whites, as business, political and other relations were maintained. There was considerable intermingling with the Indians and with slaves. Legal forms and ceremonies were usually

observed in all marriages. In the earlier decades there was no objection to free Negroes being taught to read and write, but after the Gabriel insurrection of 1800 and that of Nat Turner in 1832 the right of educating their children and of assembling together were curtailed almost to prohibition. Yet, free Negroes not only were not behind these insurrections but were instrumental in reporting and thus frustrating many plots of slaves.

The economic opportunities through small jobs, skilled and unskilled, in the towns and cities, were good for the free Negroes, who displaced white laborers by their acceptance of lower wages and their docility. They were the main dependence in most skilled manual labor, and the deportation acts of the legislature largely failed of execution because of the demand for their services. As to character, the antebellum free Negro was probably no more thievish than slaves; was not so criminal in capacity or tendency as he was believed to be. The charge that he incited slaves to rebellion was unfounded and his laziness and improvidence were probably less than might have been expected under his restricted circumstances. There were numerous remarkable examples of thrift, economy and integrity.

The monograph shows signs of thoroughness, contains a good bibliography of sources and shows a balance of judgment worthy of imitation in more pretentious works on the Negro.

GEORGE EDMUND HAYNES.

Fisk University.

SULLIVAN, J. W. *Markets for the People: The Consumer's Part.* Pp. viii, 316. Price, \$1.25. New York: The Macmillan Company, 1913.

Mr. Sullivan's interest in markets, he tells us in the introductory chapter, dates from his services on the commission on public utilities appointed by the National Civic Federation. While traveling for a year or more in America and Great Britain, as labor investigator for the commission, he gathered such data relative to the markets as a casual observer might. Later, on two different trips through the continent, he continued his observations and studies. Then for several years, while he was assistant editor with Mr. Gompers, the rising discussion of the cost of living brought to the editorial offices in Washington a stream of printed matter on the subject, all of which Mr. Sullivan was called upon to digest. Again, in 1912, he went to Europe with the special object of studying markets in Switzerland, and he made inquiries also as to the market systems of Paris, London and Berlin.

Among the more interesting and suggestive conclusions reached by the author are the following: (1) Great public markets are uncertain investments for cities at the present time. In support of this conclusion he cites the transition in several forms of the marketing situation of the day, such as the changes brought by subway and tunnel in methods of distribution of produce by freight, the possibility of transportation companies so improving their market yards and piers as to take away trade from public wholesale markets. (2) He objects to the terminal market plan, such as has been advocated by Hon. Cyrus C. Miller and others of New York City, on the grounds that it

would be impossible to force New York's scattered business of wholesale marketing into public markets, and because the tendency in metropolitan cities is dissemination and not concentration of sales of produce in bulk. (3) He concludes that a saving of 20 per cent to the consumer of moderate means can be brought about through developing to the fullest extent the legitimate trade of the pushcart. As to the quality of the stock sold by the pushcart peddlers, he quotes from a report, published on March 26, 1913, issued by the commission appointed by Mayor Gaynor to investigate street venders. The report of the commission was corroborated by the aldermanic committee's report on the same subject published the following month. The commission says: "It has been found that the foodstuffs sold by the peddlers are nearly uniformly wholesome. These and other commodities are sold at a considerably less cost than obtained in stores." The aldermanic committee's report he quotes as follows: "The quality of food and merchandise sold from these pushcarts is in the main of as good a quality as can be bought anywhere else in the city, and much cheaper." He discusses the phenomenal success of pushcart markets in European cities, especially those in Paris, Berlin and London. (4) His fourth significant conclusion is that the open air market is worthy of greater public effort. The open air market, like street vending, has been opposed in many American cities by boards of health and others on the ground that there is not ample protection of foods from dust and unwholesomeness. Mr. Sullivan urges that these objections can be largely overcome. He points out that European cities have succeeded in giving ample protection to their open-air markets. The open-air markets in European cities have thrived whereas the closed retail markets have been less successful. Twelve of the 30 open-air markets in Paris are held three times a week while 18 are held twice a week. There are over 17,000 standing applications for places in the market. In the 30 markets there are now 6,296 stands, 2,600 of which are fruit and vegetable, 402 fish, 430 cheese and eggs, 77 bread, 540 meat, 308 delicatessen, 991 manufactured merchandise. The number of venders using these stands probably totals more than 15,000. This is in the Paris market alone. He avers that a similar development in American cities would most definitely decrease food costs to the consumer.

CLYDE LYNDON KING.

University of Pennsylvania.

USHER, ABBOTT P. *The History of the Grain Trade in France, 1400-1710*. Pp. xv, 405. Price, \$2.00. Cambridge: Harvard University Press, 1913.

It is unfortunate that Mr. Usher has published his book without more fully mastering his material. One is not reassured to read in the appendix upon bibliography [the brevity of which he explains by the rather arbitrary statement that "a complete list of the sources would be too voluminous in extent and too general in character to be of any assistance"] that "the quantity of material that was available forced me to limit my work to what may be called the Parisian and Lyonese manuscripts. . . . It was impossible to examine this material thoroughly. . . . A few days' work was

done in the municipal archives at Dijon. . . . In the time available it was possible to examine only such material as lay on the surface." The very title of the book is misleading, for the history of the subject before the time of Colbert is superficially treated. Moreover, not France as a whole, as implied in the title, but only certain areas of the country have been examined, i.e., the basin of the Seine and its affluents, the Lyonnais and Burgundy. Languedoc and Provence are scarcely noticed before the end of the seventeenth century. The first chapter, upon markets and market organization, is written from data pertaining to the reign of Louis XIV. Partial amend for this neglect of earlier material pertaining to market organization is made in chapter II upon the history of the Parisian market. Yet here only eight pages are given to the grain trade before 1520. Since Mr. Usher chose to begin with Philip IV, he ought to have written something more than the flabby paragraph on pp. 47-48. The important ordonnance of July 8, 1315, sec. 94, is not even mentioned. The five pages, 48-53, devoted to the grain trade of the fourteenth and fifteenth centuries are introduced by a complaint regarding "paucity of information." Yet the *Journal d'un bourgeois de Paris* is filled with information. For prices, see pp. 11, 120, 130, 136, 148, 234, 262, 288, etc.; for abundance of grain, pp. 11, 154, 175, 218, 227, 295, 300, etc.; for scarcity, pp. 120, 122, 136, 145, 148, 262, 291, etc. See also Flammermont: *Histoire de Senlis pendant la guerre de cent ans*, pp. 64, 73-74, 77-78. Mr. Usher is advised to examine the volumes of the *Ordonnances* with more care, e.g. XII, 304-5; XIV, 369; XIX, 30, 86, 88, etc. When the English wars in France ended prosperity returned. But there is no treatment of the agricultural recovery during the last half of the fifteenth century. What effect did the widened area of wheat cultivation have upon the grain trade? Mr. Usher will find food for thought in Imbart de la Tour: *Les origines de la reforme*, pp. 222-223, and the notes may suggest future sources of research. The history of the grain trade in the sixteenth century is more fully written, yet much of interest—not to say of importance—has here also escaped the author's observation. The account of the legislation of Francis I, on pp. 228-229 is confused, and misleading. The decree of February 3, 1535, was a confirmation of the ordonnance of February 20, 1534, which Mr. Usher has missed. (See Fontanon III, 92; Isambert, XII, 403.) He quotes the opening words of the ordonnance of June 20, 1539, providing for free interprovincial grain traffic and remarks: "[They] lead us to suppose that there had been previous edicts, but the reference is doubtless to the special letters patent issued to various governors." The important fact that internal free trade in grain actually was authorized by edict in 1534 he has failed to perceive.

The paragraph on p. 236 is much too brief. No allusion is made to the edict of 1583 authorizing the free transportation of grain between the provinces, certainly an important act even if only temporary; and surely the drastic commandeering of grain by the government to withstand the siege of Paris in the second civil war ought not to have been passed over. In a book which professes to be an historical treatment it is curious to see how large an amount of data pertaining to the subject has been ignored, as for instance, the increase or decrease in area of wheat cultivation, the bearing of good harvests and

poor crops, the fall in land values as an aristocracy of gentlemen farmers inclined to become a court nobility, and the consequent acquisition of land by the peasantry. If Mr. Usher can divorce phenomena like these from the history of the grain trade he has a narrow view of the subject. It were well for him to examine the journal of Claude Haton, the parish priest in Provins, and the Abbé Denis' studies in the history of agriculture in the department of the Seine and Marne [Meaux, 1881].

Mr. Usher quotes Article 419 of the great ordonnance of 1629 [Code Michaud] without comment and ignores entirely Articles 420-426. He cites by date ten ordonnances between 1625 and 1655 without analysis and dismisses the subject thus: "This barren review of Letters Patent and edicts can hardly have failed to weary the reader. The royal attempts have so little connection with the real problems of the sixteenth [*sic*] century trade that the study of the royal policy is without interest except for the antiquarian." It were charity to forbear criticism of this puerile statement. If historical interest in the economic legislation of the French monarchy over a generation of time be mere antiquarianism, then I, for one, would rather be a doorkeeper in the house of the antiquary than to dwell in the house of an historian who fails to see aught of interest in these edicts.

It is an unpalatable task to review a book adversely. But it is the reluctant opinion of the reviewer that only the latter part of this work can be regarded as remotely satisfactory. Even there the limitations are glaring. As a whole the work is an amorphous combination of ill-digested material. Its publication ought to have been withheld until the subject had been more thoroughly studied and better composed, for the arrangement of material seems as eccentric as the treatment of it. It is a canon of historical composition that historical data in time and place must be set forth clearly in the presentation of the subject. Arrangement is for the historian what perspective is for the artist. Finally, the author's observations sometimes baffle understanding. What, for example, does this cryptic sentence on p. 48 mean? "The marked institutional advance of the later thirteenth century was a crisis, which was followed in the grain trade, as in other matters, by a period of relative stagnation."

JAMES WESTFALL THOMPSON.

University of Chicago.

WARREN, G. F. *Farm Management*. Pp. xviii, 590. Price, \$1.75. New York: The Macmillan Company, 1913.

A student of economics is likely to treat with respect a book which frequently applies the recognized principles of economic science to the broader problems of the farmer.

We find here for example our old familiar principle, the regulation of prices by costs. "There do not appear to be any types of farming that are regularly more profitable than other types, provided each type is conducted where it belongs. . . . If some one thing is paying abnormal profits, it will soon be at the bottom of the list because of over-production" (p. 152). The failure to understand this results in periodic over-production and under-

production. In apple-raising, prices were high forty years ago, then they dropped until about twenty years ago; now they are excessively high and the back-to-the-land enthusiast, now eager to invest in orchards, may probably be punished for neglecting the Ricardian economics by an over-production about 1920 to 1925 (p. 85).

Under that same principle we are assured that the present high price of food will tend to correct itself through stimulating production. "There may be some danger that we shall keep too many boys on the farm and again have an over-production."

The law of comparative costs, or comparative advantage, is admirably illustrated in a discussion of transportation as affecting prices and the localization of various products (p. 52 and *seq.*). "A ton of hay in Massachusetts will buy 25 bushels of corn; in Iowa it would buy only 18 bushels. . . . It is easy to see why the New England farmer comes so near the one-crop system." "Illinois produces more corn than Iowa but has only about half as many hogs," because, while the cost of transporting either corn or pork from Iowa is greater than from Illinois, the disadvantage of the Iowa farmer is greater as to corn.

On other points, as the relative advantages of large and small scale production, the teacher of economics or the theoretician may find here valuable materials, and no other work that I have seen offers in as few pages more information that seems serviceable to a farmer.

As to minor points, "data" (p. 178) is still plural, notwithstanding constant efforts to reduce it to the singular number; the definition of "intensive" systems of farming as those "that call for very intensive working of the land" is an undesirable proposition but is not very illuminating and certainly is not a definition.

A. P. WINSTON.

Pearre, Md.

WHELPLEY, JAMES D. *The Trade of the World*. Pp. 436. Price, \$2.00. New York: The Century Company, 1913.

As is stated by Mr. Whelpley, "In this volume no pretense is made of discussing the subject fully or finally, nor is it possible to particularize concerning more than a few of the most important or typical countries whose tradings go to make up the enormous total." The countries which he selected for study and discussion are Great Britain, Germany, France, Belgium, Austria-Hungary, Italy, Northern Africa, Japan, China, Russia, Argentina, Canada and the United States. The discussion of trade conditions in these countries, the special importance of which is recognized in the world's commerce of the future, is presented in an unusually interesting style. The author had the advantage of first-hand information derived from extensive travel in the countries which he discusses.

The description of the commerce of Great Britain, Germany, Japan and China, although it makes no pretense of completeness, is especially replete with impressions gained after personal study. The chapter dealing with the trade of the United States is from the standpoint of completeness perhaps the

least satisfactory of any. It is interesting, however, in that it draws certain contrasts between American and European trade methods and governmental policies. Mr. Whelpley regrets the fact that American diplomacy has done relatively so little for American trade. "In the general scramble for selfish advantage it (American diplomacy) has taken little or no successful part. And yet American diplomacy has been called that of the 'dollar,' and has been credited in the minds of many of her own citizens, as well as by foreigners with a mercenary basis. . . . 'Dollar diplomacy' did not originate in the United States, nor has it ever obtained such development there as it has in other countries."

GROVER G. HUEBNER.

University of Pennsylvania.

WINSTANLEY, D. A. *Lord Chatham and the Whig Opposition*. Pp. ix, 460. Price, 7/6 net. New York: G. P. Putnam's Sons.

The successful attempt of George III to establish the personal influence of the crown has been described in a copious literature. Nevertheless our knowledge of the means used by this king to attain his end has remained lamentably inadequate. Mr. Winstanley has already done much in an earlier study, *Personal and Party Government*, to supply this defect, and he now makes a second and even more substantial contribution. In the present monograph he deals with the struggle between the whig factions and the crown in the eventful years from 1766 to 1771. The interaction of conflicting principles and personalities, which kept the whig groups apart during this period, despite several nearly successful attempts to unite against the court, created a political situation of singular complexity. This is analyzed with great clearness; and a mass of detail, which might easily have been rendered tedious, is constructed into an interesting narrative.

To indicate the scope of Mr. Winstanley's contribution briefly is difficult, because it is by nature so largely supplementary. The attitude of the whig leaders towards one another, towards the king, and towards the policies of the period is illumined at innumerable points by evidence derived largely from the Newcastle and Hardwicke manuscripts and the Pitt papers. Especially noteworthy in this respect is the treatment accorded the relations between the Rockingham group and Chatham during the summer of 1766, the part played by the American question in keeping Rockingham estranged from Grenville, the negotiations between the king and Charles Yorke, and the dispute with Spain over the Falkland Islands and its effect on the party situation. Character sketches of leading statesmen are numerous and almost uniformly well and impartially drawn. Chatham is not perhaps the central figure that one might anticipate from the title, but many interesting side-lights are cast here and there on the great statesman's personality and aims. In short, the book is a mine of new material.

Whoever is interested in the personalities of the politicians or in the important political and constitutional developments of the early years of the reign of George III is likely to derive both pleasure and profit from a perusal of Mr. Winstanley's pages.

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W. E. LUNT.



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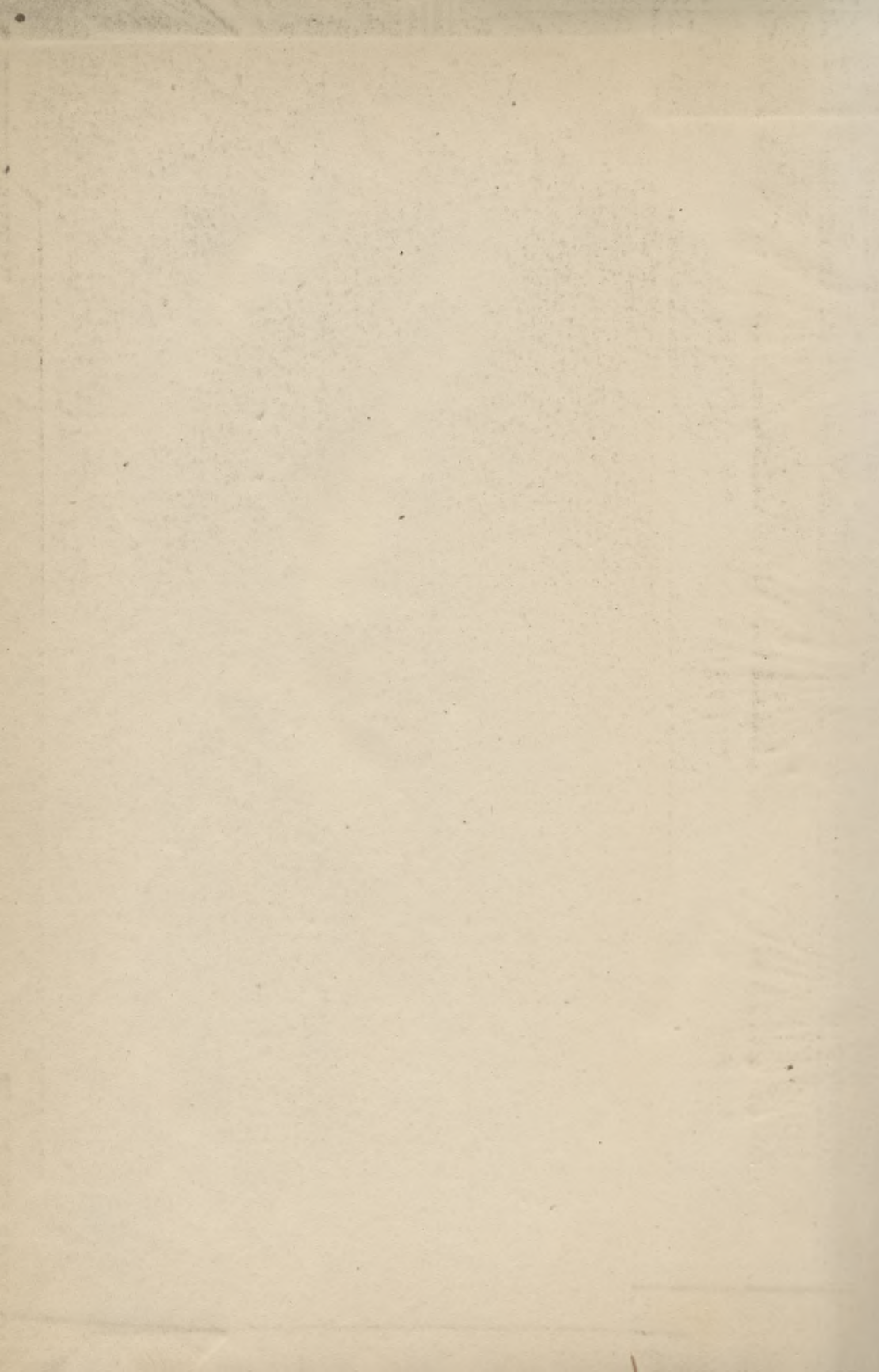
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