IOWA APPLIED HISTORY SERIES

EDITED BY BENJAMIN F. SHAMBAUGH

VOLUME I NUMBER 3

Regulation of Urban Utilities in Iowa

BY

E. H. DOWNEY

RINTED FROM VOLUME ONE OF THE IOWA
IED HISTORY SERIES PUBLISHED AT IOWA CITY
2 BY THE STATE HISTORICAL SOCIETY OF IOWA

URBAN UTILITIES IN IOWA

IOWA APPLIED HISTORY SERIES

EDITED BY BENJAMIN F. SHAMBAUGH

REGULATION OF URBAN UTILITIES IN IOWA

BY

E. H. DOWNEY

PUBLISHED AT IOWA CITY IOWA IN 1912 BY
THE STATE HISTORICAL SOCIETY OF IOWA


THE
CLIO
PRESS
IOWA
CITY
IOWA

EDITOR'S INTRODUCTION

THE following paper on the *Regulation of Urban Utilities in Iowa* is the result of a preliminary study, by Mr. E. H. Downey, in *The History of Urban Utilities in Iowa* which has been planned by The State Historical Society of Iowa as a part of a more comprehensive history of municipal government and administration in this State. Since the larger work will not be completed for some time it has seemed advisable to publish this preliminary study as a contribution to the *Iowa Applied History Series* at this time. The sources of information upon which the author has relied will be found in the notes and references following the text.

BENJ. F. SHAMBAUGH

OFFICE OF THE SUPERINTENDENT AND EDITOR
THE STATE HISTORICAL SOCIETY OF IOWA
IOWA CITY 1912

AUTHOR'S PREFACE

As the title clearly indicates, this paper on *Regulation of Urban Utilities in Iowa* professes to be no more than a preliminary study of a very large subject. Neither the time nor the means were available for an exhaustive investigation of the history of urban utilities in Iowa or for personal visits to all of the States operating under public utility commissions. A statement of the studies actually made by the writer will perhaps sufficiently indicate the scope and the limitations of this investigation.

In the first place, the public utility statutes of seventeen States were carefully analyzed and compared. Secondly, the actual working of this legislation was studied from the reports and decisions of the commissions of Massachusetts, New York, and Wisconsin, and from numerous articles in "The Quarterly Journal of Economics", "The Political Science Quarterly", "The American Political Science Review", "The Annals of the American Academy of Political and Social Science", "Municipal Affairs", "The American Municipal Review", "The Proceedings of the Conference for Good City Government", and various technical periodicals. Thirdly, the statutes, legislative documents, and court reports of Iowa were searched for public utility acts, bills, and decisions. Fourthly, questionnaires were sent

to the municipal officers of every Iowa city of five thousand or more inhabitants, and to the managers of twenty-five local utilities. Fifthly, correspondence and personal interviews were had with leading exponents of various shades of opinion. Sixthly, the writer visited the newly-created Public Utilities Commission of Ohio in the spring of 1912 and later spent a week in the offices of the Railroad Commission of Wisconsin.

Conclusions based upon studies such as the foregoing are necessarily tentative. Fortunately, however, there is a mass of recorded experience in urban utility control and a well-established body of expert opinion on the subject which are readily available and which are believed to justify all the conclusions reached in this paper.

The writer's thanks are due first of all to Professor Benj. F. Shambaugh, Superintendent of The State Historical Society of Iowa, who has given close and constant supervision to this study, and to whose counsel it owes much of whatever merit it may possess. Commissioners Erickson and Roemer, Dr. Margaret Schaffner, and Professor William Pence of the Railroad Commission of Wisconsin gave generously of their time in explaining the work of the Commission. Mayor Hanna of Des Moines kindly detailed the interesting history of the public utility litigation of that city. Information was received from many other persons, but the list is too long to enumerate in this connection.

E. H. Downey

The University of Wisconsin
Madison Wisconsin

CONTENTS

I

THE NEED OF REGULATING URBAN UTILITIES

Among the problems presented by the urbanization of modern life few are more urgent, or more difficult, than the social control of public service industries. Water supply, local transportation, telephones, gas, and electricity have become necessities of life wherever civilized men congregate in considerable numbers. These particular services, moreover, possess two special characteristics which set them apart from others that are no less indispensable. The public service industries, commonly so-called, partake largely of a commercial character and they inevitably tend to monopoly. By reason of the first-mentioned feature these industries do not readily lend themselves to public undertaking; and because of the second they can not safely be left to unregulated private enterprise.

The services usually classed as public utilities are commercial in that their supply to private citizens answers an individual rather than a collective need.[1] In this respect the quasi-public services are clearly distinguishable from those protective and developmental functions which every civilized government performs as a matter of course. Police protection, military defense, and the administration of justice are provided by the state because they are essential to the existence of organized society. Education is made free and compulsory because

the community can not safely allow its children to grow up in ignorance. But there are no such cogent reasons for the gratuitous supply or compulsory use of street railways or electric lights. Current opinion holds that these and like conveniences can not justly be provided from the public revenue, but that they ought rather to be paid for by the users thereof. Being of this commercial character such services may be furnished by the community in its corporate capacity or they may be committed to private enterprise as may be most convenient in any given case.

The plan of the present paper does not require a consideration of municipal *versus* private ownership and operation of public service industries. Nor is any presumption implied for or against either of these policies.[2] It is, however, pertinent to note the special difficulties which beset municipal undertakings in this field.

In a city of any magnitude the public service industries are large commercial enterprises, involving heavy initial investment, large outlays for upkeep and operation, huge purchases of labor and supplies, and much acumen in acquiring business. For, though monopolies, their market is not automatic. The telephone habit requires cultivation. The public must be taught to use gas for heat and electricity for cooking. Amusement parks and residence suburbs must be developed as feeders for the traction system. Business firms must be induced to buy light, water, and power which they might produce for themselves. Unless wide consumption is in this way secured, the economies of large-scale operation can not be realized. Thus, as concerns production and sale, the problems of public utility management are not different in kind, though they may differ in degree, from

those which confront the manufacturer of, say, a patented article.

To the business problems of local utility operation remain to be added those of a technical character. With the exception of sewer and water systems, all the industries in question are of recent origin and, consequently, subject to rapid change. Within a generation horses have given way to cables, and these in turn to electricity, as the motive power of street railways. Within a decade "central energy" has displaced the dry-battery telephone; the "flash-light" has supplanted the "drop" switch board; and now the "automatic" threatens to supersede the costly central exchange. In electric generation and transmission the rate of obsolescence is so rapid that the inventor's triumphs of ten years ago are now museum exhibits. No businesses, probably, are more immediately or more profoundly affected by the progress of invention. None call for greater alertness or greater courage in discarding antiquated equipment.

It must be conceded, therefore, that the management of local utilities calls for business and technical abilities of a high order. Unless the city can secure intelligence and continuity in supervision, expert service in the engineering, accounting, and sales departments, and administration throughout with an eye single to economy and efficiency, its success in this line is not likely to be notable.[3] Few American communities are able to meet these requirements. The manager of a public plant is seldom selected for fitness solely; and still more rarely is he given a free hand. Political appointments, padded pay rolls, purchases from aldermanic favorites, and peculation in many forms have all too frequently marked the municipal conduct of commercial enterprises.[4] Mis-

management, if not actual corruption, has brought to grief most large undertakings of this character in the United States.[5]

The disheartening failure of some important experiments has united with the inherent difficulties of such undertakings to hinder the municipalization of industrial utilities in this country. In 1899 no American city owned a telephone system, and but one operated a street railway. Only 193 cities of 3000 or more inhabitants possessed municipal electric plants, whereas 1190 were served by private concerns. Public undertakings supplied gas to 20 such cities, private enterprise served 956. Moreover, such municipal operation as existed in these industries was confined almost entirely to the smaller places. But four electric and three gas systems were conducted by cities of more than 30,000 population.[6]

The exceptions to the rule of private operation are water and sewer systems. These undertakings demand less of technical expertness and business judgment than most public utilities, and the physical operations concerned are relatively simple. The plant is comparatively very durable, and the rate of obsolescence exceptionally low. At the same time these services have long been recognized as appropriate governmental functions. An abundant supply of pure water very vitally concerns the public health. Sewage removal must be compulsory; and for that very reason it ought to be free, in the interest of public sanitation. There is, accordingly, a strong tendency toward the taking over of these utilities by city governments. Out of 1087 sewer systems reported by American cities in 1899 but 42 were in private hands, and of 1427 urban water works 766 were municipal enterprises.[7]

It is probable that municipalization of quasi-public utilities has made some progress in the United States since the last year for which reliable data is available. Nevertheless, the more costly and complex utilities almost universally remain private enterprises. Moreover, this condition bids fair to continue for years to come. Neither in the present nor in the immediate future is social control of these industries likely to be secured through public ownership and operation.

On the other hand, competition can not be relied on as a regulator of urban utilities. The physical limitations under which these businesses are carried on, the exceptional economies of unified operation, and the peculiarly disastrous effects of competition therein are such as to make monopoly well-nigh unavoidable. That quasi-public services are thus "naturally" monopolistic is something of an economic commonplace.[8] Inasmuch, however, as this fact has hitherto not been squarely faced by the people of Iowa, it seems worth while to make a more detailed examination than would otherwise be justifiable of the conditions which make for monopoly in this field.

In the first place, the necessity of permanent structures in, or under, the public highways imposes an insuperable obstacle to "free competition" in urban utilities. Obviously it is out of the question to operate rival surface railways upon the same street. Nor can the city permit an indefinite number of private corporations to tear up pavements at their own convenience for the installation and repair of pipes and conduits. Parallel lines on separate streets are, to be sure, physically possible — but division of territory is not competition.

Such partial overlapping of each other's area is the utmost that can ordinarily be expected from competing public service companies.

In the second place, were unlimited replication of plant practicable the sheer economic wastefulness of such a proceeding is prohibitive. Dual telephone service requires twice the number of instruments, wires, poles, and central stations that would be needed for the same number of connections on a single system. Two gas companies in the same territory mean two sets of mains and service pipes where one would answer every useful purpose. Doubtless waste of a similar kind occurs in all competitive businesses. But in public service industries the evil is immensely aggravated by two circumstances not encountered in ordinary businesses: first, *each* competitor is obliged to provide a distributing system sufficient for the *entire* demand of the territory served; and second, the cost of such a system is enormous.

Even where the rival concerns serve different patrons in distinct areas, thus avoiding physical duplication (and, incidentally, competition as well) there remain large sources of waste in the mere division of operations. Assuming the same aggregate of business, the expenses of management, engineering, experimentation, and advertising are far greater for several companies than for one. The purely industrial costs, per unit of product or service, are likewise greater for a small than for a large producer. Indeed, the unification even of complementary utilities is usually advantageous. The consolidation of a street railway and an electric light and power company, for example, not only affects a saving in overhead charges, but makes possible a better utilization of equipment. For, if the concerns are separately operated,

each must stand ready to supply the maximum demand of its patrons. Since, however, the two "peaks" do not coincide, a smaller aggregate plant, operated as a unit, will meet the composite demand.

Throughout the field of public utilities, therefore, combination is economical, and competition wasteful. If any community insists upon multiple service, either investors must forego the accustomed return on capital, or consumers must pay for needless plant and equipment, needless managers and experts, and needlessly uneconomic operation.

Finally, competition, when it does occur between public service companies, is apt to be of the cut-throat variety. The advantages of unification being so overwhelming, each competitor strives to drive out or absorb the others so as to have the whole field to itself. Moreover, as already explained, each company must have a capacity, at least as regards its distributing system, substantially equal to the aggregate demand upon all the companies. Since interest charges upon this excess plant must be met in any case, additional business adds less than proportionately to operating expenses. Hence the scramble for sales and the acceptance of new business at low rates. The temptation to price reduction arising from these two causes is fairly irresistible.

The consumers' paradise thus inaugurated seldom lasts long. A period of price cutting and plant duplication is wont to be followed by consolidation, liberal stock watering, and rates so high as not only to recoup the losses of former years but to pay dividends on a mass of hydraulic capitalization.[9] Not infrequently, indeed, the aftermath of irrigated securities and excessive charges is inflicted on the public without the antecedent era of

low prices. For competition is not always undertaken in good faith. Many a franchise is secured solely with a view to "sandbagging" some prosperous corporation, and for this purpose the mere power to compete often suffices.[10] Whether bogus or *bona fide*, however, the final result of competition in public utilities is always the same: the last state of the community which so seeks to cast out monopoly is worse than its first.[11]

The point may perhaps be made clearer by concrete illustration. La Crosse, Wisconsin, had a single gas lighting system from 1856 to 1881, when a Brush electric plant was erected. Six years later an Edison company was chartered. The three concerns were operated independently for a time, but were united by a "community of interests" after 1897, and at length, in 1901, were merged in the La Crosse Gas and Electric Company. Alarmed by the threatened cessation of competition, a group of local business men forthwith organized a third company and inaugurated a campaign of price cutting. The losses of the first year brought the citizens' enterprise to grief, and its plant was leased to its stronger rival. Still undismayed, public spirited residents incorporated the Wisconsin Light and Power Company, sank $350,000 in another superfluous plant and ended by selling out to the La Cross Gas and Electric Company. The net results of this super-abundant competition are: (1) a complete lighting monopoly; (2) four disjointed generating plants, so badly located and ill-equipped that substantially all of the current used is bought from an outside company; (3) an incumbrance of $1,732,000 upon property that could be duplicated for $700,000 and is worth still less as a going concern; and (4) poor service at high rates which yield inadequate returns to the investors.[12]

To cite an instance on a much larger scale, the good people of Boston, some thirty years ago, resolved to secure cheaper gas by means of competitive bidding. In furtherance of this laudable design, they welcomed to their midst one J. Edward Addicks, him who afterward so persistently aspired to a seat in the United States Senate. Mr. Addicks incorporated himself as the Bay State Gas Company (of Delaware) and also as the Beacon Construction Company (of Pennsylvania), had the gas company pay the construction company, in cash and notes, $5,000,000 for a plant worth $700,000, sold enough construction company stock to replace his actual outlay without endangering his control of the properties, and then proceeded — not, as the confiding public had expected, to supply the city with water gas — but to absorb the existing coal gas companies on terms highly advantageous to himself.[13] A subsequent attempt at competition, backed by the eminent financiers of the Standard Oil Company, ended in a similar fiasco — the acquisition of operating companies by a holding corporation and a plentiful issue of baseless securities.[14]

These experiences are typical. Nearly every large city in the country has, at one time or another, made costly experiments with competition in the supply of public services.[15] No such attempt has succeeded hitherto nor is there much prospect of future success in this line of endeavor.

But if competition is impracticable, unregulated monopoly is not to be thought of. As waste is the outstanding characteristic of competition in the public utility field, so extortionate prices, excessive capitalization, inadequate service, and discrimination as between con-

sumers are the fruits of unrestrained monopoly. These evils are too well known to require detailed exposition. Yet, since it is just these abuses that have made governmental regulation of municipal monopolies necessary, and since it is by its success or failure in coping therewith that any regulative system is primarily to be judged, a brief inquiry into the nature and causes of these malpractices will here be undertaken.

EXCESSIVE CHARGES

Little need be said of the danger of extortionate charges. Public utility corporations control necessities for which there are no convenient substitutes and the price of which is limited only by what the public will pay rather than go without. To be sure, the monopolist's power of extortion is not without limit, even in the absence of public regulation. Customary price, as in the case of street car fares, the fear of attracting competitors or exciting popular wrath, and especially the increased consumption that follows every reduction of price, all serve to keep rates below a certain level of unreasonableness.[16] None the less, municipal monopolies commonly do exact a far higher return for the outlays incurred by them than can ordinarily be secured in competitive businesses.[17] It is this ability to levy toll upon the public, over and above the cost of service performed, that alone creates "franchise value". How much this tax annually amounts to can not be definitely stated for the whole United States. Some idea may, however, be gathered from the fact that in 1905 the public franchises of New York City alone were capitalized at $450,000,000[18]—a sum equivalent to a yearly tax of five dollars on each person in the metropolitan district. On the same basis

the franchise values of Greater New York should now total $600,000,000. For, in the absence of effective legal restraint, monopoly privileges grow in value with the city's growth in wealth and population. Every additional inhabitant becomes a prospective patron, and a potential victim, of the public service corporations.

If the piling up of fortunes at the community's expense were the only ill effect of the private exploitation of public utilities, the matter would be serious enough. But that is not the sole, nor the principal, consequence of exorbitant rates for public services. Such services enter largely and increasingly into the expenditures of every urban household. In 1910 the people of Greater New York paid $28.35 per capita, or about $140 per family, for light and local transportation alone.[19] Taking all utilities together, and having regard to the higher price of gas and electricity, it is probable that the people of Des Moines pay even more to their public service companies. Obviously, therefore, the price of public utilities is an important factor in the cost of living and thereby also in the standard of comfort among the masses. Excessive charges for water, gas, and transportation not only cause curtailment of expenditures in other directions, but lead to want of cleanliness, injurious economy in lighting and cookery, and congestion of population near places of employment.[20] Against such results the self-interest of a private monopoly affords no sufficient safeguard. Not infrequently, indeed, a public service corporation has exacted rates so high as to curtail its own profits by preventing a normal development of its business.[21] So unenlightened a policy is no doubt exceptional, but it remains true that the prices charged by a private monopolist, if left to his own devices, are almost invariably higher than is compatible with the public welfare.

OVERCAPITALIZATION

Overcapitalization[22] is at once an effect and a contributing cause of excessive rates. On the one hand, stock watering serves to conceal unusual profits both from the public and from possible competitors; on the other hand, it may have the effect of entrenching extortion behind a barrier of vested interests. It has been plausibly argued, indeed, that capitalization can have no such influence on rates as is here contended.[23] For, it is said, the completest monopoly can charge no more than "the traffic will bear" and the volume of securities issued can affect neither the ability nor the desire to exact the uttermost farthing. In this view, the effective capitalization of a corporation depends upon earnings, not *vice versa*, and the nominal (par) value of the stocks and bonds outstanding is of no public concern. But this argument overlooks certain important factors that go to determine how much the traffic will bear. A company which pays five per cent on $5,000,000 of bonds and twenty per cent on $3,000,000 of stocks, advertises its prosperity to the world and invites attack from the city government, whereas the same earnings judiciously distributed over twice the aggregate of securities may plausibly be represented as no more than "a reasonable return on capital invested". Further, capitalized extortion, in the way of "franchise value" and the like, once in the hands of "innocent purchasers", may become property on which the holders are entitled to a reasonable return within the protection of the State and Federal Constitutions.[24] "Confiscatory rates" in court decisions have often meant rates insufficient to pay dividends on stocks that represent no tangible investment.[25]

That the above reasoning is not simply academic is sufficiently witnessed by experience. The people of Detroit were compelled to allow $8,500,000 franchise value to a street railway whose tangible assets were but $8,000,000.[26] Greater New York is paying dividends on $125,000,000 of water in surface traction lines alone.[27] The right of the New York Consolidated Gas Company to a return upon the capitalized value of its franchise was sustained by the Supreme Court of the United States.[28] The Chicago traction settlement provided for interest on $40,000,000 of bonds representing equipment that had gone to the junk heap.[29]

Not only as consumers, but also as investors, the public are injuriously affected by stock watering. Municipal utility securities are largely held by persons of moderate means and ought to be free from speculative elements. The industrial risks of a municipal monopoly in a city of any size are almost *nil*. The market is secure and fairly efficient management in the interests of the corporate owners can hardly fail of financial success. If, notwithstanding these advantages, public service stocks, and even bonds, are frequently unsound, the fault lies mainly with overcapitalization.

Urban utilities have been a favorite field of the professional promoter, and capital inflation has been the chief means employed by him to gather in his harvest. In some industries, no doubt, the promoter does valuable work in the organization and financing of new companies. But his usefulness in the field of urban utilities is very limited. Speculative enterprises are not wanted here, and sound projects are financed with relative ease. Typically and in the main the urban utility promoter has little part in the actual development or operation of the

industries he organizes: his first and last concern is the manufacture and sale of securities.[30] To provide his profits there must be a somewhat wide discrepancy between the market value of the securities sold and the cost of the property on which they are based. In a "going concern" this excess may represent the surplus earnings of monopoly. But time is required to develop the business and realize the earnings, whereas the promoter desires before all things a quick return. His work is done at the inception, re-organization, or consolidation of enterprises. The margin between tangible assets and the par value of the stocks and bonds marketed by him represents, not demonstrated earning capacity, but the roseate hopes of speculators and the golden promises of prospectuses.[31] The promoter unloads his securities upon the unwary and leaves his victims to recoup themselves as best they may at the expense of customers. If they fail of their expectations — why, "there's many a slip 'twixt the cup and the lip."

The extent to which American municipal utilities are overcapitalized is indicated by the following table:

TABLE I

Capitalization per Mile of Track in 1899[32]

London street railways	$ 79,632
New York street railways	201,381
Berlin street railways	74,708
Chicago street railways	118,334
Liverpool street railways	94,494
Philadelphia street railways	265,510
Glasgow street railways	54,866
St. Louis street railways	306,644
Massachusetts street railways (1898)	46,600
New York State street railways (1898)	177,800

Pennsylvania street railways (1898)	128,200
Great Britain street railways (1898)	47,000
United States street railways (1898)	94,100

A glance at the above table shows that capitalization bears no relation to physical property. The street railways of Massachusetts are superior to those of the United States at large in point of construction and equipment,[33] while the Philadelphia[34] and St. Louis systems are notoriously among the worst in the country. Nor can it be supposed that the surface lines of New York and Chicago, at a time when their respective plants urgently needed rehabilitation,[35] were more than twice as valuable as the tramways of London and Berlin.

The systematic discrepancy between capital and investment appears all the more clearly from a study of particular cases. Perhaps as good an instance as any is afforded by the successive reorganizations of the surface lines of New York City. Between 1886 and 1896 not more than $5,000,000 was spent on construction and betterments, while the indebtedness grew from $35,486,923 to $76,266,810. During the next decade about $35,000,000 was put into improvements, and the liabilities rose to $234,342,823. In other words, rather more than $150,000,000 of water had been added by the Ryan-Whitney-Widener interests to rather less than $75,000,000 of assets.[36] Messrs. Yerkes, Widener, and Elkins similarly irrigated the Chicago street railways to the extent of $75,000,000.[37] Lest it be thought that traction companies enjoy a monopoly of stock watering, the exploits of Addicks, Whitney, and others in the field of artificial gas may be called to mind. Philadelphia, New York, and Chicago, as well as many smaller cities (including Des

Moines, Iowa) have profited by the financial pioneering of these gentlemen, but their achievments in staid old Boston may be taken as typical of the rest. Thanks to a succession of holding companies, leasings, and intercontracts, the gas companies of the Hub were, in 1899, capitalized at $160,000,000 — being seventeen times the value of the property used and useful for the public service.[38] Coming nearer home, the Cedar Rapids Gas Light Company built its plant from the proceeds of bonds and issued $150,000 of stock against a twenty-year franchise.[39]

Instances might easily be multiplied,[40] but the foregoing will suffice. Stock watering, in the sense of an excess of capital over tangible property, is fairly characteristic of public service companies. In an up-to-date corporation, the tangible assets are covered by mortgage bonds, the margin over this amount which the fairly expectable earnings will justify is represented by preferred stock while the common stock, at the inception of the enterprise, stands only for the future growth of the company's business.[41]

INADEQUATE SERVICE

Inadequate service is, to some extent, the deliberate business policy of municipal monopolies. This thought is excellently expressed by the famous saying attributed to Mr. Charles F. Yerkes: "The dividends are in the straps". A crowded car costs little more to operate than an empty one. Hence the more passengers per trip the greater the profits per car mile. Since the public has no choice but to use the accommodations provided, the street-car company has no incentive to run more cars than the traffic absolutely requires. Not "A seat for

every passenger'' but ''A jam on every car'' is the stockholder's ideal of efficient management. This principle holds of all private monopolies. In the absence of outside pressure no privately owned municipal utility can be expected to furnish service that is adequate from the standpoint of public convenience.

Practically, indeed, local public service not infrequently falls below the standard set by the permanent interests of the monopolist. This anomaly is made possible by the almost complete separation which the modern form of corporate organization effects between ownership and business control.[42] In what may be termed the typical case of finished financing the whole original investment is made by bondholders who, notwithstanding, have no voice in the management of the corporation. The directors and managers, being elected by and responsible to the stockholders, naturally devote more attention to paying dividends than to maintaining the value of the property. If the company is heavily waterlogged, the dividend requirements, added to fixed charges and operating expenses, may easily absorb the entire revenue, leaving no surplus for extensions and improvements. Even upkeep may be slighted and operating outlay reduced to the minimum. Consequently, when plant and equipment are worn out they can only be replaced by the sale of fresh securities. If the city has grown rapidly in wealth and population, and if no public authority compels a rate reduction, the new bonds may be marketed without discharging the prior incumbrance against the property, but only at the cost of increasing the annual fixed charges. Even so, the day of reckoning is but postponed. Soon or late, the bondholders foreclose and the inevitable re-organization begins. Meanwhile, needed

additions have been deferred, antiquated equipment has been retained, and profitable patronage turned away for sheer want of facilities.

Such was the history of the Philadelphia Rapid Transit Company whose balance sheet for 1906 showed a net income of $303,996 out of which to pay dividends on $30,000,000 of stock and provide for additions and betterments.[43] Such, too, was the history of the traction system of New York City where the operating companies, in spite of enormous earnings, were bankrupted by high finance and where horse cars are still in use on a line bonded for $2,553,097 per mile![44] Mr. Yerkes bequeathed to the Chicago street railways a debt of $50,000,000 and a plant which required immediate rehabilitation as to tracks, poles, wires, power houses, and rolling stock.[45] Overcapitalization, in short, not only burdens consumers and fleeces stockholders, but cripples the service of the corporations affected.

DISCRIMINATION BY PUBLIC UTILITIES

Discrimination may be taken to mean the unlike treatment of consumers under like conditions. Not every inequality of rates, however, is to be accounted a case of discrimination. Differences of price may be justified by a variety of circumstances. Four cases may be mentioned for the sake of illustration.

A. It costs less to supply a given volume of product or service to one large than to several small consumers. Much less distributing plant is required and the expenses of collection and management are likewise smaller. Within certain limits, therefore, there is as much justification for reduced rates on large quantities in a public utility as in a private business.

B. Service costs less per unit for long-hour than for short-hour users. A public utility must be prepared to supply, not the *average* but the *maximum* demand — and to this demand the store which uses electric current, at most, one or two hours per day for a few months in the year adds as much, lamp for lamp, as an all-night restaurant. Much more equipment is needed to supply a given number of kilowatts to the one class of consumers than to the other. Continuous users are, on this account, clearly entitled to lower rates, though the reduction is perhaps most equitably made by means of a combined current (meter) and installation charge (minimum bill).[46] What has been said of electricity holds, in a less degree, of course, of water, gas, and telephone service.

C. For reasons analogous to those just stated, service costs less "off" than "on the peak". Public utilities require very extensive and costly plants — insomuch that the permanent investment usually is several times the annual revenue. Interest charges upon this investment continue whether the plant runs or not. Much of the equipment (such as poles, pipes, conduits and buildings) deteriorates nearly as fast when idle as when in use. Obsolescence, or supersession by inventions and discoveries, goes on independently of the operation of the plant. Hence "fixed" or "constant" costs — costs, that is, which do not vary with output — form the greater part of the total expenses of operation.

On the other hand, the demand for service varies rather extremely, not only from one season to another but during the course of each day as well. Production, moreover, must usually be contemporaneous with enjoyment. This is obviously and unqualifiedly true of transportation and of message transmission. Electricity, too,

can not be cheaply stored nor can gas for winter consumption be manufactured during the preceding summer. Water, indeed, may be accumulated in reservoirs, but the distributing system, at least, must be adequate to the maximum instantaneous demand. Much of the equipment of every public utility, therefore, is needed only for a few "rush hours", standing idle the rest of the day. Hence service "off the peak", or point of maximum demand, costs scarcely more than the "variable" or "particular" expenses of production. Sales "off the peak" at prices which will a little more than pay for the extra labor, materials and fuel used, and for the extra wear and tear entailed, contribute just so much to the fixed costs, and so make possible lower rates to consumers "on the peak".[47]

The reduced rates commonly granted by gas and electric companies for day-light consumption, by telephone companies on night messages, and by street railways at certain hours of the day, sufficiently illustrate the principle set forth in the foregoing paragraph. In every such case, rates may be made which would be ruinous if applied to the entire business of the public utility, simply because fixed charges may be ignored in computing the cost of "slack-hour" operation. At the same time, specially low prices may be needed to induce manufacturers to buy electric power, housewives to cook with gas, or street car patrons to ride during periods of light traffic. So long as such reduced rates are more than sufficient to meet the particular costs of the service, and so long as business is secured thereby which could not have been had at the ordinary prices, rush-hour consumers are not injured, and may be benefited, by the reductions.

D. It may sometimes be justifiable to secure additional business, even "on the peak", by means of rate reductions. This is true, for instance, where a utility, because of a decline in population or the failure of the city to grow as rapidly as was expected, has a capacity in excess of the maximum demand upon it. It may likewise be true where the addition of a few large consumers would permit operation on a greater scale and, consequently, a lower unit-cost of production. In both these cases the additional business adds less than proportionately to the total costs of operation so that, even at reduced rates, it will yield a net revenue which may be applied toward fixed expenses that would otherwise have to be met by the regular-rate customers. It may even be better, both for the utility and for its other patrons as well, that such added business should be secured at prices which yield somewhat less than the ordinary profit on outlay than that it should not be secured at all.[48] And large consumers may well be in a position to exact such terms, since they may be able to supply themselves at a cost not greatly exceeding that of the public service company.

The foregoing may suffice to illustrate what may be termed "legitimate discrimination" in local utility rate-making. The exceptions noted are all based, to some extent, on the cost of the service. At the same time, the value-of-the-service, or what-the-traffic-will-bear, principle is recognized so far as its application is necessary to a full development of the business. Equity as between consumers does not require that rates shall be absolutely uniform nor that the same percentage of profit upon outlay shall be derived from every class of service.[49] Normal profits upon the entire business may, without

injustice, be made up of high and low return classes so long as each class contributes something to fixed expenses, and so long as low rates to one class do not result in high rates to another.

Objectionable discrimination, in contradistinction from legitimate classification, occurs whenever any service is supplied at no more than prime cost to the plant, or "on the peak" service at a price which does not provide *pro rata* for the fixed expenses of the business, or whenever one person is compelled to pay more than another for a like and contemporaneous service. Discriminations of this sort may be made as between classes of service, as between large and small consumers of the same class, or as between users of like quantities under similar conditions.

Class discrimination sometimes results from unintelligent schedule making. Thus a flat meter charge favors short-hour users as a flat installation charge (so much per lamp per month, for example) favors long-hour users. For the cost of service is made up of at least two elements: a "demand cost", answering to fixed operating expenses and proportionate to maximum instantaneous demand (active installation); and an "output cost" answering to the variable expenses of production and proportionate to quantity consumed.[50] Inasmuch as these two cost factors vary independently, neither type of flat rate can be just to both long and short-hour consumers.[51] Manufacturers' rates, insofar as they disregard time of use, may be open to a similar objection.[52] To judge from rate investigations in Wisconsin such crudities are by no means unusual.[53] Again, manufacturers and merchants may be favored because members of these classes are pecuniarily interested in the local utility. Most frequent-

ly, however, class discrimination appears in the form of reduced rates for large quantities — large consumers being confined to certain classes of service.

Reference has already been made to the fact that large quantities of most products or services can be furnished at lower rates than small amounts. But the reductions to large consumers frequently are out of all proportion to cost of service. Thus, in 1910, telephone rates in Boston ranged from eight cents per message for residence phones to two cents per message for unlimited business service.[54] The Beloit (Wisconsin) Water Company, in 1909, furnished 265,000,000 gallons of water to one manufacturer and two railway companies for $4,594, whereas business houses and domestic consumers, during the same year, paid $24,000 for 377,000,000 gallons. Stated in other terms, the three favored consumers provided eleven per cent of the company's revenue and took thirty-nine per cent of its total water supply. Operating costs amounted to 5.76 cents per thousand gallons: private consumers paid 6.36 cents; while the large users paid 1.73 cents, or scarcely more than the bare cost of pumpage.[55] Certain stores at Marinette, Wisconsin formerly paid four cents per thousand watts for electric current, of which the output costs alone, with no allowance for interest on investment, upkeep, or overhead charges were four and one-half cents.[56]

Cases so extreme as the foregoing may be exceptional, but they are by no means rare. Public utility managers apparently feel that the large consumer's business must be had at whatever price he can be induced to pay; and the large consumer takes full advantage of this attitude to obtain service at prices much below its value to him. Service at less than cost, however, requires further ex-

planation. It may be due to bad book-keeping or it may be attributable to partial ownership of the utility by the favored customers. In any case, the practical effect of below-cost rates is to exploit a multitude of small consumers for the benefit of a few large users.

Whatever plausible grounds may be urged for discriminatory rates ostensibly based on class or quantity of service, discrimination between persons can have no shadow of justification. That one man should pay more than another for the same kind and quantity of service under the same conditions strikes lay and learned alike as indefensible.

Perhaps as good an illustration as can be found of personal discrimination is afforded by the accompanying table of electric light rates in Marinette, Wisconsin. These figures, taken from the records of the Railroad Commission of Wisconsin, show that saloon-keepers in that city paid all the way from eleven and one-half cents to one dollar per lamp per month. Here was no question of long and short-hour users, of different installations, or of large and small consumers: the differences were purely personal.

TABLE II

RATES FOR ELECTRIC LIGHTING OF SALOONS IN MARINETTE, WISCONSIN, 1909[57]

NUMBER OF LIGHTS	FLAT RATE PER MONTH	FLAT RATE PER LIGHT
6	$ 4.50	$ .75
8	3.50	.44
8	3.75	.47
8	4.00	.50
4	2.50	.62
7	2.00	.29

Number of Lights	Flat Rate per Month	Flat Rate per Light
27	12.50	.46
18	10.00	.55
14	7.00	.50
15	6.45	.43
15	5.00	.33
12	6.50	.54
13	4.00	.30
12	9.00	.75
79	9.00	.11½
11	6.50	.59
15	5.00	.33
14	7.00	.50
21	8.50	.40
6	4.50	.75
9	4.50	.50
3	1.50	.50
3	3.00	1.00

The example afforded by the above table, though extreme, does not stand alone. The Public Service Commission for the Second District of New York State found that no fewer than 31,000 out of 337,000 telephone subscribers were on special contract rates and that the reductions to these favored consumers totalled $284,000 annually.[58] Many similar instances have been uncovered by the Massachusetts Board of Gas and Electric Light Commissioners[59] and by the Public Service Commission of Ohio.[60] Such personal discrimination is disguised in many ways. Sometimes discounts are so arranged that the net charge is less for a larger than for a smaller quantity;[61] sometimes a rebate is given for the ownership of such facilities as a telephone instrument[62] or a water meter,[63] usually provided by the public utility; sometimes the consumer, by private arrangement, re-

ceives more service than he pays for, as when a four-party subscriber is given a single-party phone.[64] Whatever the form, the substance of personal discrimination appears to be universally practiced by unregulated monopolies.

Special favors to particular persons may be granted for various reasons. Sometimes it is a matter of political pull, as probably in the case of certain Marinette saloon keepers.[65] Again, concessions may be obtained through personal or business connections with the utility owners or managers. Most usually, however, special rates are the result of higgling, concessions being granted to such prospective customers as will not take the service under the regular schedule. In this way exceptions to the published tariff may become so numerous that the latter serves only as a point of departure.

Thus far it has appeared: first, that large urban utilities in the United States, at present and as a rule, can not be efficiently operated by municipalities; second, that such utilities in private hands inevitably become monopolies; and third, that the actual and potential evils of unregulated monopoly are intolerable. These conclusions are neither new nor startling. It has long been recognized by economists that there is a field of natural monopoly within which competition is neither practicable nor expedient; and English law from of old has subjected monopoly to a degree of regulation not deemed necessary in competitive businesses.

From very early times every business which involved virtual monopoly of a common necessity has been treated as a public calling, charged with extraordinary duties, and hedged about with exceptional restrictions.[66] In the

Middle Ages, when travel was difficult and travellers were few, there was commonly but one place of public entertainment in a village, but one horseshoer in a countryside, and but one ferry upon many miles of an unfordable stream. Under these circumstances customary law required the inn-keeper,[67] the smith,[68] and the ferryman[69] to render good and sufficient service, to serve all comers without distinction of persons, and to charge no more than a reasonable price. Similar duties rested upon the surgeon[70] when medical knowledge was closely monopolized, upon the victualer[71] before the days of competition in the retail grocery business, and upon the common carrier[72] from the beginnings of regular trade to the present day.

The list of public employments has been altered from time to time to meet changing economic and social conditions, but the underlying principles of the law have remained the same throughout. As was said by Lord Justice Hale some three hundred years ago, businesses that take on the character of monopoly "are affected with a publick interest, and they cease to be *juris privati* only."[73] This principle, never wholly lost sight of,[74] was authoritatively reaffirmed two centuries later by the Supreme Court of the United States in the notable case of *Munn vs. Illinois*,[75] and has since been applied in many decisions to an ever-expanding realm of economic life.[76]

Urban utilities clearly "are affected with a public interest". They occupy the city's streets by virtue of a public grant; they exercise the right of eminent domain by authority derived from the State; and they possess the power of monopoly over common necessities. Hence they are rightly termed quasi-public businesses and subjected to an exceptional degree of governmental control.

Middle Ages, when travel was difficult and travellers were few, there was commonly but one place of public entertainment in a village, but one horseshoer in a countryside, and but one ferry upon many miles of an unfordable stream. Under these circumstances customary law required the inn-keeper,[67] the smith,[68] and the ferryman[69] to render good and sufficient service, to serve all comers without distinction of persons, and to charge no more than a reasonable price. Similar duties rested

after Justice Hale's at * Page 4.

nedical knowledge was closely
ıaler[71] before the days of com-
cery business, and upon the
beginnings of regular trade

yments has been altered from
ging economic and social con-
principles of the law have re-
out. As was said by Lord
undred years ago, businesses
r of monopoly "are affected
l they cease to be *juris privati*
ever wholly lost sight of,[74] was
two centuries later by the Su-
d States in the notable case of
as since been applied in many
nding realm of economic life.[76]
"are affected with a public
he city's streets by virtue of a
se the right of eminent domain
m the State; and they possess
ver common necessities. Hence
quasi-public businesses and sub-
degree of governmental control.

Fortunately there is no longer any dispute as to the need of regulating public service companies. The necessity of social control in the public's interest is admitted even by the spokesmen of the companies affected.[77] The only questions are, in what way and by what arm of government shall such control be exercised? Shall the task of regulation be entrusted to the city or the State, to the legislature, the executive, or the courts of law? Shall the restrictions imposed be rigid or elastic, in the nature of commands or of prohibitions? What limits shall be assigned to the regulative authority and how much of initiative and discretion shall be left to those who adventure their private means in public service industries? To throw some light upon the answer to these and like questions, by showing how they have been answered elsewhere and with what results, is the purpose of the present study.

II

THE FAILURE OF LOCAL REGULATION

The organ of urban utility control that lies nearest at hand and has been most extensively tried is the city government. The municipality possesses certain very obvious advantages for dealing with its own public service problems, and these the advocates of "home rule" have not failed to emphasize.[78] The city's officials are familiar with local conditions and are immediately responsible to the community affected by their acts. None the less, American cities have generally, and somewhat conspicuously, failed in their attempts to regulate privately operated utilities. Of the reasons for this comprehensive failure, some are eradicable and, so to speak, accidental; others are permanent and inhere in the nature of the problems to be solved.

Of the obstacles which may be termed accidental, two only need here be mentioned — the prevalent misgovernment of American cities and the inadequate powers hitherto vested in municipalities.

Municipal misrule, boodle councils, autocratic bosses, and civic indifference too frequently have incapacitated our cities for the performance of the most ordinary functions of local government. Much more has the ineptitude of city administration prevented intelligent handling of the complex problems of public service regulation. Fortunately, however, there are now abundant signs of the coming of a better order in things municipal.

Commission government, the short ballot, popular initiative and referendum, the enlistment of experts in local administration, and above all the quickened interest of the ordinary citizen, give credible promise of effective city management. The outlook is particularly hopeful in Iowa, where great progress has been made within a half-dozen years.[79] Misgovernment, accordingly, is to be accounted a temporary and extraneous obstacle to municipal control of local utilities.

Much the same may be said of the insufficient powers hitherto given to city governments. Partly on account of the prevalent corruption of city politics, partly because governors and legislators desired to share in municipal patronage and municipal graft, most cities of the United States have been kept in leading strings. The State has imposed an arbitrary limit upon debts and taxes, prescribed the form of internal organization, withheld the most necessary powers, and interfered at will in matters of purely local concern.[80] The cities have thus been heavily handicapped in their dealings with public service companies. They have lacked the power to acquire utility properties and the funds to pay for them. They have been denied the authority to examine accounts, supervise construction, control capitalization, and compel adequate service. But these defects of power are not incurable, nor do they prove the inherent incapacity of cities to regulate their own public service industries.

There are, however, substantial and irremediable difficulties in the way of municipal control of local utilities. Since there still are advocates of unqualified home rule in utility matters, it may be worth while to examine certain of these inherent impediments, even at some risk of tediousness.

In the first place it should be noted that some subjects which it is highly important to regulate are beyond the competence of a city government, however well-conducted and however ample its powers for local needs. The organization and powers of corporations and the issue and transference of corporate securities must be governed by general laws, uniform throughout the State. Hence, the vital matters of capitalization and consolidation or merger, can be controlled only by a central authority.

Again, urban utilities to an increasing extent transcend the limits of a single municipality. In the telephone business out-of-town calls are so important that no company which does not provide long-distance connections can hope to gain or hold subscribers. The suburban trolley lines radiating from a city like Des Moines are physically, if not corporately, stems of the street railway system; while, *per contra,* interurban companies often control the street railways of smaller places. Gas, electric, and even water companies sometimes serve more than one community. For example, water, gas, and electricity are supplied to Valley Junction by Des Moines companies; Cedar Falls receives its gas, electricity, and telephone service from Waterloo; and Marion is similarly an appanage of Cedar Rapids in respect to its public utilities. There is, then, a considerable and growing mass of inter-city utility relations which must be controlled by some authority superior to the municipalities concerned.

Furthermore, the regulation of public service corporations is too complex and costly an undertaking for any but the largest cities to attempt. Rate-making, valuation, the supervision of service, and the prevention of

discrimination call for a high degree of technical knowledge and administrative capacity. No municipality in this State does, or could afford to, maintain a staff of engineers, accountants, and other experts sufficient to ascertain, from time to time, the value of utility properties, keep track of new construction, replacements, and depreciation, compute unit costs of production, interpret current accounts of maintenance and operation, and test the adequacy of the service received by the public. That is to say, no Iowa city does, or can, provide itself with the information needed for intelligent utility regulation. Nor can any community of moderate size secure a competent administrative body. The mayor and the city council can not, in addition to their other duties, be deeply versed in utility questions. The cost of a high grade commission which should devote its entire time to local utilities would be prohibitive, and an unpaid body — such as some cities possess[81] — could not be expected to accomplish much. Even were it feasible for the cities singly to provide effective supervision, a central commission for the whole State would obviously be far more economical.

Finally, a municipal government can hardly be expected to prove a satisfactory arbiter between a local utility and its patrons. The city officers are rather the advocates of the constituents upon whose votes they depend than impartial judges of the matters in controversy. It must be remembered that justice to public service companies is as important to the public as to investors. If utility companies are needlessly harassed, if unreasonably low rates are imposed or unreasonable service exacted, capital will flow to more attractive fields and the city will suffer from inadequate facilities. Even-handed

justice, however, is not often to be looked for from an interested party. Add to this inevitable bias the too frequent popular exasperation over real or supposed wrongs and the further fact that a rate ordinance commonly is the culmination of an anti-corporation campaign, and it will be seen that the chances are against fair dealing on either side. On this ground alone, a tribunal removed from local interests and animosities is highly desirable.

These *a priori* arguments are abundantly supported by actual experience. Municipal control of public service corporations has been a prolific source of corruption, has fostered ill-will between companies and consumers, and has failed to correct the abuses at which it was aimed.

For want of suitable administrative machinery regulation has been attempted by means of stipulations inserted in franchise grants. The applicant for a franchise is a seeker of favors and is usually willing to make concessions. This mode of regulation has, however, important disadvantages.

Franchise makers can not foresee the city's growth nor the technical changes which may revolutionize the industry during the life of the contract. In the course of the "eighties", the water process reduced the cost of illuminating gas by one-half; within the first decade of the present century, the incandescent mantle has made fuel gas available for lighting purposes and rendered obsolete the candle-power test of efficiency. A street railway franchise granted twenty-five years ago would have witnessed the supersession of horses by cables and of cables by trolleys. There is no reason to suppose that the transformations of the future will be less rapid or

complete. This, then, is the first drawback to regulation by franchise: the terms are no sooner agreed upon than they begin to be obsolete. To grant a long-term, rigidly drawn franchise, is to tie the hands of the city with a contract the conditions of which become more inapplicable with every passing year.

On the other hand, a short-term grant, such as the law of Iowa now requires, is just neither to the public nor to investors. If treated in good faith, as a terminable grant, the investment must be "amortized". That is to say, over and above operating expenses, upkeep, interest, and ordinary dividends, a sinking fund must be accumulated for the retirement of bonds and the redemption of stock at the expiration of the franchise. This would necessitate very high charges and would lead also to indifferent maintenance in the later years of operation. In practice, the renewal of a short-term grant commonly is counted upon by both the city and the grantee. The termination of such a franchise finds both parties at a disadvantage. The city can not do without service pending a new agreement, nor can it force the existing utility to sell its plant to the municipality or to another corporation. The company can neither remove its permanent structures nor dispose of its property at anything like its real value. Under these circumstances each party attempts to "bluff" the other into an unfair bargain. The city authorities talk loudly of competition, or — as once happened in Des Moines[82] — prepare to oust the old company from the streets. The company retaliates — as also occurred in Des Moines[83] — by setting up the claim of a perpetual right, or, as in Columbus, Ohio, by threatening to "turn off the gas".

Even a provision for municipal purchase is but a

partial protection against the ills of a short-time grant. Moreover, no practicable franchise can be short enough to avoid the objections of too great rigidity. Private persons will not invest large amounts of capital in a quasi-public enterprise unless there is reasonable certainty that their principal, at least, will be returned before the expiration of their rights. Twenty-five years appears to be near the minimum duration necessary to attract capital on favorable terms, and this period, as has been seen, is long enough to permit of two revolutions in a public service industry. The only thorough-going remedy is a revocable franchise, with a public purchase clause and provisions for the periodic revision of rates and the continual supervision of service — which raises again the administrative difficulties already spoken of.

Franchise granting notoriously occasions a large share of the corruption and misrule that so commonly prevail in the government of American cities.[84] The exclusive privilege of supplying gas for public consumption may be worth millions in a metropolis, thousands in a country town. It is often cheaper, and sometimes easier, to obtain the privilege by bribing the council than by compensating the city or by making concessions to consumers. Even when the city fathers are personally incorruptible, they may be indirectly bribed by an offer to light the streets at less than cost, or furnish free telephones in the city hall — and make it up at the expense of private consumers.[85] Most municipalities are chronically out of funds, and it seems simpler to replenish the public treasury in some such covert way than to raise the assessed valuation of taxable property. Trickery, also, is resorted to and well-intentioned officials are over-reached by sharp practices.[86]

The well of corruption is not stopped when the franchise is secured. The utility company is always in need of renewals, extensions, permissions to operate in streets not heretofore occupied, and other favors. The city government, for its part, has a continuing power of annoyance and many a "strike ordinance", professing to require a minimum temperature of sixty degrees in street cars, a uniform pressure in gas pipes, or the removal of unsightly poles from the thoroughfares of Redbrush, is destined to no other end than to shake the plums from the corporation tree. Hence the utility companies go into local politics for reasons offensive and defensive. They are behind every local machine, and they back every city boss from the Grand Sachem of Tammany to the petty dictator of an Iowa town.[87] Nor is it only the betrayal of public trust that springs from this state of affairs. Public utility relations, which ought to be settled in a spirit of judicial fairness, after full inquiry, are threshed out in the midst of a hot political campaign. Often, indeed, such questions dwarf every other issue in a local election and divert public attention for years from the ordinary functions of municipal government. The gas troubles of Boston[88] in the "eighties", the street railway dispute in Detroit[89] under Mayor Pingree, and the prolonged traction controversies of Chicago[90] and Cleveland[91] in more recent years, are instances in point.

If bargaining is thus seen to be ineffective as a mode of regulating local utilities, regulation by city ordinance is not much more satisfactory. Rate ordinances seldom are based upon extended inquiry or exact knowledge. The celebrated ninety-cent gas ordinance of Des Moines, for example, was hurried through the City Council when no representative of the gas company was present.[92]

Even in those rare cases where investigation precedes legislation the investigator's findings are as likely as not to be ignored by the lawmakers. Chicago, for instance, paid $10,000[93] for a report by Mr. William J. Hagenah recommending that the price of gas be fixed at seventy-seven cents, and then proceeded, after an exciting campaign waged largely on the gas issue, to enact a seventy cent ordinance.[94] The particular cases just mentioned are neither unusual nor extreme. As already explained, decisive action is apt to be taken in a time of high-wrought feeling and to represent popular prejudice and resentment, rather than intelligent judgment. Often, indeed, as in the Chicago gas case, the ordinance fulfils a campaign pledge. Whether or not injustice is done, the utility affected is pretty sure to appeal to the courts and delay the enforcement of the reduced rates for some years, even if it does not finally establish their invalidity.

The attempt to control rates and service by ordinance amounts, in fact, to regulation by lawsuit. The information upon which the city's statute should have been based is obtained after its enactment, by a master in chancery, and the legislation is made to stand or fall by the facts so established. In all such litigation the city is at grave disadvantage.

In the first place the public service company is certain to have the longer purse and the abler advocates. Few local utilities of any consequence are controlled by local capital. Ten out of fifty Iowa companies investigated by the writer are foreign corporations and twenty-two others are controlled by holding companies. The traction system of Des Moines is owned by the McKinley syndicate; the gas works by the United Gas Improvement Company of Philadelphia. The American Telegraph and

Telephone Company controls nearly all the important exchanges in the State. In fact, the financial strength of the local utility is to be measured, not by its local income, but by the resources of the great combination of which it is a part.

In the second place, the facts upon which the court's decision will depend are in the keeping of the company, not the city. Books and accounts may be produced in court — but damaging records are likely to be "lost" or inadvertently destroyed. The city's investigators, not infrequently are hindered as much as possible, and their estimates of investment, income, and costs of production are often little better than guesses.[95] Add to these obstacles the fact that experts whose future livelihood depends upon employment by private corporations are loth to testify for the city and the difficulty of obtaining evidence on behalf of the public will be apparent. Hence, cities often lose utility cases which, on the merits of the controversy, they ought to win.

If cities have, on the whole, failed effectually to regulate rates and service, they have scarcely attempted to prevent stock watering, corporation wrecking, deterioration of service, and discrimination between patrons. The glaring instances recited in an earlier section of this paper all occurred under municipal supervision. Nor was the failure to correct these abuses wholly due to corruption or want of power. The control of capitalization can not well be vested in municipalities, and overcapitalization opens the door to plant skinning, excessive charges, and poor service. Discrimination, too, is beyond the reach of any administrative machinery that moderate sized cities possess or can afford. City ordinances usually prescribe only maximum rates, because councils

do not have, and can not obtain, information on which to base a classified schedule. Nor is the means at hand to prevent departures from the published rates by way of rebates, private agreements or otherwise.

Even municipally conducted utilities are not superior to the need of outside supervision. However honest and well meaning, local authorities rarely are equal to the task of keeping accounts in intelligible form. It is an exceptional city whose responsible officials can tell whether the municipal light or water plant is making or losing money, and on what kinds of service such gain or loss is incurred. Receipts and disbursements usually are classified by irrelevant funds and so fail to show the "fixed", "output", and "consumer" costs, or the net income from each class of consumers. In providing for functional "general", "contingent", "bond", and "tax" funds, the necessity for a depreciation fund is apt to be overlooked. In many cases a fictitious profit is shown by ignoring interest, depreciation, and expenses of management, or an apparent deficit produced by failure to credit the plant for service rendered to the city.

Benighted bookkeeping of the sort above set forth is so common that particular instances may seem invidious. Yet, because general statements are at once easy and unconvincing, a few illustrations will be ventured with the *caveat* that these cities have not sinned above others that are in Iowa. The records of the Madison (Wisconsin) water works were kept in such shape that the Railroad Commission was obliged to make up a new set of accounts from the original vouchers in order to ascertain the condition of the business and the reasonableness of the rates charged.[96] The Jefferson (Wisconsin) Water and Light Commissioners failed to separate the operating accounts

of their water and light plants, with the result that the former was losing money without the commissioners being aware of the fact.[97] Similar conditions existed with respect to the Cumberland (Wisconsin) electric light and water plant.[98] In none of these cases was a proper depreciation account kept, or a proper subdivision made of construction and operating costs.

To cite an Iowa instance, the published reports of the Dubuque City Water Works do not reveal the amount of water furnished to the city, the school district, business establishments, or private residences, the rates paid by, or the costs chargeable to, any class of consumers, nor the cost or value of the plant. A net profit is indicated on the face of the returns; but since no allowance is made for interest, depreciation, or taxes, and no credit given for water consumed by the city, it is impossible to tell whether there was not in fact a deficit.[99] Yet the Dubuque report is a rather favorable specimen of Iowa municipal accountancy.

It may be thought that faulty accounting is, at worst, a venial offense. But bad bookkeeping, like charity, covers a multitude of sins. Economical management is unlikely when neither the people nor their elected representatives are in a position to detect extravagance or peculation. Discrimination is almost certain when no one knows how much any class of consumers ought in fairness to pay. Under such circumstances the commercial users, with their superior organization and political influence, are wont to be favored as against householders.[100] Free service to the city or other public bodies similarly relieves taxpayers at the expense of consumers[101] while the opposite effect is produced by a deficit made up out of the general revenues. Disregard

of depreciation, lastly, leads to periodic and permanent increase of the public debt and of the burden upon taxpayers.[102]

Both theory and experience, therefore, would seem to require some form of State control over urban utilities. Not that the municipalities should be stripped of all authority in the premises. On the contrary, a considerable measure of home rule in public service matters should be retained. Local powers might even be increased in some particulars. But the State should take over those phases of utility regulation which municipal governments are not well fitted to control and should supervise the administration of other matters that are entrusted primarily to the local authorities.

Book Rev
in cities

III

THE APPROPRIATE ORGAN OF STATE REGULATION

If the State is to exercise control over urban utilities, it must provide an organ appropriate to that function. The work can not be effectively performed by the legislature, the courts, or the ordinary executive. So much is clear from the briefest consideration of the problems involved in utility regulation.

A high degree of flexibility is indispensable to the successful control of local utilities. Conditions vary so much from place to place that uniform rates for service or uniform rules and regulations are wholly impracticable. The city's population, its density and its rate of increase, the wealth of the community and the distribution thereof, the presence or absence of water power, the proximity of a coal supply, the topography of the city, the facilities for railway transportation, and many other circumstances, affect the volume of sales, the unit costs of production, and the reasonableness of particular rates. Within the same community the advance of the industrial arts, the growth of population, the encroachment of manufactures upon residence districts, and the building up of new suburbs operate, among other causes, to alter the conditions under which public service businesses are carried on.

Obviously no legislative body could undertake the detailed supervision of such businesses throughout a

populous State. Time would not suffice for the hearings and debates upon the numberless private and local acts that would be required. Nor can a legislature, by any stretch of the imagination, be supposed to possess the special knowledge necessary for intelligent rate making. As was well said by the Supreme Court of Wisconsin, "Because of the multitude of detail, the intricacy of the subject, the expert knowledge required, the numerous separate investigations of inter-related questions of fact which are necessary, and the necessity for frequent changes and adjustments in rates or service, a legislative body, the members of which are chosen for short terms from the body of the people, would find it an actual rather than a legal impossibility to fix just and reasonable rates".[103] In Iowa this whole field is foreclosed to the General Assembly by the constitutional inhibitions against special legislation.[104]

The courts, also, are peculiarly unfitted to deal with questions of utility rates and service. In the first place, litigation between parties is the only method of judicial inquiry known to the jurisprudence of English-speaking countries. This means: (1) that no investigation can be made and no action had unless some one is sufficiently aggrieved to shoulder the immense pecuniary burden of prosecuting a case through successive State and Federal tribunals; (2) that, since no court can undertake an independent investigation, the ultimate findings must rest upon "that most unsatisfactory evidence, the testimony of experts employed by the parties";[105] and (3) that the law's proverbial delays — and expenses — intervene between a wrongful charge or practice and its remedy.

In the second place, the facts found require to be interpreted and applied by men, who indeed are learned in

the law, but who have no special knowledge of business in general or of local utilities in particular. Their very expertness in an alien field is an obstacle here, since legal reasoning is metaphysical and deductive whereas accountancy and engineering deal only with matters of fact. Lastly, courts have no administrative machinery adequate to the supervision of public utility corporations.

The courts themselves have been not unmindful of their own limitations. When the issue was first raised in the "Granger Cases" thirty-six years ago the Supreme Court of the United States held that rate-making is a legislative function, with which courts can have nothing to do.[106] This view was shortly abandoned,[107] but judicial review of rates fixed by legislative authority has always been confined to the determination of the single question, whether the rates thus prescribed were so unreasonably low as to effect a practical confiscation of property.[108] In other words — and this is a principal drawback to regulation by lawsuit — a court can only uphold or overthrow the particular rate complained of in the case before it. It has no power to substitute a new rate for one declared unlawful,[109] much less to construct a complete tariff of charges.

Finally, the ordinary executive officers of the State have neither the time nor the special fitness to supervise a multitude of local utilities. To pass intelligently upon an application for an increase of capitalization requires an investigation into the value of the property, the rates and earnings of the corporation, the amount of bonds and stocks outstanding, and the public necessity for enlarged facilities. To make a schedule of rates that shall be just to consumers and investors alike it is needful to know the value of the property devoted to the public use, the

unit cost of production for each class of service and the returns reasonably to be expected from the rates proposed to be put into effect.[110] To insure adequate service there must be frequent tests by competent inspectors. To make publicity of accounts effective the companies must be required to report on uniform, scientifically prepared blanks; and the data thus secured must be compiled and interpreted by a trained statistician. All this demands administrators who are familiar with matters of finance, accountancy, and engineering and who are not burdened with a multitude of disconnected duties.

The control of public service industries, in fact, belongs to no one of the traditional departments of government. Rate-making and the regulation of service are legislative functions in so far as they consist in the formulation of rules for future observance.[111] The reasonableness of particular rates or practices and the adequacy of service are judicial questions in that they require the ascertainment of facts and the application thereto of existing rules of law.[112] The work of making inspections, tabulating reports, and supervising accounts may be termed executive. But these distinctions are rather more nominal than real.[113] Regulations, to be valid, must be reasonable, so that the determination of facts must precede the promulgation of rules. So, likewise, the granting of a permit to issue additional bonds or to engage in competition with an existing utility company, while necessarily a matter of executive discretion, turns upon the conclusion drawn from a complex group of facts. In a word, legislative, executive, and judicial powers and duties commingle at every turn in the regulation of public utilities.

If any one designation is to be selected for the fusion

of functions above described, undoubtedly the term administrative best fits the case.[114] The legislature can not enact minute rules for each public service corporation in the State, but it can provide in general terms that rates shall be reasonable, service adequate, and capitalization represent no more than actual investment, leaving it to the administrative authority to determine in detail when these conditions have been fulfilled. Such determination is not legislation;[115] nor is it interpretation of the law in the judicial sense,[116] but rather an unavoidable incident to the enforcement of the legislative will. And it is just this detailed regulation, and the close and constant supervision necessary to give it effect, that is of vital consequence for the control of public utilities.

The foregoing considerations clearly point to the need of an administrative board unhampered by the traditional and now largely discredited[117] division of powers. Such a board, being a permanent body always in session, can exercise a constant, scrutinizing supervision which neither courts nor legislature are able to supply. It can bring to the difficult and delicate problems before it a degree of expertness that is continually added to by experience. An administrative board is not bound by the technicalities of judicial procedure, nor by the necessity for uniformity that is imposed upon a legislative body; it can adapt its rulings to the particular circumstances of the case before it and thereby insure that flexibility which is so desirable in public utility regulation. It can be provided with machinery for investigation such as no legislative assembly and no judicial tribunal does, or can, possess. And, not least of its advantages, the board can use this same machinery to give effect to its decisions.

That a State may constitutionally create such a board

as is here contemplated, and may clothe it with powers which, while primarily administrative, partake also of the legislative and judicial character, there can be no doubt.[118] The expediency of so doing is attested by the success of the United States Interstate Commerce Commission and of many State railroad commissions. More specific testimony to the same effect is afforded by the public service commissions which now exist in seventeen States. An examination of the statutes creating these last mentioned commissions, and of the experience thereunder, should be of value to those whose task it is to solve the problem of urban utility regulation in Iowa.

IV

PUBLIC SERVICE COMMISSIONS IN THE UNITED STATES

STATE administrative control of urban utilities began in 1885 with the creation of the Massachusetts Board of Gas Commissioners,[119] changed two years later to the Board of Gas and Electric Light Commissioners.[120] This experiment was not the result of widespread popular demand: the act establishing the commission was lobbied through the General Court by the Boston Gas Company as a strategic move in its memorable struggle with J. Edward Addicks.[121] Notwithstanding this somewhat unsavory origin the Board has had an honorable career of public usefulness and has exercised an important influence, by way of example, upon the development of urban utility control in other States.[122]

In addition to its Light Commissioners, Massachusetts has a Railroad Commission with some jurisdiction over street railways and a Highway Commission which in 1906[123] was given a limited control over telephone companies. But the earliest commissions with wide powers embracing all urban utilities were established almost simultaneously by New York and Wisconsin in 1907.

In New York State a Board of Railroad Commissioners, a Commission of Gas and Electricity, an Inspector of Gas Meters, and a Rapid Transit Board had all and severally failed to prevent overcapitalization or effectively control the rates or service of municipal mo-

nopolies.[124] The several boards, in fact, had proven quite innocuous — partly by legislative intent, partly because of weak personnel. Their jurisdictions, moreover, were over-lapping and to some extent conflicting, their powers feeble and feebly exercised, and their machinery at once cumbersome and inadequate.[125] Meanwhile Messrs. Whitney, Ryan, Belmont, and other exponents of high finance were making plain to the meanest intelligence the evils of uncontrolled monopoly. At length, under the leadership of Governor Hughes, the futile regulative bodies were swept away and in their stead were installed two public service commissions — one for Greater New York, and one for the rest of the State.[126]

In Wisconsin, also, the legislative conscience was quickened by flagrant abuses — especially in the principal city of the State.[127] Effective control of public service corporations was, moreover, a prominent feature in the comprehensive program of social reconstruction for which La Follette and the State University were joint sponsors. A Railroad Commission, clothed with plenary powers, was created in 1905[128] over bitter opposition;[129] and two years later its jurisdiction was extended to urban monopolies of every description. The Public Utilities Act of 1907[130] was drafted by Professor John R. Commons of the State University of Wisconsin in consultation with Mr. Halford Erickson and Professor B. H. Meyer of the Railroad Commission.[131] The Wisconsin statute concededly is one of the best-drawn, as well as one of the most effective laws of its kind, and has served as a model for similar legislation in a number of States.

Following the example of New York and Wisconsin, public service commissions were established by Georgia[132] in 1907, by Vermont[133] in 1908, by Maryland[134]

and New Jersey[135] in 1910, by California,[136] Connecticut,[137] Kansas,[138] Nevada,[139] New Hampshire,[140] Ohio,[141] and Washington[142] in 1911, and by Rhode Island[143] in 1912. In addition to these Oklahoma, by the State Constitution of 1907, provides for a Corporation Commission with some jurisdiction over public utilities,[144] and Oregon, in 1911, enacted a Public Utilities Law, subject to referendum at the November, 1912, election.[145] Thus legislation looking to central administrative control of urban utilities has been enacted by seventeen States, including five New England, three Middle Atlantic, one South Atlantic, three North Central, one South Central, one Rocky Mountain, and three Pacific Commonwealths. A legislative movement so widespread and of such recent and rapid growth challenges the most serious consideration.

The most important features of the recent public utilities legislation are exhibited in convenient form by the accompanying tables. A somewhat more extended comparison is, however, necessary to an intelligent comprehension of the several statutes.

THE COMMISSIONS[146]

The commissions, except in Georgia, Oklahoma, and Oregon, are appointive, generally by the Governor and Senate; and in most cases the Governor has also the power of removal for cause. The number of commissioners is five in California, Georgia, and New York, and three in the other States. Terms vary from three to six years — the longer period predominating. Salaries range from $1,700 in Vermont to $15,000 in New York — $4,000 to $6,000 being the prevailing amount. In Georgia

TABLE III

The Public Utility Commissions

State and Year Established	Title	Number Members	Elected by	Removed by	Term	Annual Salary	Annual Expenditures
California 1912	Railroad Commission	5	Governor	2-3 of all members of both houses of Legislature	6 years	$6,000	$175,000
Connecticut 1911	Public Utilities Commission	3	Governor and Legislature	Superior Court	6 years	$5,000 and expenses	$100,000
Georgia 1907	Railroad Commission	5	People		6 years	Chairman $4,000	$20,000 (Limited)
Kansas 1911	Public Utilities Commission	3	Governor and Senate		3 years	$4,000	$55,000 (Appropriated)
Maryland 1910	Public Service Commission	3	Governor	Governor	6 years	Chairman $6,000 Others $5,000	$75,000 (Limited)
Massachusetts 1885	Gas and Electric Light Commission	3	Governor and Council	Governor and Council	3 years	Chairman $4,000 Others $3,500	$55,600 (Appropriated)
Massachusetts 1906	Highway Commission	3	Governor	Governor and Council	3 years	$1,500	$10,500 (Limited)
Nevada 1911	Public Service Commission	3	Railroad Board	Railroad Board	3 years	Chairman $5,000 Others $4,000, $2,500	$25,000
New Hampshire 1911	Public Service Commission	3	Governor and Council	Governor and Council	6 years	Chairman $3,500 Clerk, $3,200 Others $3,000	$21,200 (Appropriated)
New Jersey 1910	Board of Public Utility Commissioners	3	Governor and Senate	Governor	6 years	$7,500	$100,000 (Limited)
New York 1907	Public Service Commission	5 in each district	Governor and Senate	Governor Statement filed with Secretary of State	5 years	$15,000	2nd District $350,000 (No limit)
Ohio 1911	Public Service Commission	3	Governor		6 years	$6,000	$150,000 (Appropriated)
Oklahoma 1907	Corporation Commission	3	People		6 years	$4,000	$115,000 (Appropriated)
Oregon* 1912	Railroad Commission	3	People	Governor, Secretary of State and Treasurer	4 years	$4,000	
Rhode Island 1912	Public Utilities Commission	3	Governor and Senate	Governor and Senate	6 years	Chairman $4,000 Others $3,500	$22,000 (Limited)
Vermont 1908	Public Service Commission	3	Governor and Senate		6 years	Chairman $2,200 Others $1,700	$10,000 (Appropriated)
Washington 1911	Public Service Commission	3	Governor and Senate	Governor	6 years	$5,000	$120,000 (Limited)
Wisconsin 1907	Railroad Commission	3	Governor and Senate	Governor	6 years	$5,000	$150,000 (No limit)

*This act will be submitted to popular referendum at the November election, 1912.

TABLE IV

Jurisdiction of the Commissions

State and Year Established	Urban Utilities Regulated	Issue of Securities	Valuation	Accounting Uniform	Rates
California 1912	Gas, electricity, water, warehouses, street railways, telephones	Controlled by Commission Purposes specified	Commission may value all utilities	Commission may require	Public and uniform. Commission may fix rates
Connecticut 1911	Street railways, telephones, gas electricity, water				Commission may fix maximum rates upon complaint
Georgia 1907	Street railways, docks, wharves, terminals, telephones, gas, electricity	Controlled by Commission	Commission may value all utilities	Commission may require	Commission may fix rates
Kansas 1911	Street railways, trolley lines, heat, light, power, water, telephones	Controlled by Commission Purposes specified	Commission values specific utilities for rate making	Commission must require	Commission may fix rates Rates public and uniform
Maryland 1910	Street railways, telephones, water, gas, electricity, dams, heat, refrigerating	Controlled by Commission Purposes specified	Commission may value all utilities	Commission may require	Commission may fix maximum rates Rates public and uniform
Massachusetts 1885	Gas and electricity	Controlled by Commission	Commission values specific utilities for rate making	Commission must require	Commission may fix maximum rates upon complaint
Massachusetts 1906	Telephones	Subject to approval by the Commissioner of Corporations	Commission values specific utilities for rate making	Commission must require	Commission may recommend rates
Nevada 1911	Heat, light, water, power, sewerage, telephones		Commission may value all utilities	Commission must require	Commission may fix rates upon complaint Public and uniform.
New Hampshire 1911	Telephones, electricity, gas, heat, water, street railways, ferries, toll bridges	Controlled by Commission Purposes specified		Commission may require	Commission may fix maximum rates Public and uniform.
New Jersey 1910	Street railways, subways, electricity, heat, power, telephones, water	Controlled by Commission	Commission may value all utilities	Commission may require	Commission may fix rates Public and uniform.
New York 1907	Street railways, light, heat, power, telephones	Controlled by Commission Purposes specified	Commission values specific utilities for rate making	Commission may require	Commission may fix maximum rates Public and uniform.
Ohio 1911	Street railways, telephones, electricity, gas, water, messenger companies	Controlled by Commission Purposes specified	Commission may value all utilities	Commission may require	Commission may fix rates Public and uniform.
Oklahoma 1907	Street railways, telephones		Commission must value all utilities	Commission has required	Commission may fix rates
Oregon* 1912	Street railways, telephones, light heat, water, power		Commission must value all utilities	Commission must require	Uniform and public Commission may fix rates
Rhode Island 1912	Street railways, gas, electricity telephones, water, light, heat, power				Public and uniform. Commission may fix rates in specific cases
Vermont 1908	Street railways, gas, electricity, telephones	Controlled by Commission			Public and uniform. Commission may fix rates
Washington 1911	Gas, electricity, water, telephones, street railways, wharves		Commission must value all utilities	Commission may require	Public and uniform. Commission may fix rates
Wisconsin 1907	Street railways, heat, light, water, power, telephones	Controlled by Commission Purposes specified	Commission must value all utilities	Commission must require	Commission may fix rates Public and uniform

*This act will be submitted to popular referendum at the November election, 1912.

TABLE IV — CONTINUED
JURISDICTION OF THE COMMISSIONS

STATE AND YEAR ESTABLISHED	SERVICE	FRANCHISE	COMPETITION	MUNICIPALLY OWNED UTILITIES
California 1912	Commission may fix standards, make tests, order adequate service and betterments	New franchise requires commission's approval	Commission's consent required	Not in jurisdiction of commission
Connecticut 1911	Commission may fix standards, make tests, order adequate service and betterments			Not in jurisdiction of commission
Georgia 1907	Commission may order reasonable service	Not valid unless approved by commission		
Kansas 1911	Commission may fix standards and order reasonable service	Merger or franchise requires commission's approval	New company cannot begin business without certificate from commission	Not in jurisdiction of commission
Maryland 1910	Commission may fix standards, order reasonable service and improvements	Merger or franchise requires commission's approval	Commission's certificate of public convenience and necessity required	Not in jurisdiction of commission
Massachusetts 1885	Commission may fix standards, make tests, order adequate service	Merger or franchise requires commission's approval Franchises revocable	Only with consent of Board, mayor, and council	Within jurisdiction of commission
Massachusetts 1906	Commission may recommend changes			Not within jurisdiction of commission
Nevada 1911	Commission may fix standards, make tests, order changes			
New Hampshire 1911	Commission may make tests, order improvements	Merger or franchise requires commission's approval	New company cannot begin business without certificate from the commission	Not included
New Jersey 1910	Commission may fix standards, make tests, and order betterments	Merger or franchise requires commission's approval	Only with approval of commission	Uniform accounts required
New York 1907	Commission may fix standards, make tests, order improvements	Merger or franchise requires commission's approval	Only with approval of commission	Commission may require reports, files of schedules, inspect utilities
Ohio 1911	Commission may make tests and regulate service upon complaint, may fix standards	Merger requires commission's approval	No telephone franchise where a company is giving adequate service unless commission consents	Not within jurisdiction of commission
Oklahoma 1907	Commission may order improvements and require reasonable service			Not within jurisdiction of commission
Oregon* 1912	Commission may fix standards, make tests, require reasonable service and improvements	Franchises granted by cities with appeal to commission		Not within jurisdiction of commission
Rhode Island 1912	Commission may fix standards, make tests, order reasonable service upon complaint	New franchise granted by cities subject to appeal to commission		Not within jurisdiction of commission
Vermont 1908	Commission may fix standards, make tests, order reasonable service		Commission cannot prevent or restrict competition	Within jurisdiction of commission
Washington 1911	Commission may fix standards, order adequate service and improvements			Within jurisdiction of commission, except as to rates
Wisconsin 1907	Commission may fix standards, make tests, order reasonable improvements	All franchises indeterminate	Only with approval of commission	Within jurisdiction of commission

*This act will be submitted to popular referendum at the November election, 1912.

TABLE V

Procedure and Judicial Review

State and Year Established	Initiation of Proceedings	Enforcement of Commission's Orders	Court of First Instance	Reviewable Questions	Effect of Commission's Findings	Stay of Commission's Orders
California 1912	On complaint or commission's motion	By court proceedings	Supreme Court	Legality and regularity of orders	Final as to facts	Only by giving bond to refund overcharge if commission's rate is sustained
Connecticut 1911	On complaint	By court proceedings	Superior Court	Legality and propriety of orders	Same as findings of inferior court	By appeal to court
Georgia 1907	On complaint or commission's motion	By court proceedings	Superior Court of Fulton County	Law and facts		By appeal to court
Kansas 1911	On complaint or commission's motion	By court proceedings	District Court	Legality and reasonableness of orders	Prima facie valid	By injunction
Maryland 1910	On complaint or commission's motion	By court proceedings	Circuit Court	Legality and reasonableness of orders	Prima facie valid	By injunction after notice and hearing
Massachusetts 1885	On complaint or commission's motion	By court proceedings	Superior Court	Law and fact	Same as findings of inferior court	By appeal to court
Massachusetts 1906	On complaint	Commission can not make orders				
Nevada 1911	On complaint	By court proceedings	District Court	Legality and reasonableness of orders	Prima facie valid	By injunction. Commission's rates cannot be suspended
New Hampshire 1911	On complaint or commission's motion	By court proceedings	Superior Court	Legality and reasonableness of orders	Prima facie valid	Only by giving bond to refund overcharge if commission's rate is sustained
New Jersey 1910	On complaint or commission's motion	By court proceedings	Supreme Court	Lack of evidence. Without jurisdiction of Board		By order of court
New York 1907	On complaint or commission's motion	By court proceedings	Supreme or other court of competent jurisdiction			If order is not obeyed, commission brings action to enforce same
Ohio 1911	On complaint or commission's motion	By court proceedings	Court of common pleas	Legality and reasonableness of orders		Only by giving bond to refund overcharge if commission's rate is sustained
Oklahoma 1907	On complaint or commission's motion	Commission enforces its own orders	Supreme Court	Legality and reasonableness of orders	Prima facie valid	Only by giving bond to refund overcharge if commission's rate is sustained
Oregon* 1912	On complaint or commission's motion	By court proceedings	Circuit Court	Legality of order	Prima facie valid	By court with bond to refund overcharge if commission's rate is sustained
Rhode Island 1912	On complaint or commission's motion	By court proceedings	Supreme Court	Legality and reasonableness of orders Errors of law.	Same as findings of inferior court	By appeal to court
Vermont 1908	On complaint or commission's motion	By court proceedings	Supreme Court	Judgment and decrees on facts found by commission	Final as to facts	By appeal to court
Washington 1911	On complaint or commission's motion	By court proceedings	Superior Court	Legality of orders	Prima facie valid	Only by giving bond to refund overcharge if commission's rate is sustained
Wisconsin 1907	On complaint or commission's motion	By court proceedings	Circuit Court of Dane County	Legality and reasonableness of orders	Prima facie valid	By injunction after notice and hearing

*This act will be submitted to popular referendum at the November election, 1912.

only the chairman is paid, and in six other States the chairman receives a higher salary than his colleagues. In most cases commissioners are required to devote their entire time to the work and are forbidden to own any interest, direct or indirect, in public service businesses or to engage in any pursuit incompatible with their office.

Wide differences appear in the financial support accorded to public service supervision in the several States. The commissions of Georgia, Nevada, New Hampshire, Rhode Island, and Vermont are so hampered by niggardly appropriations as to be necessarily ineffective. On the other hand, the two New York commissions are generously treated by the legislature: not only are there ten commissioners at an aggregate salary of $150,000 but there is abundant provision for expert service and for research and library facilities. The Wisconsin, Washington, and Ohio commissions are likewise liberally, though not lavishly, supported.

UTILITIES INCLUDED

Telephone companies are subjected to commission-control in each of the seventeen States, street railways save only in Nevada (where none exist), gas and electric companies in all but Oklahoma, and water companies except in Georgia, Massachusetts, New York, Oklahoma, and Vermont. Heating companies are specifically mentioned in eight of the acts, wharves and warehouses in two, refrigerating and sewerage companies in one each. In most cases, railways, and generally other carriers as well, are under the jurisdiction of the same commission as urban utilities. In California, Georgia, Oregon, and Wisconsin the new duties were added to those of existing railroad commissions; in Kansas and Nevada the old

commissions were given new names as well as broader jurisdiction; in Connecticut, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Vermont, and Washington, the old boards were abolished and their powers transferred to public service commissions; lastly, in Maryland and Oklahoma the public utilities commissions were created outright. Only in Massachusetts is the supervision of public service corporations divided.

POWERS AND DUTIES OF THE COMMISSIONS

The keynote of the acts under review is *administrative* as distinguished from legislative or judicial control. Accordingly, it has been sought to create independent tribunals of great power and dignity, clothed with ample discretion in the discharge of the important duties entrusted to them, and freed so far as possible from judicial or political control. The several commissions differ much in the thoroughness with which these principles have been carried out, and their effectiveness will be found to vary pretty directly with the degree of approximation to the ideal above suggested.

INQUISITORIAL POWERS

Regulation by commission has been happily styled "the method of intelligence".[147] Public service companies have no legitimate business secrets, since they have no competitors to fear and nothing to conceal unless it be some practice contrary to the public interest. Extortionate profits, stock watering, rebates, discrimination, and political "deals" flourish in secret but can not stand the light of public knowledge. Hence regulative bodies, from the creation of the Massachusetts Gas Commission to the present day, have found publicity a most potent

means of control. Accordingly, all public service commissions nowadays are given authority to summon witnesses, compel testimony, and enforce the production of books and papers. In a word, they are granted power to make searching inquiry into any transaction affecting the public interest. Annual reports in great detail also are usually required from public service corporations. What is even more important, most of the commissions are empowered to supervise accounts and to make valuations of utility properties through their own staffs.

PROVISIONS RELATIVE TO ACCOUNTS

In Wisconsin, Oregon, Nevada, Massachusetts, and Kansas the commissions must prescribe the mode of keeping accounts which must be uniform for utilities of the same class, and must secure annual reports of the operation and condition of all public service enterprises.[148] Similar powers are vested in the discretion of the commissions of California, Georgia, Maryland, New Hampshire, New Jersey, New York, Ohio, Oklahoma, and Washington.[149] Wisconsin, Oregon, Ohio, New Jersey, and California specifically provide for separate depreciation accounts and the compulsory maintenance of depreciation funds,[150] and similar requirements are no doubt within the power of any commission which is authorized to prescribe uniform accounts. A number of States provide that the system of accounts adopted shall conform so far as practicable to that prescribed by the Interstate Commerce Commission. Usually the keeping of any accounts, records, or memoranda other than those prescribed by the commission is prohibited; and Kansas[151] makes it a felony to falsify or destroy utility accounts. Only Wisconsin, Oregon, and Kansas explicitly provide

for the auditing of accounts[152]— without which "publicity" may be more nominal than real. In no State, probably, does the "auditing" amount to more than a checking up of the reports submitted by the utilities, and that much is attempted by commissions which have no express power to audit. Lastly, three States — Connecticut, Rhode Island, and Vermont — make no provision for publicity or uniformity of accounts.

VALUATION OF PUBLIC SERVICE PROPERTIES

The commissions of Wisconsin, Washington, Oregon, and Oklahoma must,[153] and those of California, Georgia, Maryland, Nevada, New Jersey, and Ohio may ascertain the value of all public service properties in their respective States.[154] Four other commissions are empowered to make valuations in specific cases for rate determination. Wisconsin was the pioneer in the matter of valuation, and the Wisconsin act remains the model of advanced legislation in this particular.

REGULATION OF CAPITALIZATION

Massachusetts led the way in regulating the capitalization of public service corporations, stock watering having been forbidden in that State as long ago as 1868.[155] The Board of Gas and Electric Light Commissioners has from the first had the power of approval and disapproval over the securities issued by the corporations under its jurisdiction. The New York act of 1907 goes further, providing that no securities to run more than twelve months shall issue except for certain specified purposes, and then only with the approval of the Public Service Commission, which also is charged with the duty of seeing that the proceeds are applied in accordance with the

law.[156] California, Georgia, Maryland, and New Hampshire follow New York in this respect.[157] The Wisconsin stock and bond law of 1911 is still more thoroughgoing.[158] Like Massachusetts, Wisconsin prohibits stock or scrip dividends, shareholders' privileged subscriptions, or the issue of stock for less than its face value actually paid in. Like New York, though in greater detail, the Wisconsin act defines the purposes for which stocks or bonds may be issued and makes the Railroad Commission's approval necessary to their validation. Wisconsin further empowers the Railroad Commission to fix the terms in accordance with which stocks or bonds shall be issued, distinguishes between securities sold for money and those exchanged for property or services, makes the Commission's valuation conclusive with respect to the latter, and requires the amortization (or retirement at maturity, by means of a sinking fund) of indebtedness not properly chargeable to capital account. Kansas[159] and Ohio[160] have almost equally rigorous restrictions. The acts of New Jersey and Vermont are less explicit, merely requiring the commission's approval for the issuance of securities running more than one year.[161] The commissions of Connecticut, Nevada, Oklahoma, Oregon, Rhode Island, and Washington have no jurisdiction over capitalization.

MERGER OF PUBLIC SERVICE COMPANIES

Ten States seek to control the merger or consolidation of public service companies. Massachusetts permits lighting companies in the same or contiguous municipalities to combine upon terms approved, after a public hearing, by the Board of Gas and Electric Light Commissioners.[162] Ohio allows competing utility corpora-

tions, with the consent of the Public Service Commission, to enter into operating agreements.[163] In California no sale, lease, or assignment of the plant, property or franchise, and in Ohio no sale or lease of the plant of one public service company to another can be made without the consent of the commission.[164] The commission's authorization is required for the sale, lease, assignment or transfer to any person or corporation of a public utility franchise in New York and Kansas, and of either plant or franchise in Maryland, New Hampshire, and New Jersey.[165] California, Kansas, Maryland, New Hampshire, New Jersey, New York, and Ohio forbid any utility company to acquire or hold stock in another without the commission's consent.[166] Wisconsin provides that no utility shall purchase the property of another at a higher valuation than that fixed by the Railroad Commission.[167] Seven States — California, Maryland, Massachusetts, New Jersey, New York, Ohio, and Wisconsin — prohibit the capitalization of any consolidation or any contract of merger.[168] Oklahoma permits competing utilities to combine only with the consent of the legislature upon the recommendation of the Corporation Commission, and forbids even the legislature to allow the consolidation of any public service company with any similar corporation organized under the laws of another State or of the United States.[169] California, Ohio, and Wisconsin also provide that no public utility franchise shall hereafter be granted or transferred "except to a corporation duly organized under the laws of this State."[170]

Many of the foregoing prohibitions are likely to prove ineffective, because not specifically applicable to holding companies, which is the modern and most common form

of consolidation. In Massachusetts, for instance, it is easy by means of "voluntary associations" or other transparent subterfuges to merge lighting companies that serve non-contiguous territories in violation of the apparent intent of the law and without applying to the Board of Gas and Electric Light Commissioners. A case in point is the control of gas and electric companies in Leominster, Clinton, Ayer, Spencer, Arlington, Milford, Northampton, North Adams, Adams, and Williamstown by the Massachusetts Lighting Companies.[171] Of the ten States above mentioned, California, Kansas, New Hampshire, Ohio, and Wisconsin, as well as Massachusetts, make no provision against such a contingency. New York and Maryland forbid the acquisition of more than ten per cent, and New Jersey of a majority, of the capital stock of a public service company by any corporation other than a public utility company.[172] Even this prohibition may probably be evaded by calling the holding company a "voluntary association" or a "board of trustees".

REGULATION OF RATES

Two objects are sought in rate regulation, namely, that all rates shall be reasonable and that there shall be no discrimination. The principal devices to secure these ends are (1) the definition of the duties of public utilities, (2) the rate-fixing power of commissions, (3) publicity of rates, and (4) the requirement that published schedules shall be strictly adhered to.

Sections declaratory of the common law duties to serve all applicants without discrimination, to provide reasonably adequate facilities, and to charge only reasonable rates, rentals, fares, tolls, or prices are found in

most public utility acts. Many of the laws define "unjust discrimination" in some detail. Seven States provide that no utility shall "charge, demand, collect or receive from any person, firm, or corporation a greater or less compensation for any service rendered or to be rendered by it . . . . than it charges, demands, collects or receives from any other person, firm or corporation for a like and contemporaneous service".[173] Rebates in any form whatever are explicitly forbidden by all of the acts under review.

The commissions of Wisconsin, Washington, Vermont, Rhode Island, Oregon, Oklahoma, Ohio, New Jersey, Nevada, Kansas, Georgia, and California are empowered to fix *exact*,[174] the commissions of New York, New Hampshire, Maryland, and Connecticut, and the Massachusetts Board of Gas and Electric Light Commissioners, *maximum* rates.[175] The Massachusetts Highway Commission has only recommendatory powers over telephone rates.[176] The power to fix rates carries with it the authority to make classifications and to permit differential charges corresponding to substantial differences of conditions.

To guard against discrimination, California, Kansas, Nevada, New Hampshire, New Jersey, New York, Ohio, Oregon, Rhode Island, Vermont, Washington, and Wisconsin require every public service company, and Maryland requires every common carrier, to file with the commission and to keep open to inspection at its own offices schedules showing every rate or charge for any product or service furnished by it.[177] To prevent "midnight rates", put into effect for the benefit of favored customers and withdrawn before they become generally known, the States just mentioned, except New Jersey,

require from ten to thirty days' notice to the commission for any change in an existing schedule. California, Kansas, New Jersey, and Wisconsin provide that no *increase* shall be made without a specific order of the commission.[178] The commission has besides, in each of the foregoing thirteen States, the power to disallow a proposed schedule, or any particular rate therein. And, lest an increase be inadvertently permitted, all of these States require that every change from an existing schedule shall be plainly indicated, while Washington further provides that the commission's attention shall be especially called to any increased charge.[179]

Lastly, to forestall rebating, ten States prohibit under heavy penalty any departure from the published schedule. The language of the New York act is: "No corporation or municipality shall charge, demand, collect or receive a greater or less or different compensation for any service rendered or to be rendered than the rates and charges applicable to such services as specified in its schedule filed and in effect at the time".[180] Provisions to the same effect and in nearly the same words are found in the laws of California, Kansas, Maryland, Nevada, Ohio, Oregon, Rhode Island, Washington, and Wisconsin.[181]

REGULATION OF SERVICE

The most important provisions respecting service are those empowering the commissions to (1) prescribe standards of products or services, (2) make tests and inspections, (3) order additions to, or betterments of, plant and equipment, and (4) compel joint service by two or more companies.

Fourteen public service commissions — all save those

of Georgia, New Hampshire, and Oklahoma, and the Massachusetts Highway Commission — are authorized to fix standards of quantity and quality for some or all public utilities.[182] The purity, pressure, illuminating power, and heat value of commercial gas; the initial voltage of electricity and the initial efficiency of electric lamps; the purity and pressure of water; and the "headway" and seating capacity of street cars are among the things to be thus standardized.

Authority to investigate any particular utility upon complaint is possessed by all public service commissions. Continuous inspection of plant, service, and equipment is partially provided for only by Wisconsin, Washington, Oregon, New York, New Hampshire, and Massachusetts.[183] Provision for the public inspection of consumers' meters is more general. In Massachusetts, Maryland, New York, and Washington no gas meter can be set until tested, approved, and sealed under the commission's authority.[184] In Washington the same requirement applies to water meters.[185] In New York and Washington no electric meter can be installed unless of a type approved by the commission.[186] In Oregon the commission may forbid the installation of any meter until tested and approved.[187] The commissions of Wisconsin, Oregon, and Rhode Island are commanded, and those of Ohio, New Jersey, and California are authorized, to "provide for the examination and testing of any and all appliances used for the measuring of any product or service of a public utility."[188] In Kansas the commission must "prescribe reasonable regulations for examinations and testing of such products or service and for the measurement thereof."[189] Lastly, in twelve States any consumer of gas or electricity may have his meter tested

upon payment of a fee which must be refunded by the public service company if the meter is found to be incorrect.[190]

The power to order that any public utility shall make such repairs, improvements, alterations, or additions in or to its plant, equipment, or facilities as after hearing are found to be reasonably necessary to the public convenience is, by inference at least, conferred upon all the public service commissions hereinbefore enumerated, except the Massachusetts Highway Commission which can only make recommendations.

Joint use of facilities, maintenance of through routes over the lines of separate companies, or other forms of joint service are specifically provided for by nine States. In California, Connecticut, Maryland, Ohio, and Oregon the commissions may require physical connection of street and interurban railways.[191] In Connecticut the Public Utilities Commission may establish through service over two or more lines of railway or street railway.[192] In California, Ohio, Oklahoma, Washington, and Wisconsin physical connection between the lines of separate telephone companies may be required.[193]

SAFETY REGULATIONS

Public utility acts usually contain clauses declaratory of the common law duty to maintain "safe" conditions. Probably most, if not all, of the States have statutes specifically defining this duty with respect to railways, street railways, manufacturing establishments, and handlers of electricity. In addition, ten States give their public service commissions power to remedy conditions found, upon hearing, to be dangerous and to make orders in specific cases calculated to promote the health and

safety of employees or of the public. The Washington statute is the most explicit, empowering the commission to prescribe standard safety appliances, to inspect the track and equipment of street railways, and to order repairs or improvements in gas, electric, and water works.[194]

Twelve States require public utility companies to report accidents to their public service commissions. Such report must be made by telegraph in Kansas,[195] by telephone in Connecticut,[196] "immediately" in Nevada, New York, Oregon, Rhode Island, Vermont, and Wisconsin,[197] within twenty-four hours in Massachusetts,[198] within thirty days in Maryland,[199] and as the commission may require in California.[200]

REGULATION OF COMPETITION

Massachusetts was the first State to adopt the policy of regulated monopoly in public service businesses. So long ago as 1885 it was enacted that any gas company already in operation in that State might appeal to the Board of Gas Commissioners against the granting of a franchise to a competitor.[201] The same right was extended to electric companies in 1887.[202] The Board, for its part, has throughout declined to sanction competition in any case where the existing companies were furnishing, or could be induced to furnish, adequate service.[203] Eight other States now apply the same policy to some or all of their public utilities.

In California no street railway, gas, electric, telephone, or water company can begin construction or operation in any municipality not already served by it without first obtaining from the Railroad Commission a certificate that public convenience and necessity will be

served thereby.[204] No one can enter into competition with any existing urban utility in Wisconsin[205] or with any telephone exchange in Ohio[206] without a similar certificate. Kansas, Maryland, New Hampshire, New Jersey, and New York require every new public service company to obtain from the State commission a certificate of public convenience and necessity before beginning business.[207] Other States give their commissions no power in the premises, and Vermont[208] expressly provides that the Public Service Commission shall not prevent or restrict competition.

REVOCABLE FRANCHISES

The power to prevent competition is important for the avoidance of needless waste; while the right to permit competition is chiefly valuable as a club to compel adequate service by existing companies. To make such a right effective there must exist somewhere the authority to cancel existing franchises which purport to grant exclusive privileges for specified times. Wisconsin secures this end by its indeterminate permit law of 1911 which declares that every franchise is terminable and that any municipality may, upon convincing the Railroad Commission that public convenience and necessity require it, license a new utility corporation to serve its inhabitants, any and all prior grants to the contrary notwithstanding.[209] Massachusetts authorizes the revocation of "locations", or the removal of pipes, poles, etc., for the violation by the grantee of the terms of the grant, or of the laws of the State, or of a valid municipal ordinance.[210] Connecticut amends all charters or franchises whensoever granted, so as to make them conform to the public service act of 1911.[211] Rhode Island explicitly declares,

what would be implied in any case, that all future franchises shall be made subject to the provision of the public utilities law.[212]

MUNICIPAL PLANTS

Four States restrain municipalities from entering into competition with existing utilities. In New York[213] no municipality, and in Maryland[214] no city or town but Baltimore, may construct or acquire a gas or electric light plant, except for municipal uses exclusively, without first obtaining the consent of the Public Service Commission. Wisconsin requires a municipality which votes to engage in a public utility business to purchase any existing utility plant of the same kind at a price and upon terms to be fixed, in default of agreement, by the Railroad Commission.[215] The same requirement applies in Massachusetts to gas or electric works, except that the appraisal is made by court commissioners.[216] In Massachusetts, however, public purchase is contingent upon the consent of the owners; whereas in Wisconsin the owners may be forced to sell.

Municipal plants, once acquired, are placed under the jurisdiction of the public service commissions: as to accounts, in New Jersey;[217] except as to rates, in Washington;[218] and to substantially the same extent as privately owned works, in Vermont, Wisconsin, New York, and Massachusetts.[219]

POWERS RESERVED TO MUNICIPALITIES

In none of the States under review are the local authorities deprived of their right to grant franchises to, or make contracts with, public service corporations. In no case, probably, with the possible exception of tele-

phone companies in certain States, may any such corporation occupy the public streets without the city's consent. But in Massachusetts and Wisconsin no competing franchise, and in California, Kansas, Maryland, New Hampshire, New Jersey, and New York, no grant of any sort is valid without the approval of the State commission.[220] The commissions of California, Kansas, New Hampshire, and New Jersey may, before giving their approval, make such modifications in a municipal grant as the public interests seem to require.[221] In Georgia all contracts between municipalities and utility companies are made subject to the assent of the Railroad Commission.[222]

Kansas, Oregon, and Wisconsin expressly reserve to the municipal government the power "To determine by contract, ordinance or otherwise the quality and character of each kind of product or service to be furnished or rendered by any public utility furnishing any product or service within said municipality and all other terms and conditions not inconsistent with this act upon which such public utility may be permitted to occupy the streets", and to require additions and extensions to be made when reasonably necessary.[223] Ohio empowers cities to regulate rates, require extensions, and make contracts with public utilities.[224] Massachusetts and Vermont give the selectmen of a town and the mayor and aldermen of a city fairly wide powers over the location and construction of tracks, wires, poles, pipes, and other structures in or under the streets.[225] But in Kansas, Massachusetts, Ohio, Oregon, Rhode Island, Vermont, and Wisconsin an appeal lies from every order of the local authorities to the State commission.[226] And in the other States the authority of the commission as to mat-

ters within its jurisdiction is paramount to that of any municipality. California, however, permits any city to decide by referendum vote whether it will retain the powers possessed by it prior to the enactment of the public utilities law.[227]

INITIATION OF PROCEEDINGS

Proceedings may be begun by the commission itself, save in Connecticut and Nevada; by the utility company affected in California, Connecticut, Kansas, Maryland, Massachusetts, New Hampshire, New York, Oregon, and Wisconsin;[228] and in all the States by municipal authorities, boards of trade, or a specified number of consumers or taxpayers. Summary proceedings and hearings before a single commissioner, as well as formal hearings by the full board, are usually provided for and none of the commissions is bound by technical rules.

ENFORCEMENT OF COMMISSION'S ORDERS

Violation of the public utilities statutes or of the lawful orders of a public service commission is in every State, visited with criminal and civil penalties to be enforced through the ordinary courts. In addition, sixteen States provide that the commission may apply to the courts for injunction, mandamus, or other process to compel compliance with its orders, or that the Attorney General shall make such application upon the commission's request. Oklahoma endows the Corporation Commission with the powers of a court to enforce its orders by its own processes.[229] The Massachusetts Highway Commission can only report to the General Court that telephone companies have, or have not, complied with its recommendations.[230]

COURT REVIEW

A principal object of the public utility acts is to do away with the endless delays, enormous expense, and great uncertainty of litigation. This end is sought to be secured (1) by providing an expert and impartial tribunal to which utility companies and their patrons alike may confidently look for cheap, speedy, and exact justice, and (2) by making the decisions of this tribunal, so far as possible, final.

All of the acts under review provide that parties in interest shall have notice and full opportunity to be heard before an order is made in any matter of consequence. This requirement, together with the freedom of a State commission from merely local influence, affords a sufficient safeguard against the haste and passion of city councils. The further fact that commissions are continuous bodies, devote their entire time to a single class of economico-legal inquiries, have ample powers of inquisition, are (or may be) equipped with staffs of experts, and are unhindered by cramping technicalities, makes the public service commissions better tribunals for the determination of the questions that come before them than any courts can be.

Appeals from a public service commission may be discouraged and the final determination of causes hastened (a) by restricting the mode of appeal and the time within which appeals must be commenced, (b) by confining the power of review to certain courts, (c) by limiting the questions reviewable, (d) by forbidding the introduction in judicial proceedings of evidence not presented to the commission, (e) by giving peculiar weight to the commission's findings, (f) by giving cases of this

class precedence over others on the court calendar, and (g) by making delay in itself of no advantage to the appellant.

In California, New Jersey, and Washington the commissions' decisions can be reviewed only by *certiorari;*[231] in Connecticut, Oklahoma, Rhode Island, and Vermont, only by appeal.[232] Either mode at once precludes a trial *de novo*. In Kansas, Maryland, Nevada, New Hampshire, Ohio, Oregon, and Wisconsin the procedure is an action by the party aggrieved to set aside an order of the commission.[233] In Georgia, Massachusetts, and New York, the courts obtain jurisdiction by means of suits to enforce the commission's orders or to recover penalties for the violation thereof.[234] The disadvantage of the last mentioned mode of review is that thereunder an order, if questioned, does not become effective until sustained.

The time within which an appeal or other court proceeding must be begun ranges from seven days in Rhode Island to ninety days in Nevada, Oregon, and Wisconsin. Most of the statutes also limit the time for filing answers and taking appeals to the highest State court. Georgia, Massachusetts, New Jersey, and New York impose no time limits.

Since the decision of an inferior court is not likely to be final in any important case, much time and expense would obviously be saved by confining the power of review to the court of last resort. Unfortunately, however, the constitutions of many States make such a limitation impossible. In fact, only four of the public utility statutes — those of California, Oklahoma, Rhode Island, and Vermont — provide for review in the first instance by the highest court of the State.[235] Georgia and Wisconsin,

however, require that suits to vacate an order of the commission shall be prosecuted only in the county wherein the State capital is situated.[236]

Most of the statutes empower the courts to pass upon the legality and reasonableness of the commissions' orders. Connecticut[237] adds "propriety and expediency" to the matters to be determined. Oregon[238] permits an action to vacate an order of the commission only on the ground that the same is unlawful. These various expressions come to substantially the same thing since what is unreasonable is unlawful and propriety is a question of reasonableness. Only New Jersey and California effectually limit the power of review in this respect. New Jersey gives the Supreme Court jurisdiction to set aside an order of the Board of Public Utility Commissioners only "when it clearly appears that there was no evidence before the board to support reasonably such order, or that the same was without the jurisdiction of the board."[239] California enacts that the review "shall not be extended further than to determine whether the commission has regularly pursued its authority, including a determination of whether the order or decision under review violates any right of the petitioner under the constitution of the United States or of the State of California."[240]

In times past corporations have often failed to present important evidence to a regulative body, hoping thereby to secure a reversal upon appeal. California, New Jersey, Oklahoma, Vermont, and Washington forestall such an expedient by requiring the court of review to determine the case upon the evidence certified by the commission.[241] Wisconsin, Rhode Island, Oregon, New Hampshire, Nevada, and Maryland provide that when any new

evidence is presented to a court the case shall automatically revert to the commission for further hearing.[242] Either requirement should secure a full presentation before the commission and should greatly lessen the cost of litigation by doing away with the taking of testimony by a master in chancery or otherwise.

California and Vermont make the findings of their commissions final as to facts, and the California act comprises under this term "ultimate facts and the findings and conclusions of the commission on reasonableness and discrimination."[243] A valuation made by the Public Service Commission of Washington, when once accepted by the corporation concerned or, if appealed from, when affirmed or corrected by the courts, is thereafter conclusive of the value of the property affected at the time of the valuation.[244] In nine States it is expressly declared, though it would be true without such declaration, that the findings of the commission are *prima facie* valid. Maryland, Nevada, New Hampshire, Oregon, and Wisconsin place upon the party seeking to vacate an order of the commission the burden of showing by "clear and satisfactory evidence" that the order complained of is unlawful or unreasonable.[245] This phrase has been judicially declared to require more than a fair preponderance of evidence.[246]

To hasten the final determination of public utility cases as much as possible ten States give to such cases preference over ordinary civil cases.

It is notorious that litigation often is resorted to solely for the sake of delay. To postpone a rate reduction is the next best thing to defeating it altogether. If instances are wanted it may be called to mind that the Cedar Rapids ninety cent gas ordinance was held up for

six years by means of successive appeals.[247] The ordinance of Knoxville, Tennessee, regulating water rates, though enacted in 1901, only became effective in 1909.[248] The public utility litigation of Des Moines, later referred to, likewise affords striking illustrations of delay in the putting into effect of rate ordinances.

The incentive to such procrastination is removed by the Constitution of Oklahoma.[249] No rate order of the Corporation Commission of that State can be stayed or suspended unless the appellant first gives bond to refund any excess collected during such suspension over the rates finally sustained by the courts. To make this requirement effective, the appealing company is compelled to keep a separate account with each consumer, showing the amount of overcharge collected and the name and address of the person to whom the same may become refundable — an amount of bookkeeping not to be undertaken with a light heart. California[250] and New Hampshire[251] follow Oklahoma in both requirements. Ohio, Oregon, and Washington exact the supersedeas bond to refund overcharges, but do not expressly require the keeping of separate accounts.[252] Nevada goes even further, enacting that "all rates fixed by the commission shall be deemed reasonable and just, and shall remain in full force and effect until final determination by the courts having jurisdiction."[253] This requirement probably means that rate cases in Nevada will be taken directly to the Federal courts. The statutes of Wisconsin[254] and Maryland,[255] as well as of most of the States just enumerated, contain the rather futile provision that no injunction suspending an order of the commission shall issue except after notice to the commission, and hearing. Washington and California require, in addition, "a spe-

cific finding based upon evidence submitted to the court making the order and identified by reference thereto, that great or irreparable damage would otherwise result to the petitioner, and specifying the nature of the damage''.[256] In the other commission States an appeal to the courts operates of itself to stay the order appealed from.

COMPARATIVE ESTIMATE

As might have been expected, the later public utility statutes are largely based upon the earlier. The Maryland act, except as to court review, is taken almost bodily from that of New York; and the Oregon law, with some important omissions, was copied from that of Wisconsin. Ohio and Kansas used both the Wisconsin and New York statutes as models for imitation. Washington copied from Oklahoma the provision as to the evidence admissible upon review and the iron-clad rule as to suspending an order of the commission. The California act was drawn in 1911, after a careful study of existing legislation,[257] and is the most catholicly eclectic of all. By way of contrast it appears that the Connecticut legislature, though acting in 1911 and after the report of a special committee,[258] profited but little by the experience of other States.

With respect to form, the public utilities acts of California, Washington, and New Jersey are the clearest and best arranged, and those of Ohio and Kansas the worst planned and most confused, of the statutes enacted, so to speak, in one piece. Especially admirable in this particular is the California act. Beginning with an analytical table of contents and closing with a full index, the statute comprises (1) general provisions with respect to the Railroad Commission, (2) definitions of the duties of

public utilities, (3) an enumeration of the powers and duties of the Railroad Commission, (4) regulations of procedure before the commission and the courts, and (5) saving clause, appropriation, and repealer. The public utility laws of Massachusetts and Vermont, having been enacted, repealed, and amended for many years past, and never having been codified, are naturally anything but models of logical and lucid arrangement. The same remark holds, though to a less degree, of the thirty or more utility and railroad acts of Wisconsin.

In point of content no one act comprises all of the most effective features. The Wisconsin law is superior to all others in its provisions for indeterminate permits and for the regulation of municipal enterprises and is the equal of any in the control of capitalization. New York and the States which follow it in this particular provide the most effective control of mergers and consolidations. The Oklahoma plan for preventing dilatory appeals is the best yet devised. Moreover, Oklahoma was the first State to limit the evidence upon appeal to the record certified by the commission. Vermont was an innovator in making the commission's findings of fact conclusive upon courts of review. The California law contains many, but not all, of the strongest provisions of the other statutes, and in its restrictions upon judicial review is the most stringent yet enacted. It is evident, therefore, that the "model statute" must be a composite one, though it could probably be made up from the acts of Wisconsin, California, New York, and Washington.

OPERATION OF THE PUBLIC UTILITY ACTS

Most of the public service commissions have been in existence too short a time to admit of any conclusive

judgment as to their practical efficacy. The exceptions are the Massachusetts Board of Gas and Electric Light Commissioners, which was created in 1885; the Wisconsin Railroad Commission, which received jurisdiction over urban utilities by an act of the legislature in 1907; and the Public Service Commissions of New York, which also date from 1907.

The Massachusetts board[259] has proven especially efficient in the control of capitalization. This board has all along insisted that capital must represent investment as measured by the structural value of the property, that a surplus can not be capitalized, that revenues in excess of reasonable operating expenses and fair interest and dividend requirements call for rate reductions, that depreciation must be met out of earnings, and that neither error of judgment nor downright dishonesty can be made the basis of corporate issues. Much of the board's time is taken up with petitions for the approval of proposed issues of stocks and bonds. In 1910 twenty-nine applications were made for the issue of $3,803,400 of securities, par value, whereof the board approved $2,969,600. It is especially significant that the stocks were placed on the market at an average premium of more than twenty-five per cent, and that none was offered at less than par.[260] In at least one case, where several companies were being consolidated, the consolidation was required to make good the difference between the structural value of the properties merged and the liabilities thereagainst outstanding.[261] In another case a company desired to issue $600,000 of stock and $400,000 of bonds for projected construction. It was permitted to issue $176,000 of stock and $124,000 of bonds for work already under way.[262] Such administrative watchfulness, coupled with rigorous

legislation, has prevented stock watering by the lighting companies of Massachusetts, except in the few notorious instances where great magnates were able to find or force breaches in the laws.

The Massachusetts commissioners have by no means confined themselves to matters of capitalization. They have exercised an important influence on rates, both directly by ordering reductions in particular cases, and indirectly through their powers of inquisition and the wholesome fear inspired in corporate managers by the presence of a regulative body. They have checked unwise attempts at competition, almost uniformly denying petitions for the erection of another plant where one already exists. The power to permit competition has, none the less, been effectively used to secure adequate service from existing companies. The commissioners did pioneer work in the matter of uniform accounts for gas and electrical companies and their annual reports are models of concise, significant, and intelligible information. The board has long been recognized as the expert adviser of the legislature upon all matters within its cognizance, and has often furnished valuable information, based on comparative statistics, to managers of municipal plants and even to private companies.

The Massachusetts commissioners have a highly creditable record for continuous service. Though appointed for only three years there have been but twelve commissioners in the history of the board, and but five since 1894. Chairman Barker has served continuously since the middle "eighties" and Commissioner Schaff for eighteen years. The appointees, almost without exception, have been men of high standing, chosen for non-political reasons.

The Massachusetts board makes no attempt to fix precise rates beyond prescribing the maximum, and hence is less effective than it might be in preventing discriminations. It does not undertake original valuations except as the need arises in particular rate or capitalization cases. It has no permanent engineering staff, though one of its members is an engineer. The board does, however, employ eight inspectors of gas, electricity, and gas and electrical meters.

The Railroad Commission[263] of Wisconsin has likewise been peculiarly fortunate in its personnel. Mr. Balthasur H. Meyer, formerly professor in the University of Wisconsin and now a member of the Interstate Commerce Commission, was its first chairman. Mr. Halford Erickson, formerly a railroad auditor, has been, perhaps, the dominating member of the commission throughout its history. Mr. Roehmer, an attorney and Professor Meyer's successor in the chairmanship, is also a man of ability and force. Mr. Harlowe, the most recent appointee, was formerly traffic manager of a large commercial firm. The commission has been singularly free from politics. Its appointments are for merit only. Its chief engineer, head accountant, and head statistician are university professors, and their principal subordinates are university graduates. The commission has also an economic expert with university trained assistants. Cooperation with the State University, indeed, is a main reason for the remarkable success of the Wisconsin commission. The commission's high reputation has been made in the work of valuation, rate-making, service-inspection, accounting, and the handling of complaints.

The Wisconsin commission regards physical value as a most important element in rate-making. Accordingly,

in every rate case it seeks to ascertain the first cost of the property used and useful for the convenience of the public, the cost of reproduction new, and the structural value or cost of reproduction less depreciation. The commission, largely in the person of Mr. Erickson, has carefully worked out the method and principles of utility valuation. Original cost is computed, wherever possible, from construction accounts. Variations in price are offset by taking the average for a term of years. Depreciation is reckoned from experience tables showing the expectable duration of the several items of plant and equipment. "Going value" is allowed for on an investment basis — the losses incurred and profits foregone at the inception of the enterprise, the cost of getting business and of putting the utility upon a paying basis. In the work of valuation the commission relies mainly upon its own engineering staff, the testimony of expert witnesses employed by litigants being given little weight. Valuations are made by the Tax Commission as well as by the Railroad Commission, and the two boards maintain a joint engineering organization. On the staff are men especially qualified to deal with each class of utilities.

The "cost" theory of utility rates has been especially emphasized by the Wisconsin commission, though not to the exclusion of other bases of rate-making. It is particularly insisted that no service shall be furnished at a price which does not yield something over and above prime costs toward the general expenses of the business. To this end a system of "unit costs" has been carefully elaborated whereby it is possible to ascertain, for example, the "output cost" of electricity per kilowatt, the "distribution costs", the "consumer costs" of reading meters, keeping accounts, rendering bills and the like,

and the "readiness to serve cost" entailed by a given number of lamps which may or may not be used simultaneously. The commission does not content itself with declaring the maximum reasonable charge, but makes schedules of exact rates based upon, or at least not violative of, the principle of unit costs. It is thus gradually bringing something like uniformity out of the bewildering confusion of schedules that has hitherto prevailed in Wisconsin as in other States, is effectively preventing discrimination, and is aiding the utilities themselves to place rate-making upon a scientific basis.

Careful classifications of accounts have been made, distinguishing not only between the several kinds of utilities but also between large and small enterprises of the same class. By means of the reports required under such classifications it is possible (a) to keep valuations, once made, up-to-date, (b) to secure sufficient and trustworthy data for intelligent rate-making, and (c) to compare the financial and physical results of one utility with another. The commission's supervision of accounts is of great value to the utilities themselves. Its suggestions are welcomed by the managers of municipal plants and even by the smaller private companies which can not employ expert accountants. Its published reports afford a mass of information as to the relative efficiency of different types and sizes of plants and equipment and different methods of production. Finally, what is even more important, these reports enable the people of each city, as well as its responsible officials, to criticize the management of their own utilities by comparison with others.

Besides preparing the classification of accounts, the statistical department of the Wisconsin commission checks up and compiles the reports of utilities, has charge

of all schedules filed, examines all revisions of the same for possible covert increases of rates, and prepares data for the use of the commission in pending cases.

For the purposes of gas and electrical inspection the State of Wisconsin is divided into districts with one or more traveling inspectors placed in each. Besides this official inspection, the utilities are required to maintain proving and testing apparatus, to prove meters, to test pressure, purity, voltage, and other service *indicia*, and to keep full station records which are checked up by the State inspectors. By these means, without any formal proceedings, many plants have been induced to install additional or more modern equipment, to adopt more careful stoking methods or a better grade of fuel, to maintain more uniform pressures, to give prompter attention to consumers' complaints, and generally to improve the service rendered. The changes thus brought about frequently are of as much advantage to the utility itself as to its patrons. The men ultimately responsible for the policy of a public service enterprise, whether they are members of a city council or of a board of directors, rarely are in close touch with actual operating conditions, and are commonly ignorant of the industrial side of the business. A small utility can not employ a staff of engineers and accountants: even the manager immediately in charge is not likely to be a man of thorough training or wide experience. Hence the commission's field agents, trained in criticism and familiar with conditions at many plants, can render some such aid as national bank examiners often supply to the institutions under their surveillance.

In furtherance of its inspectional work the commission has adopted thoroughly modern standards of quality

and measurement. As a single instance, the quality of gas is determined by its heat value instead of by the long obsolete candle-power standard still used in Massachusetts and other States.

The gas and electrical inspectors incidentally scrutinize telephone[264] as well as lighting service. The usual method is to make a certain number of calls, noting the time required to secure the operator's attention and to obtain connection, disconnection, and reconnection, and the operator's care in following up the call. When the first six or eight calls indicate poor service, a considerable number of tests is made, the deficiencies found are brought to the attention of the management, and a subsequent inspection had to see whether the defects have been remedied. Good work has likewise been done in the inspection and improvement of street railway service in Milwaukee and certain other cities.

The commission undertakes no regular inspection of water service, but it does nevertheless make tests of fire streams upon complaint and maintains a traveling laboratory for that purpose. For tests of the purity of water it employs the facilities and staff of the State Hygienic Laboratory.

Much of the valuation, accounting, and inspectional work of the Wisconsin commission is subsidiary and nearly all of it is useful to the determination of pending cases. Rates are never prescribed, nor extensive alterations of plant commanded, except after notice and a hearing, usually had upon complaint. The commission's handling of complaints and its conduct of hearings, accordingly, afford the most convincing test of its efficiency.

During the three years, 1907–1910, the Railroad Commission held 207 formal and 886 informal hearings upon

complaints affecting urban utilities. The number of important cases requiring formal hearings was abnormally large at first, when almost every city was seeking a redress of grievances against some public service company. Considerable delay and some criticism resulted from this unavoidable congestion. The commission has now, however, caught up with its work and finds not only that fewer complaints are made but that it is able to answer many of the questions presented almost automatically from its own past decisions.

The orders and decisions in formal cases are published in the *Wisconsin Railroad Commission Reports*, of which eight volumes have already appeared. The opinions are very full, containing most of the evidence presented and the significant findings of fact as well as the decision itself and the reasoning upon which it is based. In this respect the *Wisconsin Reports* differ markedly from those of most similar commissions which contain only a bare summary of the orders made.

The adjudications of the Wisconsin Railroad Commission are characterized by full and often prolonged inquiry, careful consideration, and great impartiality. In a rate inquiry, for example, the commission makes an original valuation of the property affected, analyzes the operating accounts for some years past (even to the extent of compiling the requisite data from original memoranda when necessary), ascertains the unit cost of each class of service and estimates the probable effects upon earnings and expenses of proposed changes in the rate schedule. Before authorizing an increase of capitalization the commission not only verifies the corporation's statements, but inquires into its financial history and the circumstances requiring a fresh issue of securities. With

all this thoroughness of inquiry, and the further guidance of well-thought-out principles, the Wisconsin commission is able to make its decisions consistent one with another and to command the confidence of those who come before it. Eloquent testimony to the commission's fairness is afforded by the fact that of some hundreds of utility cases decided by it but five have been appealed to the courts and in but two has the decision of the commission been reversed. By way of contrast, it may be mentioned that thirty-seven out of the first one hundred cases decided by the Corporation Commission of Oklahoma were appealed.

The Public Service Commissions of New York are the highest paid and best supported State administrative bodies in this country.[265] With abundant means at their disposal, the commissions maintain elaborate organizations, the divisions of the Second District, or up-State, commission being (a) administrative, (b) light, heat, and power, (c) statistics, (d) tariffs, (e) engineering and inspection, (f) telegraphs and telephones, and (g) traffic inspection. There is a large staff of engineers, accountants, statisticians, rating experts, bureau chiefs, inspectors, clerks, and stenographers — in all some one hundred and twenty-five employees besides the five commissioners. The commission of the First District has also a bureau of franchises, a librarian in charge of the most complete public service library in the United States, and a publicity agent. Both commissions employ high grade men. Mr. Wishart, statistician of the First District, was formerly with the Interstate Commerce Commission; Mr. Griggs, the tariff expert of the up-State commission, is an authority on rates; Delos F. Wilcox, chief of the down-State Franchise Bureau, is the author of *Municipal*

Franchises and other recognized works on municipal government; the Secretary of the First District commission, Mr. Travis H. Whitney, is a Harvard law graduate; and the librarian of the same commission is Dr. Robert H. Whitten, formerly of the Indiana State Library.

The up-State commission has not given much attention to physical valuation nor has it done much in the way of rate-making beyond compiling schedules and correcting personal discriminations. The commission for Greater New York City (*i. e.* First District) has made a number of property appraisals both in rate cases and in connection with applications for stock and bond issues. It has also reduced rates and increased transfer privileges on certain street car lines, and has ordered some reductions in electric rates, especially for break-down service. More attention has been given to service conditions. The commission of the First District made 1,378,627 tests of gas meters and 2,217 inspections of electric meters during the first four years of its existence.[266] This commission also exercises close surveillance over the surface, elevated, and subway lines of Greater New York and has enforced many improvements in service and facilities. The car-seat-mile, as a unit of transit service, appears to be original with the metropolitan commission. The up-State commission has had frequent occasion to refuse certificates of public convenience and necessity to would-be competing companies. Uniform accounts and the maintenance of depreciation funds is required in both districts, though the supervision in this respect is less thorough-going than in Wisconsin.

Both of the New York commissions attach great importance to the control of capitalization. In the First District, out of $307,824,940 of securities proposed by the

companies only $89,153,219 was approved by the commission.[267] The commission of the First District has done good work in accident prevention. Transportation companies are required to report every accident immediately by telephone and also to make a written report within twenty-four hours. The commission conducts inquiries and makes orders in all cases which appear to require such action. It ordered the installation of fenders, wheel guards, and other safety appliances (approved after elaborate experimental tests) upon all street cars. The results are seen in the falling off of fatal accidents on the transportation lines of Greater New York City from 600 in 1907 to 152 in 1910 and 169 in 1911.[268] Besides its other work, the commission of the First District is charged with the superintendence of subway construction — a unique function for a State public service commission.

Perhaps the most promising achievement of the New York commissions is the one which makes the smallest immediate impression upon the public — the increase and diffusion of knowledge. The commission at Albany has made original and valuable studies of public utility standards and accounts. The commission of the First District has compiled an exhaustive record of the franchise grants in Greater New York City, which should be of the greatest value in future litigation and in passing upon applications for the approval of securities. Both commissions have collected and tabulated thousands of rate schedules and have published reports showing the physical and financial condition of hundreds of corporations. It is just this unpicturesque and — immediately — unprofitable work which may count for most in preparing the way for effective regulation.

State control of urban utilities has had to win its way against powerful and persistent opposition. In the early history of the Massachusetts board public service companies were wont to resent the board's inquisitions as impertinent interference with private affairs. A curiously similar note was sounded by spokesmen of the Empire State Gas Association so late as the year of grace, 1907.[269] Professional promoters have urged with much feeling that only the prospect of unusual returns can induce them to risk other people's capital in the development of new enterprises.[270] Nor is it only corporation magnates who have lifted up their voices in anger and alarm. Advocates of municipal ownership have made strenuous objection to the compulsory purchase of private plants.[271] Persons who regard monopoly as the root of all evil have looked askance at any restraint upon competition. Home rulers have seen in the appellate and supervisory powers of State commissions a menace to local self-government.[272] Local politicians, who have found their importance diminished, their campaign stock in trade destroyed, and a never-failing source of personal and party revenue stopped, have not been slow to protest.[273]

Despite all this criticism from so many different sources the State commissions in Massachusetts, New York, and Wisconsin alike have gradually gained the confidence of the public and of the corporations subject to their supervision.[274] Experience has quieted honest fears and convinced interested alarmists of the futility of factional opposition. Public service companies have learned to make a virtue of submission, and investors have found, at least, that regulation is a blessing in disguise. Protected from cut-throat competition, from the attacks of petty politicians, from wasteful litigation,

from managerial infidelity, and above all from the piracy of speculative promotion and the robbery of high finance, urban utility properties for the first time have acquired a stable value. The proverbial widows and orphans, over whom so many tears have been shed by the vendors of worthless stocks, find that the securities of Massachusetts lighting companies represent something more substantial than attractive bits of blue sky. Nor have the other prophecies of evil been fulfilled: none of the disasters so freely predicted have come to pass. The growth of the lighting industry in Massachusetts has not been checked, nor has railway building ceased in Wisconsin or New York. Local self-government has not been extinguished, and the sacred constitutions are yet intact. The industrious inquirer nowadays learns from one set of opponents that the Railroad Commission of Wisconsin has favored "the interests" at the expense of the people,[275] and from another that it is driving the public service industries from that misguided State.[276] The two criticisms meet each other and afford perhaps the best testimony that could be adduced to the fairmindedness of the commission.

V

URBAN UTILITY REGULATION IN IOWA

URBAN utilities in Iowa have never been subjected to central administrative control. There is, to be sure, a harmless anti-stock-watering law, which forbids the issue of corporate stock at less than par, requires the approval of the Executive Council of the State for any issue of stock in exchange for property, commands the Executive Council to ascertain the value of the property so to be acquired, and makes its valuation conclusive as to the amount of stock which may be exchanged therefor.[277] But the Executive Council has neither engineers nor accountants for the work of valuation; nor has it the funds to undertake actual appraisals. In practice the Executive Council depends on the "sworn statements" of corporation officials and of two "disinterested persons"[278] — which may encourage perjury, but does not prevent stock watering.

So far, then, as urban utilities are regulated in this State, the regulation is by municipal franchise or ordinance. Cities have, in this respect, only the powers expressly conferred by the General Assembly;[279] and so an examination of the statutes will sufficiently disclose the extent of municipal regulation.

URBAN UTILITY FRANCHISES

Since the law governing franchise grants is not uniform for all the classes of urban utilities, it will be

conducive to clearness of exposition to follow the statutory classification in this regard.

A city council may authorize an individual or corporation to "erect, maintain, and operate" "heating plants, waterworks, gas works or electric light or electric power plants". But such grants are subject to three limitations: (1) no authorization can run for more than twenty-five years, at the end of which period the grant may be extended, renewed or amended; (2) no exclusive franchise can be "thus granted, amended, extended or renewed"; and (3) no franchise is valid until its precise terms have been submitted to, and ratified by, the qualified voters of the city at a general or special election.[280]

Cities and towns may authorize or forbid the construction of street railways within their limits, may define the motive power by which cars shall be propelled thereon, and may permit or forbid the laying down of tracks on particular streets, alleys, and public places.[281] There appears to be no time limit upon such grants, nor any requirement that they be submitted to a referendum vote. But the right to erect poles and string wires in the streets — without which, under existing conditions, street railway tracks are of little value — can only be granted by referendum.[282] To conclude this tale of inconsistencies, no grant can be made to an interurban railway for a longer period than twenty-five years.[283]

No franchise permitting the use of the streets or other public places of a city for "telegraph . . . . telephone, street railway, and other electric wires" can be granted except by affirmative vote of the qualified electors.[284] To a layman the implication is plain. Nevertheless, under an act authorizing the construction of telegraph or telephone lines "along the public roads of

the state",[285] the Supreme Court apparently has held that a city's consent is not necessary to such occupation of its streets.[286]

To say that the foregoing provisions for the different classes of utility franchises express no consistent policy is to put the matter very mildly. No reason can be assigned for the subtle distinctions made except that the several acts were passed at widely different times and without reference to each other.

POLICE ORDINANCES

The power to regulate public service companies by municipal ordinance likewise varies according to the class of such company in question.

With respect to gas, electric, and water companies a city or town may (1) require service to any applicant along the lines of the mains, wires, or conduits, (2) compel the furnishing to the city of water, gas, heat, light, or power for public purposes, and (3) regulate or fix the rates for service and the rents or charges for meters — and "these powers shall not be abridged by ordinance, resolution or contract."[287]

The ordinance power over street railways extends only to (1) the location and character of its tracks, poles, and wires, (2) the kind of motive power used, and (3) the amount of pavement which each such railway shall be required to construct and maintain.[288] Rates and service can, apparently, be regulated only by franchise or contract.

Cities and towns have the power "to authorize and regulate . . . . telephone . . . . and other electric wires, and the poles and other supports thereof, by general and uniform regulation, and to provide the manner

in which, and places where, the same shall be placed upon, along or under the streets, roads, avenues, alleys and public places''.[289] Seemingly, they have no power, either by franchise or ordinance, to regulate telephone rates or service.

MUNICIPAL OPERATION

The statutory provisions for municipal operation of public service industries in Iowa may conveniently be grouped under (1) power to operate, (2) financial restrictions, (3) accounts, and (4) administration.

Every city or town has power to purchase, erect, maintain, and operate, within or without the corporate limits, gas, electric, or water works; but such power can only be exercised after an affirmative vote of the qualified electors voting thereon.[290] When the franchise of a gas, electric, or water company has expired or been surrendered, if the city and company can not agree upon the terms of a new contract or grant, the plant may be condemned and purchased by the city at a valuation fixed by three district judges designated by the Supreme Court.[291] The right to acquire and operate street railways, not being expressly conferred, is, of course, withheld from Iowa municipalities.

Cities may issue bonds to buy or build municipal plants and may levy taxes to pay for the construction, repair, and operation of the same.[292] But such bonds can not be issued to an amount which, together with other bonds outstanding, will make an aggregate greater than five per cent of the taxable value of property in the city limits;[293] nor can the tax in support of any one utility exceed five mills on the dollar of such property.[294] Cities of the first class may, however, levy an additional two mill tax to create a sinking fund for water works bonds.[295]

Every municipality owning and operating any public utility must keep separate accounts showing "the true and entire cost of the said utility and operation thereof, the amount collected annually by general or special taxation for the services rendered to the public, and the amount and character of the service rendered therefor, and the amount collected annually from private users";[296] and it must make an annual public report stating in detail "the cost and operation and all income of each public utility operated or owned by the municipality."[297] The form of accounts, which is the same for all cities, is prescribed by the Auditor of State, and the books of cities of five thousand or more inhabitants are audited at least biennially by State Examiners.[298]

Water works operated by a city of the first class must be managed by a board of three water works trustees appointed by the Mayor for a term of six years.[299] No special form of administration is prescribed for other municipal utilities.

CRITICISM OF THE PRESENT SYSTEM

The statutes just reviewed can hardly be said to form an organic or consistent whole. There is no valid reason for denying to cities the same powers over telephones and street railways that they possess over lighting and water companies; nor is there any obvious need for imposing greater restrictions upon one class of utility franchises than another. Nevertheless, certain policies with respect to the regulation of urban utilities are fairly deducible from the Iowa statutes. These policies comprise: (1) a considerable measure of local autonomy; (2) strict legislative and judicial, with but slight administrative,

control; (3) reliance upon competition; (4) short-term franchises; and (5) permission of municipal ownership, though only within somewhat narrow limits. As regards present policies of Iowa in respect to the regulation of urban utilities it is very apparent from the considerations offered in the preceding sections of this paper that, with the exception of those numbered (1) and (5), these policies are not in accord either with expert opinion or with practical experience in other jurisdictions. Similar policies have been found wanting in other States and such preliminary investigation as the writer has been able to make strongly indicates that they have not been more successful in Iowa.

FAILURE TO REGULATE

In the first place municipal regulation does not regulate. Of seventeen cities concerning which the facts could be ascertained, two regulate telephone rates, none attempt to control street railway fares otherwise than by contract, nine have fixed the price of gas, and six the price of electricity by ordinance or franchise. In no case is there any effective regulation of service. Compensation to the grantor city was paid for only three out of fifty-four franchises. In seventeen cases the city receives a certain amount of free or reduced rate service — as a few free telephones or fire hydrants — which increases the burden upon consumers for the relief of taxpayers.

TABLE VI

PUBLIC UTILITIES OF SEVENTEEN IOWA CITIES[300]

Utilities	78
Privately owned utilities	66
Utility franchises	54

FAULTY RATE SCHEDULES

An examination of the published rates of about a dozen utility companies reveals many cases of discrimination due to badly designed schedules. The electric lighting tariff of a gas and electric company which is typical of a number of similar utilities in Iowa is as follows:

Basing rate, 12 cents per 1000 watts

Bills from	$ 1.70	to	$ 3.20	per month 10 per cent discount
Bills from	3.20	to	6.00	per month 15 per cent discount
Bills from	6.40	to	10.00	per month 20 per cent discount
Bills from	10.70	to	14.50	per month 25 per cent discount
Bills from	16.20	to	20.00	per month 30 per cent discount
Bills from	22.00	to	28.00	per month 38 per cent discount
Bills from	31.00	to	60.00	per month 40 per cent discount

Bills over $60.00 per month 5 cents per 1000 watts

This schedule is open to three objections. First, the discounts are so arranged that it is possible at several points to secure more current for less money. Thus fourteen kilowatts would cost $1.68, whereas fifteen could be had for $1.62; the net price for five hundred kilowatts would be $36, for six hundred kilowatts, $30. Second, the discounts are based solely on quantity consumed, without regard to maximum demand or hours of use. A factory which runs sixty lamps one hour daily uses the same cur-

rent, and under the above tariff would get the same rates, as an all night restaurant which runs six lamps ten hours a day. But the factory's instantaneous demand upon the generating plant is ten times that of the restaurant and its rate ought therefore to be higher. The practice of the Wisconsin Commission in such cases is to base discounts upon the monthly hours' use of the "active connected load", and this appears to be the only fair method. Third, large users appear to be unduly favored by the scale of discounts. Consumers of fourteen kilowatts per month pay twelve cents per kilowatt, consumers of more than five hundred kilowatts, five cents. The difference in cost of service is much less than the great difference in the rates charged to consumers.

The above electric schedule is in nowise unique in Iowa. Of eight tariffs for electric light or power, four offer discounts which admit of similar discriminations and only two distinguish between long and short-hour users of the same amount of current. Most of the gas schedules examined are upon a flat meter basis, which discriminates in favor of short-hour users. In several cases very low rates are made to large consumers and in at least one instance a charge of 90 cents is made in the main city and of $1.10 in a suburb served by the same company.

It must be remembered that the discriminations herein cited are simply those apparent upon the face of the printed tariffs. What departures from these open rates are made, in the way of special contracts or secret rebates, could only be ascertained by an examination of the companies' books. If Wisconsin's experience may be taken as a criterion, such personal discriminations must be numerous and important.

RATES OF URBAN UTILITIES

So far as appears from the meager data in hand the rates of urban utilities in Iowa are not, upon the whole, excessive. The table below shows the price of gas in certain Iowa, Massachusetts, and Wisconsin cities of similar population. No comparison of electric rates is attempted because of irreconcilable differences in the form of schedules.

TABLE VII

NET PRICE OF GAS PER 1000 CUBIC FEET

IOWA CITIES	RATES	MASSACHUSETTS CITIES	RATES	WISCONSIN CITIES	RATES
Des Moines	$ .90	Lynn	$ .80	Superior	$1.00
Sioux City	1.00	Haverhill	1.00	Racine	1.00
Dubuque	1.00	Malden	1.00	Oshkosh	1.00
Cedar Rapids	.90	Taunton	1.00	Sheyboygan	1.35
Waterloo	1.00	Chicopee	1.26	Green Bay	1.40
Burlington	1.00	Gloucester	1.10	Madison	1.15
Ottumwa	1.20	North Adams	1.05	Appleton	1.35
Muscatine	1.25	Attleboro	1.20	Beloit	1.25
Fort Dodge	1.15	Woburn	1.40	Marinette	1.50
Keokuk	1.50	Marlboro	1.50	Ashland	1.50
Boone	1.25	Greenfield	1.90	Manitowoc	1.00
Iowa City	1.15	Webster	1.35		
Average of twelve cities	1.11	Average of twelve cities	1.21	Average of eleven cities	1.23

LITIGATION OVER RATES

The attempt at city control has led in Iowa, as elsewhere, to much litigation with its attendant expense, delay, and ill-will. No better illustration need be asked than is afforded by the legal battles now waging between Des Moines and four of its public service companies.[301]

The several cases are so instructive that it will be worth while to set them out *seriatim*.

First, a franchise, exclusive for thirty years, was granted in 1866 to a horse car company, was repeatedly assigned, and is now claimed by the Des Moines Street Railway Company to be perpetual on the ground, among others, that it was exercised without objection after the expiration of the original grant. Ouster proceedings were begun some half-dozen years ago, were carried to the United States Supreme Court and there dismissed for want of jurisdiction,[302] and are now pending before the Supreme Court of Iowa. The case has already cost the city of Des Moines $20,000 and the end is not yet. Meanwhile the city is estopped from regulating either fares or service.

Second, agitation against dollar gas was begun some years ago. At length, on February 27, 1910, the city council, when no representative of the gas company was present, passed a ninety cent ordinance.[303] Enforcement of the ordinance was forthwith enjoined by United States District Judge McPherson, and a decision of the lowest Federal court upholding the ninety-cent rate was only obtained on August 21, 1912.[304] The city has already spent $25,000 and the company $150,000 on the case, with a costly appeal to the United States Supreme Court remaining to be prosecuted. The dollar price for gas still remains in force in Des Moines after nearly three years' litigation.

Third, the people of Des Moines have for years paid thirty cents per thousand gallons for water, a very high rate for a city of ninety thousand inhabitants. The city council, in 1908, ordered the price reduced to twenty cents; but the ordinance was held invalid more than three years

later by the United States Circuit Court,[305] and has never been in force. Having sunk some $14,000 in the vain attempt to secure lower rates by ordinance, the city next sought to purchase the water works. The company asked $2,700,000 for a plant which had been valued by a master in chancery, upon the company's evidence, at $1,840,000.[306] No agreement being reached, an appraisal was sought by the cumbersome method of a "condemnation court", herein before described. If no appeal is taken from the decision of the three district judges, this proceeding will cost the city about $15,000. Consumers still pay thirty cents per thousand gallons of water in the city of Des Moines.

Fourth, an ouster proceeding against the Iowa (Bell) Telephone Company was decided adversely to the city in 1903.[307] Another suit has recently been begun to test the company's right to operate without a franchise from the city.

The net results of five years' litigation and the expenditure of $75,000 of taxpayers' money are: (1) that the rates complained of remain in force; (2) that no improvement of service has been effected; (3) that the conflicting claims of the city and its public service corporations are still undecided; and (4) that chronic hostility has been engendered between the companies and the public, each regarding the other as a natural enemy to be oppressed and exploited as much as possible.[308] Well might Judge McPherson, before whom three of these cases have been tried, exclaim: "In the face of these long delays and the tremendous expense attending the hearings, it is apparent that some other method must be devised to determine the matters as to some of these public utilities."[309]

MUNICIPAL ACCOUNTS

The shortcomings of municipal utility accounting have already been adverted to, but the point may be made clearer by contrasting the waterworks reports of a Wisconsin city of 4000 and an Iowa city of 40,000 inhabitants.[310] The former contains the following significant information not to be found in the latter: (1) the amount of water furnished to, and the receipts from, residences, business establishments, city buildings, schools, public parks, fountains, fire hydrants, and street sprinklers; (2) the cost (including interest, maintenance, depreciation, and taxes) of pumpage; (3) the distribution costs; (4) maintenance and depreciation in detail; (5) the cost of reading and testing meters and making collections; (6) the number of each class of employees and their wages; (7) a detailed inventory of property; and (8), most important of all, the net financial results of the year's operations for the plant as a whole and for each class of service. The Iowa report shows such results only for the industry as a whole and with no allowance for interest, depreciation, taxes, or the water supplied to the city or the school district. In a word, the people of the Wisconsin city can, and the inhabitants of the Iowa city can not, discover whether their plant is being operated economically, whether the charges are too low or too high, and whether one class of consumers are paying for service to another.

The present State control of municipal accounts is of little benefit. The character of the supervision by the Auditor of State may be judged from the last annual report of the Department of Finance and Municipal Accounts. Municipal industries are treated under the

heads:[311] (1) "Payments for Municipal Industry Expense", divided into (a) "Salaries and Wages" and (b) "All others"; (2) "Payments for Outlays" (intended to represent equipment and construction); (3) "Receipts from Municipal Industries"; (4) "Value at Close of Year of Municipal Possessions"; (5) "Water Works, General Information and Cost of Service", showing number of miles of mains, number of fire hydrants, maximum and minimum water rate, number of connections, and number of meters; and (6) similar data for electric plants.

Three criticisms of this report may be offered. (1) It is impossible to ascertain therefrom the original cost, depreciation, structural value, outstanding debt, operating expenses, pumpage, commercial sales, or public consumption of any plant; and hence it is, of course, out of the question to compare the efficiency of different plants in any respect whatever. (2) The returns, even under the meager heads noted, are very incomplete. The number of municipal water works is given as 69 in Table III and 75 in Table IV of the last published report, though the former table includes 6 plants omitted in the latter. The item, "cost of fire hydrants", in Table XVI, appears for but 41 cities out of 71 for which other data is given. (3) Even the items set down are not always to be trusted. It is probable that the table of "Payments for Municipal Industry Expense" is intended to indicate operating expenses. If so, $14,395 seems an excessive expenditure for the Hawarden water works as compared with $1,166 for the Charles City plant, and $533 for the Sac City water system. Similarly, the pay roll of $466 at the Mt. Pleasant water plant appears very small by comparison with "wages and salaries" of $4,822 for the Clarinda works. The explanation is, of course, that the several

items in the same column do not represent corresponding facts. Doubtless some municipal accountants place construction and renewals under "Payments for Municipal Industry Expense", while others record even operating expenses as "Payments for Outlays". Whatever the explanation, the numerous and glaring discrepancies vitiate the value of the summaries in Tables III and IV.

The poor results attained by the Auditor of State are due in part to the lack of adequate provisions for securing prompt and full returns from the municipalities. But the difficulty does not end here. The Auditor and his sub-

TABLE VIII

MUNICIPAL UTILITIES IN 101 IOWA CITIES[312]

	CITIES OF MORE THAN 20,000 INHABITANTS	CITIES OF 5,000 TO 20,000 INHABITANTS	CITIES OF 3,000 TO 5,000 INHABITANTS	CITIES OF LESS THAN 3,000 INHABITANTS	ALL CITIES
Number of cities ...	10	19	28	44	101
Number of municipal water plants ...	5	13	25	37	80
Number of municipal electric plants..	0	3	13	9	25
Number of water and light utilities ..	5	16	38	46	105
Value of city water works	$3,041,198	$2,616,200	$1,376,952	$1,069,938	$8,104,288
Value of city light plants		77,000	661,065	186,500	924,565
Value of both utilities	3,041,198	2,693,200	2,038,017	1,256,438	9,028,853
Annual operating expenses of water works	123,412	140,109	121,327	85,193	470,041
Annual operating expenses of light works		30,000	167,571	69,072	266,643
Annual operating expenses of both utilities	123,412	170,109	288,898	154,265	736,684

ordinates are not chosen for their technical knowledge of statistics and accounts. The very committee which drafted the present system of municipal accounts was composed, in the major part, of untrained city officials.[313]

Municipal operation of public service industries has attained a considerable magnitude in Iowa, as is shown by the tables on the opposite page. The number of plants, the sums of money invested therein, the annual expenditures therefor, the importance of economy and efficiency in the management of these industries, the great value of intelligent and correct accounting as a means thereto, and the deplorable deficiencies of existing accounting methods, all call for effective State supervision.

ATTEMPTS TO CREATE A PUBLIC SERVICE COMMISSION

Bills to create a public service commission for Iowa were introduced in both the Thirty-third[314] and the Thirty-fourth[315] General Assemblies, and such a measure was passed by the House in 1911 but failed in the Senate.[316]

Of the several measures proposed, the White-Grier-Larrabee and Sammis bills of 1909 were identical, as were also the Crist and Sammis bills of 1911, the latter differing from their predecessors chiefly in reserving larger powers to municipalities. A sketch of the Sammis bill of 1911 will, therefore, sufficiently indicate the character of the defeated legislation.

The Sammis bill provided for a public service commission of five members, appointed by the Governor and confirmed by a two-thirds vote of the Senate, and removable by the Governor for cause, to hold office for six years at a salary of $5,000 each. The commission was given jurisdiction over all common carriers and over

street railroads, telegraph and telephone companies, and gas, electric, and water plants, whether private or municipal. There were the usual provisions for investigation upon complaint or upon the commission's own motion, for reports from the utilities to the commission for filing schedules, and for fixing rates and ordering improvements. The commission was given power to require uniform accounts and to appoint meter inspectors. The bill included a "stock and bond" clause, forbidding the issue by any utility, private or municipal, of capital stock or of debentures to run more than one year without the commission's approval. There was also a "convenience and necessity" clause, making the commission's assent necessary to the commencement of any utility enterprise in competition with one already in existence and a validating clause [Section 25] which would have permitted existing utilities "to exercise the franchises and privileges which they now have, or which may hereafter be granted to them, so long as they comply with the provisions of this act and the [valid] orders of the commission", subject, however, to the power of municipalities to amend or alter any franchise at its expiration. Municipalities retained the power, subject to review by the commission upon complaint by the utility affected, (1) to determine the quality and kind of service to be rendered and the other terms and conditions upon which any utility should be permitted to occupy the streets, and (2) to require additions to or extensions of the physical plant.

Some of the above provisions, notably the stock and bonds clause, are less explicit than could be wished. The effect of the validating clause is doubtful, since it does not expressly provide for the forfeiture of franchises for any violation of law, or of a lawful order of the commis-

sion. As a whole, however, the bill is more objectionable for what it omits than for what it contains. The most important omissions are: (1) explicit definition of unlawful discrimination, (2) valuation of utility properties by the commission, (3) audit of utility accounts, (4) definition by the commission of standards of product and service, (5) inspection of service and equipment by the commission's staff, (6) control of mergers, (7) approval of franchises by the commission, (8) an indeterminate permit clause, and (9) restrictions upon judicial review of the commission's decisions. Taken together these omissions, but especially the failure to limit court review, would have materially weakened the proposed commission.

The defeat of the public service commission proposals in Iowa is largely attributable to the opposition of city governments. The City Council of Des Moines petitioned, in 1909, "against the enactment of a public utilities measure that will take from the cities and towns and electors thereof the power to grant rights to the use of the streets" or "the control and regulation of public service companies operating within their borders."[317] More than twenty petitions to the same effect, emanating from eighteen cities and towns, were presented to the Thirty-third and Thirty-fourth General Assemblies.[318]

The main ground of this opposition, as gathered from interviews with leading spokesmen of the cities, may be reduced to the following: (1) dissatisfaction with certain features of the particular measures under consideration; (2) suspicion of the sponsorship of the proposed legislation; (3) fear that an unfit commission would be appointed; and (4) preference for "municipal home rule" as against any form of State supervision. It was alleged in

addition that a public service commission, however desirable in more urban States, is a needless luxury in agricultural Iowa, and that the cost of an effective commission would be prohibitive for this poverty-stricken State. A brief examination of these several objections will close the present section of this paper.

The defects of the bills introduced and voted on were mentioned above. Friends of effective State supervision could not have been satisfied with any of the measures presented in their original form. But their specific objections could easily have been overcome by amendment.

Representatives of certain public service corporations were alleged to have been very active in support of the pending bills, leading to the suspicion that the measures were intended not so much to "curb monopoly" as to "bridle the municipalities". Whether such suspicions were well or ill-founded, they seem to have been instrumental in bringing about the defeat of the public utilities bills.[319]

The bills proposed to continue the present Railroad Commissioners, until the expiration of the terms for which they were respectively elected, as members of the proposed public service commission. Two of these Commissioners, it was alleged, were openly supported for election by certain railroad corporations[320] and were unduly favorable to "the interests". It was thought, besides, that the agricultural element of the population might be given undue representation in appointments by the Governor, and that cities might have to submit to regulation by a board "not one of whose members resides in a city or is familiar with city problems".

That city officials should oppose State supervision of urban utilities is easy to understand. The dignity and

power of municipal office would thereby be somewhat diminished. Moreover, an oft-tried and ever reliable campaign issue would lose most of its value: once establish an effective State commission and no Carter Harrison or Tom Johnson or Mayor Pingree is needed to deliver the cities from their bondage to public service corporations. Opportunities for "easy money" would likewise be curtailed — a consideration which would have weight with dishonest officials, if any such there be in Iowa.

It is as unnecessary as it would be utterly unjust to ascribe unworthy motives to all of the opponents of State supervision. Many high-minded men honestly believe that the "cities and electors thereof", if only given sufficient powers, can regulate the public utilities within their borders to better effect than can a distant commission which represents a predominantly rural constituency and which is necessarily unfamiliar with local conditions.[321] This conviction agrees well with the American faith in local self-government, which appears to be especially strong in Iowa. In the words of a former city solicitor of Des Moines, "Home rule in the cities is", with many, "the sheet anchor to which we would cling".[322]

The arguments of the home rulers have already been considered at some length in an earlier section of this paper, where it was pointed out that reason and experience are against unchecked local control of urban utilities. The costly failures, and the no less costly partial victories, of Des Moines, Cedar Rapids, Sioux City, and other Iowa communities in their contests with public service companies sufficiently emphasize the point.

The argument of non-necessity does not convince. It

is, of course, true that Iowa has no metropolis, but there are ten cities of more than twenty thousand, and twenty-six of more than five thousand inhabitants. There are nearly one hundred places served by two or more private companies each, and more than one hundred municipal plants valued at some ten million dollars. It must be remembered that while the aggregate cost of water, light, and local transportation at Cedar Rapids appears small by comparison with Chicago, yet the *per capita* cost may be equally great, and good service at a reasonable price is no less important to the consumers of the one place than of the other. The large city, moreover, is better able than the smaller to cope with its public service corporations. Chicago can maintain a board of supervising engineers for the traction system, employ experts to value the gas properties, and engage eminent counsel to fight the companies in the courts. But Iowa City can do none of these things. The local lighting plant is controlled by an eastern syndicate, the local telephone exchange is a unit of the Bell system, and the municipality is hopelessly outclassed in a contest with either. Only the State can do for the cities what holding companies have done for the utility corporations — pool their resources for effective effort.

Nor should the legislator's vision be limited to immediate necessities. It is peculiarly the province of the State to exercise that larger foresight which is beyond the ken or the interest of the individual citizen. Most of the older and more populous States delayed the regulation of public utilities until the abuses had become acute and the evils were in part beyond repair. The rigorous stock and bond laws of New York, New Jersey, Maryland, and Ohio are in the nature of locking the stable

after the horse is stolen. Iowa may well profit by these examples. Iowa's cities are growing rapidly. The urban population of the State — counting as urban those who live in places of five thousand inhabitants and upwards — rose from sixteen per cent in 1890 to twenty-five per cent in 1910. One-sixth of Iowa's people now live in places of more than twenty thousand inhabitants. Furthermore, the importance of urban utilities increases even faster than urban population. Every year the telephone, the electric light, and the gas range reach poorer families than before. Street railways now pay in cities of a size that twenty years ago could not support a horse car line. Left to themselves, therefore, the evils of the present situation will multiply in geometrical progression.

The argument of excessive cost is likewise not well taken. Indeed, the advantage of economy lies altogether with a State commission as against regulation by the cities separately. Des Moines alone has spent $75,000 within five years in its struggle with three public service corporations. If other cities have spent proportionately less, it is because they have not attempted to exercise effective control over local utilities. Doubtless the large expenditure of Des Moines is a wise investment, as the city administration contends. The point is that the State could accomplish better results for all the cities at a cost relatively much less.

VI

SUGGESTIONS FOR EFFECTIVE UTILITY REGULATION

THE foregoing survey of the regulation of urban utilities suggests certain conclusions as to what should be sought and what avoided in public utility legislation. To a statement and discussion of these conclusions the present chapter will be devoted.

THE PUBLIC SERVICE COMMISSION

The first essential of effective control of public service corporations is an efficient administrative body. Experience indicates that a board or commission best meets the requirements of the problem. The requisite powers are too great to be entrusted to a single person, and a large body is too cumbersome for efficiency. A commission of three members is probably preferable to a larger board, even if of equal individual ability. Moreover, a given sum laid out in salaries is more likely to secure competent men if divided among three than if distributed to five. Inasmuch, however, as it is not desirable to legislate the present Railroad Commissioners out of office it might be well to have the public service commission consist at first of five members, to be reduced to three as the terms of the present Railroad Commissioners expire. As to the method of selection, appointment seems to secure better results than popular election. The provision of the Sammis bill for appointment by the Governor and confirmation by a two-thirds vote of the

Senate is probably as good a method as can be devised. The term of office should not be less than six years, one commissioner being appointed every second year. Commissioners should devote their entire time to the duties of the office and should have no connection, by stock ownership or otherwise, with any public utility.

With respect to personnel, one commissioner should be an attorney skilled in railroad law and should act as the commission's counsel, *ex officio*, thus saving the salary of the present Railroad Counsel. Another commissioner should be a public utility expert, familiar with methods of valuation and accounting. It might be necessary to go outside the State for such an expert, and so appointments ought not to be confined to citizens of Iowa. Finally, one member of the board should be a resident of some Iowa city of not less than twenty thousand inhabitants. All appointments by or under the commission should be by competitive examination.

UTILITIES INCLUDED

The act should embrace the following utilities: (a) railroads, interurban railroads, express companies, sleeping car, dining car, refrigerator car, tank car and other car lines, pipe lines, steamboats, and all other carriers between cities; (b) telegraph, telephone, and other transmission companies, lines or systems; and (c) street railways, telephone exchanges, gas, electric and water works, heating and refrigerating plants, terminals, ferries, toll bridges, warehouses, elevators, cold storage houses, and any creamery, slaughter-house, meat packing establishment, and any milk, coal or ice dealer found upon complaint and investigation to possess substantial monopoly power.

The term "public utility" should be so defined as to embrace municipalities and every individual, partnership, firm, corporation, association, trustee or receiver owning or operating any of the foregoing plants, businesses, or industries, and also any corporation or association formed for the purpose of acquiring, or authorized to acquire, or which has acquired any utility franchise. This last provision, modeled upon the New York law, is intended to reach inchoate or inactive companies which acquire franchises and hold them until such time as they become valuable. Some of the businesses above enumerated are not usually classed as public utilities, but it is well known that in many places they are, and tend more and more to become, virtual monopolies. The law should be broad enough to cover all monopolies and explicit enough to preclude evasion by a mere change of form.

The more certainly to guard against evasion, it ought to be enacted that no public utility as above defined shall hereafter be operated except by a corporation duly incorporated under the laws of Iowa, and that no public utility franchise shall hereafter be granted or transferred except to a corporation so incorporated. These prohibitions would at once preclude the operation of utilities by irresponsible individuals, or associations — devices repeatedly employed in Massachusetts to escape public regulation. At the same time, no existing property rights would be impaired nor would the acquisition of utility properties by holding companies be prevented. The proposed inhibitions would simply compel operating companies to incorporate themselves in Iowa and thus submit fully to the laws of the State. There appears to be little doubt that such a requirement may constitutionally be made. The State may fix the terms and conditions

upon which persons may engage in public callings[323] and therefore may, if it should appear that by such means its police regulations would be made more effective, foreclose all such callings to individuals or foreign corporations.

INQUISITORIAL POWERS

It goes without saying that the commission should have ample inquisitorial powers. Annual reports, in such detail as the commission may think fit, should be required of all utilities and the commission should be empowered to exact reports at more frequent intervals when deemed necessary.

VALUATION OF UTILITY PROPERTIES

The commission should be required to ascertain, as speedily as practicable, the fair value of all utility properties actually devoted to the public service and thereafter to keep itself informed of all new construction and of the value thereof. No particular theory of valuation should be prescribed in the statute, since none now commands universal assent, but no allowance should be permitted, in any valuation for rate-making or for municipal purchase, for any franchise, except the compensation actually paid to the public grantor. The valuations so found should be conclusive, as of the date when made, for the purpose of municipal purchase and also in any subsequent proceeding in any court of the State. This last provision would save the vast expense of taking expert testimony in litigation, and it would also serve the ends of justice much more nearly than does the ordinary court appraisal.

UNIFORM ACCOUNTS

Uniform accounts, to be prescribed by the commission for each class of utilities, should be compulsory. Express provision should be made for depreciation accounts and for the maintenance by each utility of such depreciation fund as the commission shall deem adequate to replace the plant and equipment as the same may wear out or become obsolete. The purpose of the depreciation fund is to prevent impairment of capital, to which, as explained in an earlier section of this paper, there is special temptation in public utility businesses. Not only ordinary repairs, but renewals as well, are properly operating expenses which ought to be met out of earnings before dividends are declared or profits computed. Only thus can investors be protected without saddling the public with interest charges upon vanished capital. Further, by means of the depreciation accounts, together with the construction accounts above spoken of, continuing valuations will be automatically secured and a sound basis established for rate-making.

To make the accounting requirements effective, the commission should be empowered to audit the accounts of any utility and should be required to examine and audit the books of municipal plants. Municipally operated utilities would greatly profit by such supervision as would compel them to keep intelligible records. When electors are provided authentic and comparative information as to the operation of municipal plants effective control will become possible and municipal industries may be expected to succeed in Iowa as they have succeeded in Great Britain.[324] Private investors, also, would be benefited by trustworthy comparative reports of public utilities.

RATES FOR SERVICES

The commission should have full power, after hearing, to fix the exact rates for each class of service. It is not sufficient to prescribe simply maximum rates. In most cases when any change of rates is necessary justice as between consumers requires revision of the entire schedule. To simplify the commission's work and to secure uniformity each utility should be required to publish and file schedules showing all rates in force. No change in the schedule should be permitted without thirty days' notice to the commission, nor any increase over the rates effective at a given date without the commission's assent. Unlawful discrimination should be defined with some particularity, and any departure from the published schedules or any greater, less, or different charge to one person than to another for a like and contemporaneous service should be expressly prohibited. As a further precaution the commission should be authorized to cancel discriminatory contracts, even those which antedate the passage of the act. Such a power may appear anomalous; but there is no good reason for the continuance of an admitted wrong, and what is more, discriminatory agreements are unlawful and hence *ab initio* void at common law.

STANDARDS OF SERVICE

The commission should have power to prescribe standards of products and services, standard units of measurement, standard measuring appliances, standard safety equipment, and rules for the protection of the health and safety of employees and of the public. It should be authorized, after hearing, to require improved service or facilities, additions to plant or equipment, and exten-

sions to new territory when reasonably necessary to the public service. To make these provisions effective, the commission should be required, through competent agents and with reasonable frequency, to inspect railway tracks, bridges, and equipment, and other utility properties, to test the purity, pressure, heat value and illuminating power of gas, the voltage of electric currents, the initial efficiency of electric lamps, the purity of water, the strength of fire streams, and the adequacy of telephone, street railway, and other utility service, and to compel, upon the reports of its inspectors, and without formal hearings, full compliance with standards fixed by law or by the lawful orders of the commission. Utilities should be required to provide standard proving apparatus, to prove meters, test service, and keep station records according to the rules prescribed by the commission. No utility should be allowed to install any gas or water meter until tested, approved, and sealed by an official inspector, nor any electric meter of a type not approved by the commission.

STOCKS AND BONDS

No provisions of a public utilities act are more important or require closer attention than those respecting capitalization. Wording as well as substance needs to be watched with jealous care to guard against evasion. Effective control of capitalization must embrace, at least, the following features:—

First. The issue of stocks, bonds, or any form of note or debenture running more than twelve months, should be permitted only for the acquisition of property, new construction, or other purpose properly chargeable to capital account — and then only with the authorization

of the commission and only to the amount and for the purposes and upon the terms authorized by the commission, which should be further charged with the duty of seeing that such terms and conditions are fulfilled. The commission should be commanded, before granting a certificate of authorization, to ascertain the value of the utility's physical property, the amount of its outstanding securities, and such other facts as it may deem pertinent to the subject; and it should be expressly empowered to withhold its assent to the whole or any part of the issue applied for, and to require, as a condition of its consent, that the petitioning company increase its service, reduce its dividends, or retire part of its outstanding obligations. Securities issued otherwise than in pursuance of the commission's certificate of authorization, duly recorded upon the company's books, should be void.

Second. No utility should be permitted to issue capital stock at less than par, fully paid in cash, or in property at a valuation fixed by the commission. The securities of a new or reorganized company should be limited to an amount not exceeding in the aggregate the structural value of its plant and equipment, the reasonable expenses of organization, and the cash actually in hand — all to be ascertained and certified by the commission.

Third. Payment for labor or services in stock or other securities and the capitalization of any franchise at more than the compensation actually paid to the public grantor thereof, or of "good will" at any amount, should be expressly prohibited. To permit the promoter or underwriter to receive a block of stock is to encourage speculative enterprises and open the door to overcapitalization. Legitimate services of organization should be

compensated in the same way as the work of an engineer or building contractor. "Good will" obviously has no application to a monopoly, and a public grant should not be made the means of extraordinary profits.

Four. Stock or scrip dividends, shareholders' privileged subscriptions to stock or bonds, and every other form of "melon cutting", should be expressly forbidden. As a preventive, all stock and other securities should be offered at public sale. It should, however, be provided that a minimum or refusal price may be fixed by the issuing corporation, and that the securities may be offered in successive blocks or, with the commission's approval, be marketed through underwriters. Without such safeguards public sale might depress the price of securities below their real value.

Promoters, magnates, and security vendors at large may be expected to protest against such rigorous restrictions as are here proposed. But thorough trial in Massachusetts, and a briefer experience in other States, have demonstrated that stock watering is not necessary to the legitimate promotion of public utility enterprises. Reasonable returns with good security suffice to attract all the capital required for the public convenience. Beyond this point the protection of investors is more important than the encouragement of speculation.

MERGERS OF PUBLIC UTILITIES

Mergers, under proper safeguards, ought to be encouraged. The amalgamation of competing utilities avoids much senseless waste. There are marked economies also in the joint operation of a telegraph and a telephone system, of a street railway and a commercial power plant, or of a gas and an electric lighting estab-

lishment. It may even be advantageous to combine all the utilities of the same community. Such a consolidation would effect important savings in superintendence and office expenses, in the cost of reading meters and making collections, in the purchase of fuel and materials, and in the engineering and construction departments. Under such restrictions as will secure to the public a fair share in these economies, the consolidation of utilities in the same territory is an advantage to consumers as well as owners.

Even the acquisition of non-contiguous properties by a holding company may be a public gain. Much, if not most, of the capital invested in Iowa utilities is owned in New England, New York, Pennsylvania, and other eastern States. Such capital can be had on better terms and at lower rates by such well-known corporations as the United Gas Improvement Company, the McKinley Syndicate, or even the newly formed Iowa Railway and Light Company, than by an obscure utility in a country town the very name of which is unfamiliar to eastern capitalists.

But, while freely admitting and seeking to secure the advantages of combination, it is needful to guard against its dangers. Not only is the power of a monopoly over its patrons strengthened by its union with others, but a merger is commonly made an occasion of stock watering. Whatever the capitalization of the companies consolidated, the aggregate of securities is pretty sure to be increased by the amalgamation.

To protect the public, while permitting legitimate consolidations, three restrictions appear to be necessary.

First. No utility shall sell, assign, convey, lease, mortgage, create any lien against, or transfer in any

manner whatsoever, its franchise, works, plant, or property of any description (except materials and supplies disposed of in the ordinary course of business), without first obtaining from the commission a certificate of approval, to be granted or refused within the discretion of the commission; and then only upon terms and conditions approved by the commission.

Second. No corporation, company, partnership, firm or association shall acquire more than ten per cent of the stock, bonds, or other securities of any utility, except with the commission's approval as above set forth.

Third. The securities issued in exchange for any utility plant or property, or for the stock or bonds thereof, shall not exceed the structural value of the property devoted to the public service, the "going value" of the business (in which term shall be included only the reasonable expenses of organization and the reasonable costs of building up the business) and the compensation actually paid to the public grantor for its franchise — all to be ascertained and certified by the commission.

REGULATION OF COMPETITION

"There are few things which the industrial history of advanced nations proves more conclusively than that competition in the field of public utilities has failed to insure reasonably adequate service at reasonable rates".[325] It is not necessary to go far afield in search of illustration. Sioux City, Clinton, Dubuque, Iowa City, Webster City, Centerville, and other places in this State have enjoyed the benefits of competing telephone service. Des Moines and Sioux City have indulged the craving for competition in electric lighting. Burlington boasts of two gas companies. The experience of these Iowa com-

munities has not been more fortunate than that of larger cities in other States. One after another local telephone systems have been absorbed by the Bell interests. Gas and electric companies have consolidated with each other or been acquired by holding corporations. The process of consolidation has already proceeded far: of fifty companies examined by the writer, twelve supply two or more kinds of service. The policy of competition has broken down in Iowa, as indeed it has everywhere else.

In view of the uniform failure of attempts at competition, of the enormous losses which have been incurred in such attempts, and of the increases of capitalization and deterioration of service that usually have followed upon the abandonment of these experiments, it can hardly be doubted that regulated monopoly is the wiser policy. None the less, the power to permit competition may well be retained as a threat or club to hold monopolists to the faithful performance of their public duties. These two objects are probably best secured by prohibiting the establishment of any utility in competition with one already in existence unless the commission, after notice to all parties concerned and a hearing, shall find and certify that public convenience and necessity require such additional utility.

PUBLIC UTILITY FRANCHISES

With respect to the granting of franchises, two restrictions appear necessary for the protection of investors as well as of the public.

First. No franchise granted by any municipality or other political sub-division of the State should be valid or operative until and unless the commission, after hearing, shall find that such franchise is necessary and proper

for the public convenience and properly conserves the public interests; and the commission should be expressly empowered to impose such conditions as to construction, equipment, maintenance, service, or operation as the public interests may require. Such a provision, coupled with the referendum requirement already in force in this State, would go far to do away with corruption in the granting of franchises. What is equally important, "jokers" would have little chance of surviving the triple ordeal of the city council, the electorate, and the commission.

Second. The indeterminate permit law of Wisconsin has given general satisfaction both to the public[326] and to the utilities affected.[327] Under it the companies are assured of their rights in the streets and of protection against competition so long as they render reasonably satisfactory service at reasonable rates. They have no need to dicker with the local authorities for renewals of expiring grants. They are relieved from all fear of being forced to sacrifice their property at the expiration of any franchise and from all necessity of amortizing their investment. The municipalities, for their part, are no longer bound by rigid contracts running for definite terms of years. If any utility fails to furnish adequate service another company may be chartered by the city, with the commission's consent, without regard to existing franchises. If any city wishes to operate its own utilities it need not wait, as now, for the termination of a grant.

There is little doubt that the Wisconsin plan is far superior to the policy of short-term franchises now pursued in Iowa. If an indeterminate permit clause is to be effective, however, it must be amendatory of existing franchises. The Wisconsin act was at first elective; and

under it, within four years' time, but 62 companies out of 445 surrendered their franchises in exchange for indeterminate permits.[328] Fortunately, there is no question that the General Assembly of Iowa may, if it see fit, revoke, amend, or impose conditions upon, existing public utility franchises, the power to do so having been expressly reserved by statute ever since 1873.[329]

It should, therefore, be enacted that every license, permit, or franchise granted to any public utility by the State or any political sub-division thereof, subsequent to September 1, 1873, or which may hereafter be granted, shall have the effect of an indeterminate permit; that nothing contained in any such franchise, permit, or agreement shall prevent the construction or operation of a similar utility in the same municipality whenever the commission, upon petition of the municipality and after hearing, shall determine that such second utility is reasonably necessary for the public convenience; and that, notwithstanding the terms of any such franchise, permit or agreement, any municipality may, at any time, purchase any utility by compulsory process as hereinafter set forth. Any company whose franchise antedates September 1, 1873, should be permitted to surrender whatever rights it may possess under such franchise in exchange for an indeterminate permit as hereinbefore described.

MUNICIPAL PLANTS

Municipalities should have power to construct, acquire and operate street railways, gas, electric, and water works, ferries, bridges, markets, elevators, warehouses, cold storage houses, commercial heating and refrigerating plants, and possibly other urban utilities. This

list is much longer than the present laws of this State allow; but all the enterprises mentioned have been successfully managed by European cities, and experiments in municipal operation, under proper safeguards, ought to be encouraged.[330] To this end the constitutional debt limit should be so amended as not to apply to any obligation secured only by lien against revenue-producing municipal property. Debts of this character impose no additional burden upon taxpayers and create no charge upon the ordinary revenues of the city, so that the reasons which support a statutory debt limit are inapplicable thereto. The present sinking fund requirements, also, appear to be unwise. If upkeep and depreciation are properly provided for a public utility is a permanent investment. To require that the capital so invested shall be amortized within twenty or twenty-five years is to burden one generation of consumers for the benefit of the next. It seems more just to fix rates at a point no higher than will suffice, after paying operating expenses, interest upon the investment, and taxes foregone because of public ownership, to keep the original capital unimpaired.

The present provisions for the condemnation, by a municipality, of a privately owned utility are defective in two respects. First, the right of condemnation can be exercised only when a franchise has expired or been surrendered. Secondly, the court of condemnation possesses no special fitness for the making of appraisals and is hampered by the technical procedure of an ordinary court of law. Condemnation proceedings are, in fact, of the nature of litigation and subject to the same delay, expense, and uncertainty. It will cost Des Moines not less than $15,000 to present its case for the acquisition of the local water works — and this, too, after the value of the

plant had already been ascertained by a master in chancery at a cost to the city of $14,000. This instance is an excellent argument for making the commission's valuation's conclusive, as hereinbefore proposed.

Instead of this clumsy and inadequate method, the "indeterminate permit" clause, above set forth, requires a utility to sell, whenever the municipality wishes to buy, its property used and useful for the public service, the price being determined in the event of disagreement by the commission's appraisal. No municipality may enter into competition with an existing utility unless the commission shall find that such competition is reasonably necessary to the public convenience; but no city is required to purchase any property not actually useful for the public service. The principles of valuation for municipal purchase are, of course, the same as for rate-making; no allowance should be permitted for "good will", for capitalized monopoly earnings, or for any franchise, except the compensation actually paid therefor to the municipality.

Bonds issued for the acquisition, construction, or equipment of municipal utilities should require the commission's approval, and the commission should have power to disallow, or to reduce the amount, or modify the terms of such bonds; but the present rigid limits upon interest rate and period to run should be repealed. Interest rates vary from time to time as well as from place to place, and it usually is cheaper to pay a somewhat higher rate than to sell bonds at a heavy discount. The restriction of bonds to a twenty-year period[331] is of a piece with the sinking fund policy. Long-term bonds invariably command a higher price, or, what comes to the same thing, a lower interest rate in the market. Short-

term debentures should be resorted to, by a public body, only in periods of abnormally high interest.

Municipal plants should be subject to the commission's jurisdiction with respect to accounts, rates, and service to the same extent as privately owned utilities. A public undertaking, to be sure, has not the same motive as a private monopoly to exploit its patrons. But there is considerable danger that private consumers may be compelled to pay for service furnished gratis to the city or, on the contrary, that rates may be made so low as to not provide for interest, upkeep, and depreciation. Wisconsin's experience shows that municipal utilities are likely to discriminate as between different classes of private consumers; and even personal discrimination may be brought about by political influence or otherwise. Service, also, is sure to be improved by State inspection and the requirement of station records. The need of State supervision over municipal accounts has been sufficiently emphasized in another connection.

POWERS OF MUNICIPALITIES

Every municipality should have power (1) to determine by franchise, contract, ordinance, or otherwise the terms and conditions upon which any utility may occupy its streets, alleys, and other public places; (2) to exercise continuing police control over poles, wires, conduits, tracks, and other structures in, under, over, or along such highways or public places, and over all cars or other vehicles operated thereon; and (3) to require additions to plant or equipment or extensions into new territory. To prevent injustice an appeal should lie to the commission which should be empowered to set aside any ordinance, contract, or franchise which it might find to be

unreasonable, unlawful, or prejudicial to the public interest; but no utility should be permitted to occupy the highways of, or operate within, any municipality without first obtaining the consent of the city council and of a majority of the qualified electors voting thereon.

COURT REVIEW

It is desirable to confine appeals from the commission to the courts within somewhat narrow limits, not alone to save litigation but to make the intended regulation effective. As was pointed out in the third section of this paper, an administrative board constituted like the Railroad Commission of Wisconsin is far better fitted than any court in the land to pass upon the reasonableness of rates, the adequacy of service, or the necessity of additional stocks or bonds. The commission is more expert in such matters than any court can ever become; it has much ampler and more trustworthy sources of information; it is equally judicious; and it is unhampered by that technicality which has ever been the mother of the law's delays.[332] There is no merit in the suggestion that the final determination of such questions by an administrative board would be an arbitrary exercise of power. Final decision must be vested somewhere, and may very properly be entrusted to the tribunal which is best fitted to exercise it.

Ideally, then, the commission's findings should be final as to facts, including even ultimate conclusions of fact, and should be reviewable only on the grounds that the commission has exceeded its authority, or that it has not proceeded in accordance with law. Reason and analogy support such a limitation of judicial review. The findings of State civil service commissions[333] and of the

Federal Land Office[334] have been given all the finality that is here suggested. The Immigration Commissioner, under the alien exclusion acts, is authorized to determine claims of citizenship, and his determination is not subject to court review.[335] The finding of a medical inspector that an alien immigrant is afflicted with a loathsome or contagious disease is conclusive of the fact, and administrative officers may thereupon proceed to deport such alien and to collect a money penalty from the ship which brought him, without invoking judicial process.[336] The decision of the Superintendent of Public Instruction is, in Iowa, final as to questions of fact properly before him.[337]

There is nothing in principle to distinguish the quasi-judicial functions exercised by administrative officers in these cases from the function of rate-making. The questions to be passed upon are substantially similar. The reasonableness of a given rate, or schedule of rates, is necessarily a conclusion of fact drawn from a mass of inter-related facts. Whether a certain individual was entitled to a given mark in an examination, whether a certain immigrant was at a given date suffering from a particular disease, whether public convenience requires a school house to be re-located are likewise conclusions drawn from more or less intricate facts. If some of these questions are administrative in character, so are the others.[338] If rights of travel and residence may safely be determined by administrative tribunals, so may the rates and service of public utilities.

The courts in the United States are committed, however, to the doctrine of judicial control over rate-making. It is not possible, therefore, to make the decisions of an administrative body conclusive as to the reasonableness

of rates or of orders affecting property rights.[339] The utmost that can be done is to hedge about judicial review upon these matters with such safeguards as will serve to make the public service commission something more than an advisory body. There is no doubt that a State may to the extent permitted by its Constitution limit the jurisdiction of its own courts; and it appears to be settled that when a limited judicial review is permitted by the laws of the State parties will be required to exhaust their remedies there before applying to the Federal courts.[340]

Some of the most effective restraints imposed upon judicial review in other States are impracticable in Iowa. Judicial functions can not here be vested in an administrative body, as has been done in Oklahoma and California, since rigid separation of powers is enforced by the State Constitution.[341] Hence review can not be had by appeal, certiorari, or writ of error. Nor can cases be carried directly from the commission to the Supreme Court, though that would be a great gain in time and expense, since that court has appellate jurisdiction only.[342]

Perhaps it would be most expedient to enact that any party aggrieved by an order of the commission may, within thirty days after the rendition thereof, commence a suit in equity, in the District Court of Polk County, against the commission as defendant, to set aside such order on the ground that the same is unlawful, or unreasonable, or was obtained by fraud, or was without the jurisdiction of the commission; and that, except as above provided, no order or decision of the commission shall be questioned in any court of this State. The record certified by the commission should be the sole evidence admissible (except as to the allegation of fraud) in any such action to vacate an order of the commission, but any

party having new evidence to present should be granted a rehearing as of right by the commission.

The commission's findings as to the value of property devoted to the public service should be final; and no court of the State should have jurisdiction, by mandamus or otherwise, to compel the commission to grant any certificate that public convenience and necessity require a second utility in competition with one already in existence, or to approve any proposed issue of stocks or bonds by a public service company, or any transference of the franchise or other property of any utility, or to consent to the terms of any franchise granted by any municipality.

Appeal would, of course, lie from the District to the Supreme Court as in other civil cases. To avoid delay, actions brought against the commission should be given precedence over all other civil cases without regard to position on the calendar.

To prevent dilatory appeals it should be provided that no order of the commission shall be suspended, by injunction or otherwise, except after notice to the commission, hearing, and a specific finding by the court that great and irreparable damage would ensue from the enforcement of the order. No order continuing rates already in force should be suspended at all nor any order reducing rates without a supersedeas bond to refund the difference between the charges collected pending final determination and the rates ordered by the commission, if the same shall be finally sustained; and the appellant company should be required to keep accounts showing the amount of such excess charges and the names and addresses of the persons to whom the same may become refundable.

SUPPORT OF THE COMMISSION

The enactment of rigorous restrictions upon public service companies and the vesting of broad powers in a public service commission will avail little unless ample provision is made for carrying this legislation into effect. Penny-wise economy has been the bane of governmental regulation in this country — and particularly in this State. The factory laws of Iowa never have been properly enforced for want of an adequate inspectional staff. The stock and bond act of 1907 has remained nugatory for lack of administrative machinery. The State supervision of municipal accounts is farcical for the same reason. The Board of Railroad Commissioners has been less effective than could be wished because it has been accorded only a beggarly $25,000 a year. There is grave danger that the same mistake will be made, as it has been made by a number of States, in setting up a public service commission.

Public utility regulation is a scientific matter, calling for a higher degree and a greater mass of expert knowledge than the people of Iowa hitherto have recognized.[343] Three commissioners without special training and with the assistance only of a few ordinary clerks and stenographers can not cope intelligently with the complex problems of valuation, accounting, rate-making, and service standards. If the regulation is to be effective, the commission must be composed of high grade men, able to command $5,000 a year in private callings; and it must be provided with a staff of rate experts, accountants, statisticians, and engineers at least equal to the staff of any public service company in the State. An annual appropriation of $100,000 is the minimum that should be made for its support.

To some this may seem a large amount of money to place in the hands of an administrative body. Yet it is a less amount than the Des Moines Gas Company spent on a single lawsuit, and it is small in comparison with the yearly sums devoted by the public service companies of Iowa to their governmental relationships. It must be remembered that the State has a larger stake in public utilities than has any private corporation. The cost of effective supervision will be at most but a very small percentage of what the people pay for utility services. Even the very expensive Public Service Commission for the First District of New York could be supported by a tax of twenty-eight cents on the hundred dollars of lighting and local transportation receipts.[344] Such an expenditure should be saved many times over by the regulation of public utilities in the interest of the whole people. A reduction of ten per cent in the price of gas would save $50,000 annually to the residents of Des Moines alone. Standardization of artificial gas throughout the State would probably result in a saving to the consumers of gas throughout Iowa that would more than offset the entire cost of the commission.

Funds for the commission's maintenance can readily be secured, and that without burdening any existing source of revenue. It is only necessary to impose a fee, as in Wisconsin,[345] of one dollar for each thousand dollars, par value, of stocks and bonds approved by the commission. Such a tax would work no hardship, since the commission's approval would add more than the amount of the fee to the market value of the securities so approved. Of course, all fees should be paid directly into the State treasury and the commission's support be made wholly independent of the amount of fees collected.

The bogey of paternalism has often sufficed to frighten legislatures from measures that were socially wise and necessary. This ancient scarecrow, on more than one occasion, has done yeoman service in Iowa. But, happily, its usefulness is well-nigh at an end. Thoughtful men nowadays concern themselves but little with abstract doctrines of government. Their queries are what is the work to be done, and what instrument is best fitted to do it? Whether that instrument be private enterprise or public authority, the local, State, or Federal government, matters not at all provided the end in view is attained. It so happens that circumstances just now call for an increase of governmental activity, and this line of growth promises to continue for a generation to come. The great era of competition is past. More and more monopoly dominates the field of capitalistic industry. Unless the economies of monopoly are to be foregone or its advantages are to inure solely to the monopolists, public supervision must be extended to many businesses hitherto deemed private. Those States which lead the way in regulating industries already recognized as quasi-public in character are creating the machinery and accumulating the knowledge that will be required to cope effectually with the larger problems of tomorrow. Contrarywise, those Commonwealths which cling to the out-worn policy of *laissez faire* will presently find themselves at grave disadvantage when called upon to control monopoly in an aggravated form.

Iowa's legislators should be able to pass a better public utilities law than any hitherto enacted. They have before them the experience and experimentation of nearly a score of States. They are less hampered by vested abuses and less beset by corporate influence than were the

legislatures of the older and richer Commonwealths. It is especially to be hoped, therefore, that they will avoid the mistakes and weaknesses of existing statutes and will lay broad and deep the foundations of public utility regulation.

NOTES AND REFERENCES

NOTES AND REFERENCES

1 On the subject matter of this paragraph, see Adams's *Science of Finance*, Ch. III.

2 Compare *Report of the National Civic Federation on Municipal and Private Operation of Public Utilities*, 1907, Part I, Vol. I, pp. 23–25.

3 Compare Cleveland's *Municipal Ownership as a Form of Governmental Control* in *The Annals of the American Academy of Political and Social Science*, Vol. XXVIII, pp. 359–370.

4 See, for example, Lewis's *The Lease of the Philadelphia Gas Works* in *The Quarterly Journal of Economics*, Vol. XII, pp. 209–224.

5 See Robbins's *Public Ownership Versus Public Control* in *The American Journal of Sociology*, Vol. X, pp. 787–813.

6 *Fourteenth Annual Report of the United States Commissioner of Labor*, 1899.

7 *Fourteenth Annual Report of the United States Commissioner of Labor*, 1899.

8 Compare Ely's *Trusts and Monopolies*, Ch. IV; Bemis's *Municipal Monopolies*, Preface; Bullock's *Trust Literature* in *The Quarterly Journal of Economics*, Vol. XV, pp. 167–217.

9 Professor John H. Gray, summarizing the experience of Boston, says: "The direct fruit [of competition] was always the same,— over-investment and a rate war, followed by consolidation and unregulated monopoly, with rates usually sufficient to pay a dividend not only on the unnecessarily large investment, but also on the watered stock occasioned by the consolidation. The indirect outcome of such contests was generally a bitter hostility between the corporations and those whom they served."— *The Gas Commission of Massachusetts* in *The Quarterly Journal of Economics*, Vol. XIV, pp. 509, 510.

10 See, for example, the history of "Gas" Addicks's invasion of Boston in *The Quarterly Journal of Economics*, Vol. XII, pp. 419–446; Vol. XIII, pp. 15–44, 292–313; and the romantic story of the New England Gas and Coke Company in *The Quarterly Journal of Economics*, Vol. XIV, pp. 87–120.

[11] For illustrations see Gray's *The Gas Supply of Boston* in *The Quarterly Journal of Economics*, Vol. XII, pp. 419–446; Vol. XIII, pp. 15–44, 292–313; Vol. XIV, pp. 87–120; Wright's *Development of Transit Control in New York City* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 552–575; Myers's *History of Public Franchises in New York City* in *Municipal Affairs*, Vol. IV, pp. 71–206; Wilcox's *Municipal Franchises*.

[12] *In re* La Crosse Gas and Electric Company, 8 Wisconsin Railroad Commission Reports 138–241; compare City of Beloit *vs.* Beloit Water, Gas, and Electric Company, 7 Wisconsin Railroad Commission Reports 187, 300.

[13] For details see Gray's *The Gas Supply of Boston* in *The Quarterly Journal of Economics*, Vol. XII, pp. 419–446.

[14] See Gray's *The Gas Supply of Boston* in *The Quarterly Journal of Economics*, Vol. XIV, pp. 87–120.

[15] See, for example, Bemis's *Municipal Monopolies, passim*, especially Ch. VII; Wilcox's *The Control of Public Service Corporations in Detroit* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 576–592; Wolff's *Public Service Corporations in New Orleans* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 630–638; Hotchkiss's *Some Phases of Chicago's Transportation Problem* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 619–629; Lewis's *Philadelphia's Relation to Rapid Transit Company* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 600–611; Neenah *vs.* Wisconsin Traction, Light, Heat and Power Company, 6 Wisconsin Railroad Commission Reports 398–402; and 7 Wisconsin Railroad Commission Reports 251–421; Windsor *vs.* City of Des Moines, 110 Iowa 175, 177, (1900); Butler's *Street Railway Problem in Milwaukee* in *Municipal Affairs*, Vol. IV, pp. 212–218.

[16] On the principles of monopoly price, see Ely's *Monopolies and Trusts*, pp. 96–140; Marshall's *Principles of Economics* (Fifth Edition), Book V, Chapter XIV; Cournot's *Recherches sur les Principes Mathematiques de la Theorie des Richesses*, Chapter V; Brown's *Competitive and Monopolistic Price Making* in *The Quarterly Journal of Economics*, Vol. XXII, pp. 626–639.

[17] See Bemis's *Municipal Monopolies*, pp. 512–516.

[18] Howe's *The City: The Hope of Democracy*, p. 65.

[19] Walker's *State Regulation of Public Service Corporations in the City of New York*, a pamphlet issued by the Public Service Commission for the First District of New York State, p. 13.

20 Bemis's *Municipal Monopolies*, Ch. VII; Rowe's *The Possibilities and Limitations of Municipal Control* in *Corporations and Public Welfare*, May, 1900.

21 For example see Jackson's *Report to the Massachusetts Highway Commission on Telephone Rates for the Boston and Suburban District*, a pamphlet issued by the Massachusetts Highway Commission, 1910; City of Beloit *vs.* Beloit Water, Gas and Electric Company, 7 Wisconsin Railroad Commission Reports 187–387, at 347, 379, (1911).

22 See Erickson's *Regulation of Public Utilities*, Part III — *Government Regulation of Security Issues of Public Utility Corporations*, a pamphlet issued by the Railroad Commission of Wisconsin, 1911.

23 Meade's *Trust Finance*, pp. 295, ff.

24 Wilcox *vs.* Consolidated Gas Company, 212 United States 19, 44, (1909); Monongahela Navigation Company *vs.* United States, 148 United States 312, (1893); Montgomery County *vs.* Schuylkill Bridge Company, 110 Pennsylvania State 54, (1885); Town of Bristol *vs.* Bristol and Warren Waterworks, 23 Rhode Island 274, (1901); *In re* Monongahela Water Company, 223 Pennsylvania State 323, (1909).

25 Wilcox *vs.* Consolidated Gas Company, 212 United States 19, (1909); Reagan *vs.* Farmers' Loan and Trust Company, 154 United States 362, 410, (1894); Des Moines Water Company *vs.* City of Des Moines, 192 Federal Reporter 193, 197, (1911).

26 Ford's *Valuation of Intangible Street Railway Property* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXVII, pp. 119, 127.

27 Wright's *Development of Traction Control in New York City* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 552, 565.

28 Wilcox *vs.* Consolidated Gas Company, 212 United States 19, 44, 47, (1909).

29 See *Investors' Manual of The Chicago Economist*, July 15, 1912.

30 For a somewhat different view of the promoter's work see Meade's *Corporation Finance*, Ch. I. The statement in the text is not intended to belittle the business, as distinguished from the industrial, functions of the promoter. No doubt there are legitimate, in the sense of socially necessary, costs of promotion, which ought to be allowed for as "going value". But it is easy to exaggerate the (social) value of the promoter's services in the public utility field.

[31] Compare Veblen's *The Theory of Business Enterprise,* Ch. VI.

[32] Ripley's *The Capitalization of Public Service Corporations* in *The Quarterly Journal of Economics,* Vol. XV, pp. 106, 113.

[33] Robbins's *Public Ownership Versus Public Control* in *The American Journal of Sociology,* Vol. X, pp. 787, 794.

[34] Lewis's *Philadelphia's Relation to Rapid Transit Company* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 600–611.

[35] Wright's *Development of Transit Control in New York City* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 552, 566, 567; Hotchkiss's *Recent Phases of Chicago's Transportation Problem* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 619, 620.

[36] See Wright's *Development of Transit Control in New York City* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 552, 563–565. The New York Reform Club Committee estimated the "water" in the Metropolitan Third Avenue System alone at $160,000,000.— See *Municipal Affairs,* Vol. VI, pp. 68–86.

[37] Hotchkiss's *Chicago Traction: A Study in Political Evolution* in *The Annals of the American Academy of Political and Social Science,* Vol. XXVIII, pp. 385–404, at 391.

[38] Gray's *The Gas Supply of Boston* in *The Quarterly Journal of Economics,* Vol. XIV, pp. 87–120, at 115–117.

[39] Cedar Rapids Gas Light Company *vs.* City of Cedar Rapids, 144 Iowa 426, 429, (1909).

[40] *The Iowa City Republican,* Vol. 72, No. 267, August 30, 1912.

[41] Compare Veblen's *The Theory of Business Enterprise,* pp. 143–145.

[42] Veblen's *The Theory of Business Enterprise,* Ch. VI, especially, p. 146. For a concrete case see Gray's *The Gas Supply of Boston* in *The Quarterly Journal of Economics,* Vol. XIV, pp. 87, 116.

[43] Lewis's *Philadelphia's Relation to Rapid Transit Company* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 600, 601, 602.

[44] Wright's *Development of Transit Control in New York City* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 552, 565.

[45] Hotchkiss's *Recent Phases of Chicago's Transportation Problem* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 619–629.

[46] For a very clear analysis, see Erickson's *Regulation of Public Utilities*, Part I — *Rates for Electric Current*, a pamphlet issued by the Railroad Commission of Wisconsin in 1911. Compare *In re* Menominee and Marinette Light and Traction Company, 3 Wisconsin Railroad Commission Reports 778–905, at 826–830, (1909).

[47] For discussion of "off the peak" rates, see Gardiner's *Making of Rates and the Additional Business System of Costs;* Oxtoby's *Legal Phases of Central Station Rate Making.*

[48] See Gardiner's *Making of Rates and the Additional Business System of Costs;* also the very able discussion in *In re* Manitowoc Gas Company, 3 Wisconsin Railroad Commission Reports 163–181, at 174–176, (1908).

[49] "The same rate for all is a term that is often much more beautiful in the abstract than when concretely applied. When it stands for the same rate for all, regardless of both the cost and its effect upon the growth of the business, it may be in violation of sound economic and business theories as well as of public policy. While there may be places where the conditions are such that uniform rates will fairly meet the situations, such places are not frequently met with."— *In re* Manitowoc Gas Company, 3 Wisconsin Railroad Commission Reports 163–181, at 175, 176, (1908).

[50] Compare Erickson's *Regulation of Public Utilities*, Part I — *Rates for Electric Current;* City of Ripon *vs.* Ripon Light and Water Company, 5 Wisconsin Railroad Commission Reports 1–94, at 30–34, (1910).

[51] Compare *In re* Menominee and Marinette Light and Traction Company, 3 Wisconsin Railroad Commission Reports 778–905, at 826–830, (1909).

[52] "A schedule of electric power rates which allows reduced rates for quantities consumed, without reference to the size of installation, the demand, or to the hours of use, is not likely to be in keeping with the costs of service or conducive to the successful extension of business".— *In re* Menominee and Marinette Light and Traction Company, 3 Wisconsin Railroad Commission Reports 778–905, at 877; and Digest, p. 976, (1909). Quoted from Digest.

[53] City of Beloit *vs.* Beloit Water, Gas and Electric Company, 7 Wisconsin Railroad Commission Reports 187–387, at 379, (1911); *In re* La Crosse Gas and Electric Company, 8 Wisconsin Railroad Commission Reports 138–241, at 238–240, (1911); State Journal Printing Company *vs.* Madison Gas and Electric Company, 4 Wisconsin Railroad Commission Reports 501–

750, at 705–709, 738, 739, 745–750, (1910); *In re* Menominee and Marinette Light and Traction Company, 3 Wisconsin Railroad Commission Reports 778–905, at 826–830, 877, 898, 904, 905, (1909); Manitowoc *vs.* Manitowoc Electric Light Company, 5 Wisconsin Railroad Commission Reports 360–396, at 390, 392, 395–396, (1910); Cunningham *vs.* Chippewa Falls Water Works and Lighting Company, 5 Wisconsin Railroad Commission Reports 302–359, at 330, 336–338, (1910); *In re* Jefferson Municipal Electric Light and Water Plant, 5 Wisconsin Railroad Commission Reports 555–591, at 585–587, (1910); City of Ripon *vs.* Ripon Light and Water Company, 5 Wisconsin Railroad Commission Reports 1–94, at 28, 45, 47, 90, 91, (1910).

See also *Fourth Annual Report of the New York Public Service Commission, Second District* (1910), Vol. I, pp. 108–114, for discussion of discriminations by gas and electric companies.

[54] Jackson's *Report to the Massachusetts Highway Commission on Telephone Rates for the Boston and Suburban District*, pp. 11–17 and Chart 9.

[55] City of Beloit *vs.* Beloit Water, Gas, and Electric Company, 7 Wisconsin Railroad Commission Reports 187–387, at 337–341, (1911).

[56] *In re* Menominee and Marinette Light and Traction Company, 3 Wisconsin Railroad Commission Reports 778–905, at 896, (1909).

Compare *In re* Jefferson Electric Light and Water Plant, 5 Wisconsin Railroad Commission Reports 555, 581, 582, 585, (1910).

[57] From unpublished records kindly furnished to the writer by Mr. Halford Erickson of the Railroad Commission of Wisconsin. Names are suppressed for obvious reasons.

[58] *Fourth Annual Report of the New York Public Service Commission, Second District*, Vol. I, p. 94.

[59] For examples see *Annual Reports of the Massachusetts Board of Gas and Electric Light Commissioners*, 1910, Newburyport Petition, pp. 27, 29–31; 1890, p. 32; 1897, Milbury Petition, pp. 13, 15; 1909, Leominster Petition, pp. 13, 17, 18, 20; 1908, Chicopee Petition, pp. 60, 61, 62.

[60] Statement made to writer by Commissioner O. H. Hughes, June, 1912.

[61] City of Ripon *vs.* Ripon Light and Water Company, 5 Wisconsin Railroad Commission Reports 1–94, at 28, 56, 84, (1910); Ross *vs.* Burkhardt Milling and Electric Power Company, 5 Wisconsin Railroad Commission Reports 138–170, at 162, 163, (1910); *Annual Reports of the Massachusetts Board of Gas and Electric Light Commissioners*, 1910, Leominster Petition, pp. 13, 17, 18, 20.

[62] *In re* Badger Telephone Company, 3 Wisconsin Railroad Commission Reports 98–113, at 112, (1908).

63 *In re* Investigation of the Hudson Water Works, 3 Wisconsin Railroad Commission Reports 138–147, at 141, (1908).

64 Columbus Advancement Association *vs.* Wisconsin Telephone Company, 4 Wisconsin Railroad Commission Reports 414–425, at 415, 425, (1910).

65 Statement to the writer by Mr. Halford Erickson of the Railroad Commission of Wisconsin.

66 See Wyman's *Public Service Corporations*, Ch. I, and the brief but luminous discussion by Mr. A. S. Hills, on *The Origin, Growth and Work of Public Utilities Commissions*, a pamphlet issued by the American Telegraph and Telephone Company in 1911.

67 Year Book, 39 Henry VI, 18, placita 24, (1460); Year Book, 14 Henry VII, 22, placita 4, (1489); Year Book, 22 Edward IV, 49, placita 15.

68 Keilway, 50, placita 4, (1503).—"It was agreed by all the court that where a smith declines to shoe my horse, or an innkeeper refuses to give me entertainment at his inn, I shall have an action on the case, notwithstanding no act is done; for it does not depend upon agreement." [Translated from Norman French.] See also Year Book, 46 Edward III, 19, placita 19, (1373).

69 Year Book, 22 Liber Assisarum 94, placita 41, (1348).

"Every [common] ferry ought to be under a public regulation; viz. that it give attendance at due times, keep a boat in due order, and take but reasonable toll; for if he fail in these, he is fineable."—Hale's *De Jure Maris*, 1 Hargrave, *Law Tracts*, 6.

70 Year Book, 19 Henry VI, 49, placita 5, (1441).

71 Year Book, 39 Henry VI, 18, placita 24, (1460).

72 Jackson *vs.* Rogers, 2 Shower's Reports 327, (1683).

73 Hale's *De Portibus Maris*, 1 Hargrave, *Law Tracts*, 77, 78. "If the king or subject have a publick wharf, unto which all persons that come to that port must come and unlade or lade their goods as for the purpose, because they are the wharfs only licensed by the queen, according to the statute of I. El. cap. II. or because there is no other wharf in that port, as it may fall out where a port is newly erected; in that case there cannot be taken arbitrary and excessive duties for cranage, wharfage, pesage, etc. neither can they be inhanced to an immoderate rate, but the duties must be reasonable and moderate, though settled by the king's license or charter. For now the wharf and crane and other conveniences are affected with a publick interest, and they cease to be *juris privati* only."

74 Bolt *vs.* Stennett, 8 Term Reports 606 (England, 1800), opinion by

Lord Kenyon; Aldnutt *vs.* Inglis, 12 East 527, 537–542 (England, 1810), opinion by Lord Ellenborough; Olcott *vs.* Supervisors, 16 Wallace 678, 695 (United States, 1872).

[75] Munn *vs.* Illinois, 94 United States 113, 126, (1876).

[76] Wyman's *Public Service Corporations*, Preface and Ch. I, Topic D; Ivins and Mason's *The Control of Public Utilities*, Preface.

[77] *Annual Report of the President to the Stockholders of the American Telephone and Telegraph Company*, 1910; Burdett's *Public Control from the Corporate Standpoint*, published by the Empire State Gas Association, 1907.

[78] Goodnow's *Municipal Home Rule;* Deming's *Government of American Cities*, Ch. IX and pp. 219–222, 234–237; Brennan's *Regulation and Control of Local Public Service Corporations by State Boards* in *The City Hall*, September, 1909; Bemis's *Municipal Monopolies*, Ch. IX; *Municipal Program of the National Municipal League.*

[79] Shambaugh's *Commission Government in Iowa: The Des Moines Plan.*

[80] Goodnow's *City Government in the United States*, Chs. IV and V; Deming's *Government of American Cities*, Chs. IX and X; Howe's *The City: The Hope of Democracy*, Chs. X and XI.

[81] Public utility commissions have been established in the following cities: Chillicothe, Joplin, Kansas City, St. Joseph, and St. Louis, Missouri; Houston, Texas; Los Angeles, California; Seattle, Washington; and Wilmington, Delaware.

[82] Des Moines Street Railroad Company *vs.* Des Moines Broad-Gauge Street Railway Company, 73 Iowa 513, (1888); also pending case.

[83] City of Des Moines *vs.* Des Moines Street Railway Company, 214 United States 179, (1909).

[84] Howe's *The City: The Hope of Democracy*, Ch. VI; Lapp's *Public Utilities Control* in *The American Political Science Review*, Vol. I, pp. 626, 627. "The regulation of the more strictly municipal utilities has been left to the local units. This has resulted in a chaos of regulation and in conditions which have made the municipality a by-word for corruption, both at home and abroad."

[85] Compare City of Ripon *vs.* Ripon Light and Water Company, 5 Wisconsin Railroad Commission Reports 1–94, at 68, 77, (1910); City of Ashland *vs.* Ashland Water Company, 4 Wisconsin Railroad Commission Reports 273–310, at 295, 309, 310, (1909).

[86] Hall *vs.* City of Cedar Rapids, 115 Iowa 199, (1901).

87 Ostrogorsky's *Democracy and the Party System in the United States*, Ch. XII; Howe's *The City: The Hope of Democracy*, Chs. VI, VII; Bryce's *The American Commonwealth* (Edition of 1910), Vol. II, pp. 406–426, "The Philadelphia Gas Ring"; Steffens's *The Shame of the Cities*.

88 Gray's *The Gas Supply of Boston* in *The Quarterly Journal of Economics*, Vol. XII, pp. 419–446; Vol. XIII, pp. 292–313; Vol. XIV, pp. 87–120.

89 Wilcox's *The Control of Public Service Corporations in Detroit* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 576–592.

90 Hotchkiss's *Chicago Traction: A Study in Political Evolution* in *The Annals of the American Academy of Political and Social Science*, Vol. XXVIII, pp. 385–404; Vol. XXXI, pp. 619–629.

91 Bemis's *The Street Railway Settlement in Cleveland* in *The Quarterly Journal of Economics*, Vol. XXII, pp. 543–575.

92 *The Register and Leader* (Des Moines), February 28, 1910; August 22, 1912.

93 Statement by Alderman William J. Pringle, Chairman of the Council Sub-committee on Gas, Oil, and Electric Light.

94 See Chicago papers, April to August, 1911.

95 Bemis's *Report on the Price of Gas in Chicago*, p. 5.

96 Dick *vs.* Madison Water Commissioners, 5 Wisconsin Railroad Commission Reports 731–791, at 743, 789, 791, (1910).

97 *In re* Jefferson Municipal Electric Light and Water Plant, 5 Wisconsin Railroad Commission Reports 555–591, at 557, 585, (1910).

98 *In re* Cumberland Municipal Electric Light Plant, 4 Wisconsin Railroad Commission Reports 214–232, at 215, (1909).

99 *Report of Dubuque City Water Works for the Year ending May 31, 1911*.

100 See, for example, *In re* Jefferson Municipal Electric Light and Water Plant, 5 Wisconsin Railroad Commission Reports 555–591, at 585, (1910) — secret below-cost rates to certain large consumers.

101 Dick *vs.* Madison Water Commissioners, 5 Wisconsin Railroad Commission Reports 731–791, at 790, 791, (1910) — free water to city, schools, and churches.

102 *In re* Cumberland Municipal Electric Light Plant, 4 Wisconsin Railroad Commission Reports 214–232, at 217, 218, (1909).

[103] Minneapolis, St. Paul and Sault Ste. Marie Railway Company *vs.* Railroad Commission of Wisconsin, 136 Wisconsin 146, 159, (1908).

[104] *Constitution of Iowa,* 1857, Art. III, Sec. 30; Art. VIII, Sec. 1.

[105] The language of Mr. Justice Moody in City of Knoxville *vs.* Knoxville Water Company, 212 United States 1, 18, (1909).

[106] Munn *vs.* Illinois, 94 United States 113, 133, 134, (1876); Chicago, Burlington and Quincy Railway *vs.* Iowa, 94 United States 155, (1876); Peik *vs.* Chicago and Northwestern Railway Company, 94 United States 164, (1876); Chicago, Milwaukee and St. Paul Railroad Company *vs.* Ackley, 94 United States 179, (1876); Winona and St. Peter Railroad Company *vs.* Blake, 94 United States 180, (1876); Stone *vs.* Wisconsin, 94 United States 181, (1876).

[107] Railroad Commission Cases, 116 United States 307, (1886) — remarks of Mr. Chief Justice Waite at page 331: ''From what has thus been said, it is not to be inferred that this power of limitation or regulation is itself without limit. This power to regulate is not a power to destroy, and limitation is not the equivalent of confiscation. Under pretence of regulating fares and freights, the State can not require a railroad corporation to carry persons or property without reward; neither can it do that which in law amounts to a taking of private property for public use without just compensation, or without due process of law''.

See also Chicago, Milwaukee and St. Paul Railroad Company *vs.* Minnesota, 134 United States 418, (1890) — remarks of Mr. Justice Blatchford at page 458: ''The question of the reasonableness of a rate of charge for transportation by a railroad company, involving as it does the element of reasonableness both as regards the company and as regards the public, is eminently a question for judicial investigation, requiring due process of law for its determination''.

Finally, see Reagan *vs.* Farmers' Loan and Trust Company, 154 United States 362, (1894) — remarks of Mr. Justice Brewer at page 399: ''These cases all support the proposition that while it is not the province of the courts to enter upon the merely administrative duty of framing a tariff of rates for carriage, it is within the scope of judicial power and a part of judicial duty to restrain anything which, in the form of a regulation of rates, operates to deny to the owners of property invested in the business of transportation that equal protection which is the constitutional right of all owners of other property.''

Compare Wyman's *Public Service Corporations,* Secs. 1427–1429.

[108] Wilcox *vs.* Consolidated Gas Company, 212 United States 19, 41, (1909); San Diego Land and Town Company *vs.* National City, 174 United

States 739, 754, (1899); San Diego Land and Town Company *vs.* Jasper, 189 United States 439, 442, (1903); City of Knoxville *vs.* Knoxville Water Company, 212 United States 1, 8, (1909); Cedar Rapids Gas Light Company *vs.* City of Cedar Rapids, 144 Iowa 426, 447, (1909).

109 Minneapolis, St. Paul and Sault Ste. Marie Railway Company *vs.* Railroad Commission of Wisconsin, 136 Wisconsin 146, 164, (1908).

110 Smyth *vs.* Ames, 169 United States 466, 546, 547, (1898); Hill *vs.* Antigo Water Company, 3 Wisconsin Railroad Commission Reports 623–777, at 631, (1909); Cunningham *vs.* Chippewa Falls Water Works and Lighting Company, 5 Wisconsin Railroad Commission Reports 302–359, at 308, 309, (1910); Buell *vs.* Chicago, Milwaukee and St. Paul Railway Company, 1 Wisconsin Railroad Commission Reports 324–507, at 333, (1907).

111 Prentiss *vs.* Atlantic Coast Line Company, 211 United States 210, 226, (1908) and the cases cited in note 107 above.

112 Prentiss *vs.* Atlantic Coast Line Company, 211 United States 210, 226, (1908). "A judicial inquiry investigates, declares and enforces liabilities as they stand on present or past facts and under laws supposed already to exist. Legislation on the other hand looks to the future and changes existing conditions by making a new rule to be applied thereafter to all or some part of those subject to its power."

See also the cases cited in note 108 above.

113 Chicago and Northwestern Railway Company *vs.* Dey, 35 Federal Reporter 866, 874, (1888).

114 See Goodnow's *Principles of Administrative Law in the United States*, Ch. I; Wyman's *Public Service Corporations*, Section 1404.

115 Wayman *vs.* Southard, 10 Wheaton 1 (United States, 1825); Railroad Commission Cases, 116 United States 307, (1886); Texas and Pacific Railway Company *vs.* Abilene Cotton Oil Company, 204 United States 426, (1907); Buttfield *vs.* Stranahan, 192 United States 470, (1904); Village of Saratoga Springs *vs.* Saratoga Gas, Electric Light and Power Company, 191 New York 123, (1908); Chicago, Burlington and Quincy Railroad Company *vs.* Jones, 149 Illinois 361, (1894); Minneapolis, St. Paul and Sault Ste. Marie Railway Company *vs.* Railroad Commission of Wisconsin, 136 Wisconsin 146, 159, 161, (1908).

116 Reagan *vs.* Farmers' Loan and Trust Company, 154 United States 362, (1894); Interstate Commerce Commission *vs.* Cincinnati, New Orleans and Texas and Pacific Railway Company, 167 United States 479, (1897); State *vs.* New Haven and Northampton Company, 43 Connecticut 351, (1876); State *vs.* Atlantic Coast Line Railroad Company, 51 Florida 543,

578, (1906); Minneapolis, St. Paul and Sault Ste. Marie Railway Company *vs.* Railroad Commission of Wisconsin, 136 Wisconsin 146, 157, (1908).

117 Goodnow's *Principles of Administrative Law in the United States,* Chs. I, III, and IV; Powell's *Separation of Powers* in the *Political Science Quarterly,* June, 1912; Goodnow's *Social Reform and the Constitution,* Ch. V.

118 See Friedman's *A Word About Commissions* in the *Harvard Law Review,* Vol. XXV, pp. 704–716; and especially the cases collected in Ivins and Mason's *The Control of Public Utilities,* pp. 51–65, 479, 480.

119 *Acts and Resolves of Massachusetts,* 1885, Ch. 314.

120 *Acts and Resolves of Massachusetts,* 1887, Ch. 385.

121 Gray's *The Gas Commission of Massachusetts* in *The Quarterly Journal of Economics,* Vol. XIV, pp. 509, 517, 518.

122 Allen's *State Supervision in Massachusetts* in *Municipal Affairs,* Vol. IV, p. 526; Gray's *Competition and Capitalization as Controlled by the Massachusetts Gas Commission* in *The Quarterly Journal of Economics,* Vol. XV, pp. 254–276; Bullock's *Control of the Capitalization of Public Service Corporations in Massachusetts* in *The Publications of the American Economic Association,* Series 3, Vol. X, pp. 384–414, 1909; Ripley's *The Capitalization of Public Service Corporations* in *The Quarterly Journal of Economics,* Vol. XV, pp. 106–137. For a less favorable view see Adams's *Municipal Gas and Electric Plants in Massachusetts* in the *Political Science Quarterly,* Vol. XVII, pp. 247–255.

123 *Acts and Resolves of Massachusetts,* 1906, Ch. 433.

124 Wright's *Development of Transit Control in New York City* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 552–575.

125 *Annual Message of Governor Hughes,* 1907, *New York Senate Documents,* 30th Session, Vol. I, pp. 15–18.

126 *Laws of New York,* 1907, Ch. 480.

See Osborne's *The Public Service Commissions Law of New York* in *The City Club Bulletin,* April 18, 1908, and in *The Proceedings of the American Political Science Association,* 1907, pp. 287–304; Bruère's *Public Utilities Regulations in New York* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 535–551.

127 Gannaway's *The Public Service Corporation Question* in *The Municipality,* Vol. VII, pp. 64–72.

128 *Laws of Wisconsin*, 1905, Ch. 362.

129 *La Follette's Autobiography* in *The American Magazine* for May, 1912.

130 *Laws of Wisconsin*, 1907, Ch. 499.

131 Statement to writer by Mr. Halford Erickson of the Railroad Commission of Wisconsin.

132 *An Act approved August 22, 1907, Enlarging the Powers of the Railroad Commission of Georgia* (pamphlet).

133 *Acts of Vermont*, 1908, No. 116.

134 *Public Laws of Maryland*, 1910, Ch. 180.

135 *Laws of New Jersey*, 1910, Ch. 195.

136 *Laws of California*, 1911, Ch. 14.

137 *Public Acts of Connecticut*, 1911, Ch. 128.

138 *Laws of Kansas*, 1911, Ch. 238.

139 *Laws of Nevada*, 1911, Ch. 162.

140 *Laws of New Hampshire*, 1911, Ch. 164.

141 *Laws of Ohio*, 1911, Ch. 549.

142 *Laws of Washington*, 1911, Ch. 117.

143 *Laws of Rhode Island*, 1911, Ch. 795.

144 *Constitution of Oklahoma*, Article IX.

145 *Laws of Oregon*, 1911, Ch. 279.

146 The California Railroad Commission was established in 1891, but received jurisdiction over urban utilities in 1912; the Georgia Railroad Commission dates from 1879, but its jurisdiction over urban utilities dates from 1907; the Massachusetts Highway Commission was created in 1893, but received jurisdiction over telegraph and telephone companies in 1906; the Wisconsin Railroad Commission was established in 1905, but its jurisdiction was extended to urban utilities in 1907.

147 Bruère's *Public Utilities Regulation in New York* in *The Annals of the American Academy of Political and Social Science*, Vol. XXI, pp. 535, 551.

148 *Revised Statutes of Wisconsin*, Sec. 1797 m-8, 9, 11, 12, 13, 14, 16, 18; *Laws of Oregon*, 1911, Ch. 279, Secs. 11, 12, 13; *Gas and Electricity Laws of Massachusetts* (pamphlet, 1910), p. 29; *Laws of Nevada*, 1911, Ch. 162, Sec. 7; *Laws of Kansas*, 1911, Ch. 238, Secs. 23, 29.

149 *Public Utilities Act of California,* 1911, Sec. 48; *Public Utilities Act of Georgia,* 1907, Sec. 6; *Public Service Commission Law of Maryland,* a pamphlet published by the Public Service Commission in 1912, Secs. 24, 31¾; *Public Service Commission Act of New Hampshire* (pamphlet, 1911), Sec. 6; *Public Utilities Act of New Jersey* (pamphlet, 1911), Sec. 17d; *Public Service Commissions Law of New York,* a pamphlet issued by the Public Service Commission of the First District in 1911, Secs. 52, 66–4; *Laws of Ohio,* 1911, Ch. 549, Sec. 12; *Constitution of Oklahoma,* Art. IX, Sec. 29; *Public Service Commission Act of Washington* (pamphlet, 1912), Sec. 78.

150 *Revised Statutes of Wisconsin,* Sec. 1797 m-15; *Public Utilities Laws of Oregon* (pamphlet published by the Railroad Commission of Oregon, 1911), Sec. 496; *Laws of Ohio,* 1911, Ch. 549, Secs. 51, 52; *Public Utilities Act of New Jersey,* Sec. 17 (f); *Public Utilities Act of California,* Sec. 49.

151 *Laws of Kansas,* 1911, Ch. 238, Sec. 37.

152 *Revised Statutes of Wisconsin,* Sec. 1797 m-38; *Public Utilities Laws of Oregon,* 1911, Sec. 495; *Laws of Kansas,* 1911, Ch. 238, Sec. 29.

153 *Public Utilities Laws of Wisconsin,* 1911, Sec. 1797 m-5; *Public Service Commission Law of Washington,* 1912, Sec. 92; *Constitution of Oklahoma,* Art. IX, Sec. 29; *Public Utilities Laws of Oregon,* 1911, Sec. 488.

154 *Public Utilities Act of California,* 1911, Sec. 47; *Public Utilities Act of Georgia,* 1907, Sec. 7; *Public Service Commission Law of Maryland,* 1912, Sec. 30, 31¾; *Laws of Nevada,* 1911, Ch. 162, Sec. 6; *Public Utilities Act of New Jersey,* 1911, Sec. 16, (b); *Laws of Ohio,* 1911, Ch. 549, Sec. 26.

155 *Acts and Resolves of Massachusetts,* 1868, Ch. 310.

156 *The Public Service Commissions Law of New York,* 1911, Secs. 55, 69.

157 *Public Utilities Act of California,* 1911, Sec. 52; *Public Utilities Act of Georgia,* 1907, Sec. 8; *Public Service Commission Law of Maryland,* 1912, Secs. 27, 34; *Public Service Commission Act of New Hampshire,* 1911, Sec. 14.

158 *Laws of Wisconsin,* 1911, Ch. 593.

159 *Laws of Kansas,* 1911, Ch. 238, Secs. 25, 26, 34, 35.

160 *Laws of Ohio,* 1911, Ch. 549, Secs. 56, 57, 58, 61, 62.

161 *Public Utilities Act of New Jersey,* 1911, Sec. 18 (e); *Acts of Vermont,* 1908, No. 116, Sec. 16; *Public Service Laws of Vermont,* 1911, pp. 113, 114.

162 *Acts and Resolves of Massachusetts,* 1908, Ch. 529; 1909, Ch. 316; *Gas and Electricity Laws of Massachusetts,* 1910, pp. 26, 27.

163 *Laws of Ohio,* 1911, Ch. 549, Secs. 63, 64, 65.

164 *Public Utilities Act of California,* 1911, Sec. 51 (a); *Laws of Ohio,* 1911, Ch. 549, Sec. 63.

165 *Public Service Commissions Law of New York,* 1911, Secs. 54, 70; *Laws of Kansas,* 1911, Ch. 238, Sec. 36; *Public Service Commission Law of Maryland,* 1912, Secs. 26, 35; *Public Service Commission Act of New Hampshire,* 1911, Sec. 13, (b); *Public Utilities Act of New Jersey,* 1911, Sec. 18 (h).

166 *Public Utilities Act of California,* 1911, Sec. 51 (b); *Laws of Kansas,* 1911, Ch. 238, Sec. 27; *Public Service Commission Law of Maryland,* 1912, Secs. 26, 35; *Public Service Commission Act of New Hampshire,* 1911, Sec. 13 (c); *Public Utilities Act of New Jersey,* 1911, Sec. 19; *Public Service Commissions Law of New York,* 1911, Secs. 54 (2), 70; *Laws of Ohio,* 1911, Ch. 549, Sec. 63 (d).

167 *Laws of Wisconsin,* 1911, Ch. 593; *Public Utilities Laws of Wisconsin,* 1911, Sec. 1753–11, 2.

168 *Public Utilities Act of California,* 1911, Sec. 52 (b); *Public Service Commission Law of Maryland,* 1912, Secs. 27, 34; *Acts and Resolves of Massachusetts,* 1906, Ch. 392; 1908, Ch. 529; 1909, Ch. 316; *Public Utilities Act of New Jersey,* 1911, Sec. 18 (f); *Public Service Commissions Law of New York,* 1911, Secs. 55, 69; *Laws of Ohio,* 1911, Ch. 549, Sec. 62; *Revised Statutes of Wisconsin,* Sec. 1753–11, 2.

169 *Constitution of Oklahoma,* Art. IX, Sec. 8, 9.

170 *Public Utilities Act of California,* 1911, Sec. 26; *Laws of Ohio,* 1911, Ch. 549, Sec. 76; *Public Utilities Acts of Wisconsin,* 1911, Sec. 1797m-75.

171 *Twenty-Fifth Annual Report of the Massachusetts Board of Gas and Electric Light Commissioners,* 1909, pp. 13–15.

172 *Public Service Commissions Law of New York,* 1911, Secs. 54–2, 70; *Public Service Commission Law of Maryland,* 1912, Secs. 26, 35; *Public Utilities Act of New Jersey,* 1911, Sec. 19.

173 *Public Service Commission Law of Maryland,* 1912, Sec. 16; *Public Service Commissions Law of New York,* 1911, Sec. 65–2; *Laws of Ohio,* 1911, Ch. 549, Sec. 16; *Public Utilities Acts of Oregon,* 1911, a pamphlet issued by the Railroad Commission of Oregon, Sec. 542; *Public Utilities Act of Rhode Island,* 1912, Sec. 39; *Public Service Commission Act of Washington,* 1912, Sec. 31; *Revised Statutes of Wisconsin,* Sec. 1797m-89.

174 *Public Utilities Act of California,* 1912, Sec. 32; *Public Utilities Act of Georgia* (pamphlet, 1907), Sec. 5; *Laws of Kansas,* 1911, Ch. 238, Sec.

16; *Public Utilities Act of Nevada*, 1911, Sec. 19; *Public Utilities Act of New Jersey*, 1911, Sec. 16 (c); *Laws of Ohio*, 1911, Ch. 549, Sec. 25; *Constitution of Oklahoma*, Art. IX, Sec. 18; *Public Utilities Act of Oregon*, 1911, Sec. 530; *Public Utilities Act of Rhode Island*, 1912, Sec. 21; *Acts of Vermont*, 1908, No. 116, Sec. 9 (IV); *Public Service Commission Law of Washington*, 1911, Sec. 53; *Revised Statutes of Wisconsin*, Sec. 1797m-46.

175 *Public Utilities Act of Connecticut*, 1911, Sec. 23; *Public Service Commission Law of Maryland*, 1912, Secs. 23, 37; *Revised Laws of Massachusetts*, 1910, Ch. 121, Sec. 35; *Public Service Commission Act of New Hampshire*, 1911, Sec. 11 (c); *Public Service Commissions Law of New York*, 1911, Secs. 49, 72.

176 *Acts and Resolves of Massachusetts*, 1906, Ch. 433.

177 *Public Utilities Act of California*, 1912, Sec. 14 (b); *Laws of Kansas*, 1911, Ch. 238, Sec. 11; *Public Service Commission Law of Maryland*, 1912, Sec. 15; *Public Utilities Act of Nevada*, 1911, Sec. 11; *Public Service Commission Act of New Jersey*, 1911, Sec. 16 (d); *Public Service Commission Act of New Hampshire*, 1911, Sec. 7 (a); *Public Service Commissions Law of New York*, 1911, Sec. 66 (12); *Laws of Ohio*, 1911, Ch. 549, Sec. 18; *Public Utilities Acts of Oregon*, 1911, Secs. 504, 506; *Public Utilities Act of Rhode Island*, 1912, Sec. 48; *Acts of Vermont*, 1908, No. 116, Secs. 18, 19; *Public Service Commission Law of Washington*, 1911, Sec. 14; *Revised Statutes of Wisconsin*, Sec. 1797m-27, 29.

178 *Public Utilities Act of California*, 1912, Sec. 63; *Laws of Kansas*, 1911, Ch. 238, Sec. 30; *Public Utilities Act of New Jersey*, 1911, Sec. 17 (h); *Revised Statutes of Wisconsin*, Sec. 1797m-105.

179 *Public Service Commission Law of Washington*, 1911, Sec. 15.

180 *Public Service Commissions Law of New York*, 1911, Sec. 66–12.

181 *Public Utilities Act of California*, 1912, Sec. 17–4 (b); *Laws of Kansas*, 1911, Ch. 238, Sec. 12; *Public Service Commission Law of Maryland*, 1912, Sec. 16; *Public Utilities Act of Nevada*, 1911, Sec. 12; *Laws of Ohio*, 1911, Ch. 549, Sec. 20; *Public Utilities Acts of Oregon*, 1911, Sec. 542; *Public Utilities Act of Rhode Island*, 1912, Secs. 39, 41; *Public Service Commission Law of Washington*, 1911, Sec. 29; *Revised Statutes of Wisconsin*, Sec. 1797m-89.

182 *Public Utilities Act of California*, 1912, Sec. 46 (a); *Public Utilities Act of Connecticut*, 1911, Sec. 19; *Laws of Kansas*, 1911, Ch. 238, Sec. 22; *Public Service Commission Law of Maryland*, Sec. 31¾; *Revised Laws of Massachusetts*, Ch. 121, Sec. 6; *Public Utilities Act of Nevada*, 1911, Sec. 10; *Public Utilities Act of New Jersey*, 1911, Sec. 16 (f); *Public Service*

Commissions Law of New York, 1911, Sec. 66–3; *Laws of Ohio*, 1911, Ch. 549, Secs. 36, 38; *Public Utilities Acts of Oregon*, 1911, Secs. 500, 501; *Public Utilities Act of Rhode Island*, 1912, Secs. 45, 46; *Acts of Vermont*, 1908, No. 116, Sec. 9 (I); *Public Service Commission Laws of Washington*, 1911, Sec. 54; *Revised Statutes of Wisconsin*, Sec. 1797 m-22, 23.

183 *Revised Laws of Massachusetts*, Ch. 58, Sec. 14; *Public Service Commission Act of New Hampshire*, 1911, Sec. 5 (c); *Public Service Commissions Law of New York*, 1911, Sec. 66–2; *Public Utilities Acts of Oregon*, 1911, Sec. 502; *Public Service Commission Law of Washington*, 1911, Secs. 67, 74; *Revised Statutes of Wisconsin*, Sec. 1797 m-41.

184 *Revised Laws of Massachusetts*, Ch. 58, Sec. 10; *Public Service Commission Law of Maryland*, 1911, Sec. 31¾; *Public Service Commissions Law of New York*, 1911, Sec. 67–2; *Public Service Commission Law of Washington*, 1911, Sec. 74.

185 *Public Service Commission Law of Washington*, 1911, Sec. 74.

186 *Public Service Commissions Law of New York*, 1911, Sec. 67–3; *Public Service Commission Law of Washington*, 1911, Sec. 74.

187 *Public Utilities Acts of Oregon*, 1911, Sec. 502.

188 *Revised Statutes of Wisconsin*, Sec. 1797m-24; *Public Utilities Acts of Oregon*, 1911, Sec. 502; *Public Utilities Act of Rhode Island*, 1912, Sec. 47; *Laws of Ohio*, 1911, Ch. 549, Sec. 39; *Public Utilities Act of New Jersey*, 1911, Sec. 16 (h); *Public Utilities Act of California*, 1912, Sec. 46 (a).

189 *Laws of Kansas*, 1911, Ch. 238, Sec. 22.

190 *Public Utilities Act of California*, 1912, Sec. 46 (c); *Public Utilities Act of Connecticut*, 1911, Sec. 20; *Public Service Commission Law of Maryland*, 1911, Sec. 32; *Revised Laws of Massachusetts*, Ch. 121, Sec. 36; Ch. 58, Sec. 11; *Public Utilities Act of Nevada*, 1911, Sec. 10; *Public Utilities Act of New Jersey*, 1911, Sec. 16 (j); *Public Service Commissions Law of New York*, 1911, Sec. 67–5; *Laws of Ohio*, 1911, Ch. 549, Sec. 39; *Public Utilities Acts of Oregon*, 1911, Sec. 502; *Public Utilities Act of Rhode Island*, 1912, Sec. 47; *Public Service Commission Law of Washington*, 1911, Sec. 74; *Revised Statutes of Wisconsin*, Sec. 1797m-24.

191 *Public Utilities Act of California*, 1912, Sec. 38; *Public Utilities Act of Connecticut*, 1911, Sec. 21; *Public Service Commission Law of Maryland*, 1911, Sec. 23; *Laws of Ohio*, 1911, Ch. 549, Sec. 44; *Public Utilities Acts of Oregon*, 1911, Sec. 487.

192 *Public Utilities Act of Connecticut*, 1911, Sec. 21.

193 *Public Utilities Act of California,* 1912, Sec. 40; *Laws of Ohio,* 1911, Ch. 549, Sec. 66; *Constitution of Oklahoma,* Art. IX, Sec. 5; *Public Service Commission Law of Washington,* 1911, Sec. 73; *Revised Statutes of Wisconsin,* Sec. 1797m-4.

194 *Public Service Commission Law of Washington,* 1911, Secs. 67, 70.

195 *Laws of Kansas,* 1911, Ch. 238, Sec. 32.

196 *Public Utilities Act of Connecticut,* 1911, Secs. 17, 18.

197 *Public Utilities Act of Nevada,* 1911, Sec. 27; *Public Service Commissions Law of New York,* 1911, Sec. 47; *Public Utilities Acts of Oregon,* 1911, Sec. 552; *Public Utilities Act of Rhode Island,* 1912, Sec. 49; *Acts of Vermont,* 1908, No. 116, Sec. 7; *Revised Statutes of Wisconsin,* Sec. 1797m-101; *Public Service Commission Law of Washington,* 1911, Sec. 63.

198 *Revised Laws of Massachusetts,* Ch. 121, Sec. 39.

199 *Public Service Commission Law of Maryland,* 1912, Sec. 22.

200 *Public Utilities Act of California,* 1912, Sec. 44.

201 *Acts and Resolves of Massachusetts,* 1885, Ch. 314.

202 *Acts and Resolves of Massachusetts,* 1887, Ch. 382.

203 Gray's *Competition and Capitalization as Controlled by the Massachusetts Gas Commission* in *The Quarterly Journal of Economics,* Vol. XV, pp. 254–260.

204 *Public Utilities Act of California,* 1912, Sec. 50 (a).

205 *Revised Statutes of Wisconsin,* Sec. 1797m-74.

206 *Laws of Ohio,* 1911, Ch. 549, Sec. 54.

207 *Laws of Kansas,* 1911, Ch. 238, Sec. 31; *Public Service Commission Law of Maryland,* 1912, Secs. 26, 33; *Public Utilities Act of New Hampshire,* 1911, Sec. 13 (a); *Public Utilities Act of New Jersey,* 1911, Sec. 24; *Public Service Commissions Law of New York,* 1911, Secs. 53, 68.

208 *Acts of Vermont,* 1908, No. 116, Sec. 23.

209 *Laws of Wisconsin,* 1911, Ch. 596; *Revised Statutes of Wisconsin,* Sec. 1797m-74, 76, 77, 78.

210 *Revised Laws of Massachusetts,* Ch. 25, Sec. 55; Ch. 34, Sec. 31.

211 *Public Utilities Act of Connecticut,* 1911, Sec. 37.

212 *Public Utilities Act of Rhode Island,* 1912, Sec. 51.

213 *Public Service Commissions Law of New York,* 1911, Sec. 68.

214 *Public Service Commission Law of Maryland,* 1912, Sec. 33.

215 *Revised Statutes of Wisconsin,* Sec. 1797m-74 (3), 79, 80, 82.

216 *Revised Laws of Massachusetts,* Ch. 34, Sec. 10.

217 *Public Utilities Act of New Jersey,* 1911, Sec. 25.

218 *Public Service Commission Law of Washington,* Secs. 8, 105.

219 *Revised Laws of Massachusetts,* Ch. 34, Secs. 21, 22, 23, 24, 27, 29, 30, 32; *Public Service Commissions Law of New York,* 1911, Sec. 66; *Acts of Vermont,* 1908, No. 116, Sec. 2; *Revised Statutes of Wisconsin,* Sec. 1797 m-1.

220 *Public Utilities Act of California,* 1912, Sec. 50 (c); *Laws of Kansas,* 1911, Ch. 238, Sec. 31; *Public Service Commission Law of Maryland,* 1912, Secs. 26, 33, 42; *Public Utilities Act of New Hampshire,* 1911, Sec. 13 (a); *Public Utilities Act of New Jersey,* 1911, Sec. 24; *Public Service Commissions Law of New York,* 1911, Secs. 53, 68; *Revised Laws of Massachusetts,* Ch. 121, Secs. 25, 26, 27; *Revised Statutes of Wisconsin,* Sec. 1797m-74.

221 *Public Utilities Act of California,* 1912, Sec. 50 (c); *Laws of Kansas,* 1911, Ch. 238, Sec. 33; *Public Service Commission Law of New Hampshire,* 1911, Sec. 13 (a); *Public Utilities Act of New Jersey,* 1911, Sec. 24.

222 *Public Utilities Act of Georgia,* 1907, Sec. 5.

223 *Laws of Kansas,* 1911, Ch. 238, Sec. 33; *Public Utilities Acts of Oregon,* 1911, Sec. 540; *Revised Statutes of Wisconsin,* Sec. 1797m-87.

224 *Laws of Ohio,* 1911, Ch. 549, Secs. 46–48, 53.

225 *Revised Laws of Massachusetts,* Ch. 121, Secs. 17, 19, 25, 26; Ch. 122, Sec. 2; *Public Statutes of Vermont,* Secs. 4520, 4525, 4836–4853.

226 *Laws of Kansas,* 1911, Ch. 238, Sec. 33; *Revised Laws of Massachusetts,* Ch. 121, Sec. 27; *Laws of Ohio,* 1911, Ch. 549, Secs. 46, 47, 53; *Public Utilities Acts of Oregon,* 1911, Sec. 540; *Public Utilities Act of Rhode Island,* 1912, Sec. 52; *Acts of Vermont,* 1908, No. 116, Sec. 17; *Revised Statutes of Wisconsin,* Sec. 1797m-87.

227 *Public Utilities Act of California,* 1912, Sec. 82.

228 *Public Utilities Act of California,* 1912, Sec. 62; *Public Utilities Act of Connecticut,* 1911, Sec. 23; *Laws of Kansas,* 1911, Ch. 238, Sec. 33; *Public Service Commission Law of Maryland,* 1912, Sec. 33; *Revised Laws of Massachusetts,* Ch. 121, Sec. 27; *Public Service Commission Law of New Hampshire,* 1911, Sec. 10 (c); *Public Service Commissions Law of New*

York, 1911, Sec. 71; *Public Utilities Acts of Oregon,* 1911, Sec. 525; *Revised Statutes of Wisconsin,* Sec. 1797m-52.

229 *Constitution of Oklahoma,* Art. IX, Sec. 19.

230 *Acts and Resolves of Massachusetts,* 1906, Ch. 433.

231 *Public Utilities Act of California,* 1912, Sec. 67; *Public Utilities Act of New Jersey,* 1911, Sec. 38; *Public Service Commission Law of Washington,* 1911, Sec. 86.

232 *Public Utilities Act of Connecticut,* 1911, Sec. 29; *Constitution of Oklahoma,* Art. IX, Sec. 20; *Public Utilities Act of Rhode Island,* 1912, Sec. 34; *Acts of Vermont,* 1908, No. 116, Sec. 12.

233 *Laws of Kansas,* 1911, Ch. 238, Sec. 21; *Public Service Commission Law of Maryland,* 1912, Sec. 43; *Public Utilities Act of Nevada,* 1911, Sec. 26; *Public Service Commission Act of New Hampshire,* 1911, Sec. 17 (b); *Laws of Ohio,* 1911, Ch. 549, Sec. 72; *Public Utilities Acts of Oregon,* 1911, Sec. 533; *Revised Statutes of Wisconsin,* Sec. 1797m-64.

234 *Public Utilities Act of Georgia,* 1907, Sec. 12; *Revised Laws of Massachusetts,* Ch. 121, Secs. 8, 9; *Public Service Commissions Law of New York,* 1911, Sec. 24.

235 *Public Utilities Act of California,* 1912, Sec. 67; *Constitution of Oklahoma,* Art. IX, Sec. 20; *Public Utilities Act of Rhode Island,* 1912, Sec. 34; *Acts of Vermont,* 1908, No. 116, Sec. 12.

236 *Public Utilities Act of Georgia,* 1907, Sec. 14; *Revised Statutes of Wisconsin,* Sec. 1797m-64.

237 *Public Utilities Act of Connecticut,* 1911, Sec. 31.

238 *Public Utilities Acts of Oregon,* 1911, Sec. 533.

239 *Public Utilities Act of New Jersey,* 1911, Sec. 38.

240 *Public Utilities Act of California,* 1912, Sec. 67.

241 *Public Utilities Act of California,* 1912, Sec. 67; *Public Utilities Act of New Jersey,* 1911, Sec. 38; *Constitution of Oklahoma,* Art. IX, Sec. 22; *Acts of Vermont,* 1908, No. 116, Sec. 12; *Public Service Commission Act of Washington,* 1911, Sec. 86.

242 *Revised Statutes of Wisconsin,* Sec. 1797m-67; *Public Utilities Act of Rhode Island,* 1912, Sec. 37; *Public Utilities Acts of Oregon,* 1911, Sec. 535; *Public Service Commission Act of New Hampshire,* 1911, Sec. 17 (d); *Public Utilities Act of Nevada,* 1911, Sec. 26 (b); *Public Service Commission Law of Maryland,* 1912, Sec. 44.

243 *Public Utilities Act of California*, 1912, Sec. 67; *Acts of Vermont*, 1908, No. 116, Sec. 12.

244 *Public Service Commission Act of Washington*, 1911, Sec. 92.

245 *Public Service Commission Law of Maryland*, 1912, Sec. 46; *Public Utilities Act of Nevada*, 1911, Sec. 26 (e); *Public Service Commission Act of New Hampshire*, 1911, Sec. 17 (h); *Public Utilities Acts of Oregon*, 1911, Sec. 537; *Revised Statutes of Wisconsin*, Sec. 1797m-70.

246 Minneapolis, St. Paul and Sault Ste. Marie Railway Company *vs.* Railroad Commission of Wisconsin, 136 Wisconsin 146, 166, (1908).

247 Cedar Rapids Gas Light Company *vs.* City of Cedar Rapids, 144 Iowa 426, (1909); 223 United States 655, (1912), 32 Supreme Court Reporter, p. 389.

248 City of Knoxville *vs.* Knoxville Water Company, 212 United States 1, (1909).

249 *Constitution of Oklahoma*, Art. IX, Sec. 21.

250 *Public Utilities Act of California*, 1912, Sec. 68 (d).

251 *Public Service Commission Act of New Hampshire*, 1911, Sec. 17 (g).

252 *Laws of Ohio*, 1911, Ch. 549, Sec. 73; *Public Utilities Acts of Oregon*, 1911, Sec. 534; *Public Service Commission Law of Washington*, 1912, Sec. 87.

253 *Public Utilities Act of Nevada*, 1911, Sec. 26 (a).

254 *Revised Statutes of Wisconsin*, Sec. 1797m-66.

255 *Public Service Commission Law of Maryland*, 1912, Sec. 43.

256 *Public Utilities Act of California*, 1912, Sec. 68 (b); *Public Service Commission Act of Washington*, 1912, Sec. 87.

257 Thelen's *Report on Leading Railroad Commissions.*

258 *Report of Committe de Public Service Corporations.*

259 See especially the articles by Professor Gray in *The Quarterly Journal of Economics*, Vol. XIV, p. 509; Vol. XV, p. 254.

260 *Twenty-sixth Annual Report of the Massachusetts Board of Gas and Electric Light Commissioners*, 1910, p. 42.

261 *Twenty-sixth Annual Report of the Massachusetts Board of Gas and Electric Light Commissioners*, 1910, pp. 39–42.

262 *Twenty-sixth Annual Report of the Massachusetts Board of Gas and Electric Light Commissioners*, 1910, pp. 44–47.

[263] For a clear account see the *Fourth Annual Report of the Railroad Commission of Wisconsin,* 1909–1910, Part I. An interesting and suggestive sketch is contained in Max Thelen's *Report on Leading Railroad Commissions,* pp. 31–42. Many statements in the text are based on cases adjudged by the commission.

[264] See the article by Mr. J. N. Cadby, Chief Inspector, in *The Telephone Engineer* for May, 1912.

[265] On the New York commissions see Thelen's *Report on Leading Railroad Commissions,* pp. 43–53, 65–73; Walker's *State Regulation of Public Service Corporations in the City of New York,* a pamphlet issued by the Public Service Commission; the addresses by Chairman Maltbie of the First District commission in *The City Club Bulletin* for January 20, 1909, and in *The Annals of the American Academy of Political and Social Science,* Vol. XXXVII, p. 170; and addresses of Chairman Stevens of the commission for the Second District in *Discussion of Present Day Problems,* a pamphlet issued by the Empire State Gas Association in October, 1907. The best source is, of course, the voluminous reports of the two commissions. Most statements in the text are based thereon.

[266] Walker's *State Regulation of Public Service Corporations in the City of New York,* pp. 39–41.

[267] Walker's *State Regulation of Public Service Corporations in the City of New York,* p. 45.

[268] Walker's *State Regulation of Public Service Corporations in the City of New York,* pp. 22–24.

[269] Addresses of President Pierce of the International Railway Company and of President Humphreys of Stevens Institute of Technology, in *Discussion of Present Day Problems,* a pamphlet published by the Empire State Gas Association in 1907.

[270] Bancroft's *Moderation in Control of Public Service Corporations* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, p. 701; Bergren's *Restrictive Legislation against Public Service Corporations in New Jersey* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 659–670; Jones's *American Municipal Services from the Standpoint of the Entrepreneur* in *The Annals of the American Academy of Political and Social Science,* Vol. XXVIII, p. 371; Whitridge's *Official Valuations of Private Property* in *Publications of the American Economic Association,* 1910, pp. 239–252; Cotton's *An Argument against an Official Valuation of Railroad Properties* in *Publications of the American Economic Association,* 1910, pp. 252–258.

271 Adams's *Municipal Gas and Electric Plants in Massachusetts* in the *Political Science Quarterly*, Vol. XVII, pp. 247–255.

272 Brennan's *Regulation and Control of Local Public Service Corporations by State Boards* in *The City Hall* for September, 1909.

273 See *The Municipality*, January, 1910, addresses by the City Attorney of Manitowoc, the Mayor of Madison, and a member of the City Council of Milwaukee.

274 Lapp's *Public Utilities Control* in *The American Political Science Review*, Vol. I, pp. 626–638; Bullock's *Control of Public Service Corporations in Massachusetts* in *The Publications of the American Economic Association*, 1903, pp. 384–414; Pollock's *The Public Service Commissions of the State of New York* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, p. 649; Hatton's *Public Service Commissions* in *The Proceedings of the American Political Science Association*, 1907, pp. 305–315; Hudnall's *The Public Service Commission Law of Wisconsin* in *The Proceedings of the American Political Science Association*, 1907, pp. 316–323.

275 Statement to the writer by Mr. John McVicar of Des Moines.

276 Statement to the writer by Mr. N. S. Ketchum of the Iowa State Board of Railroad Commissioners.

277 *Code of Iowa, Supplement of 1907*, Sec. 1641-b.

278 Letter of A. H. Davison, Secretary of the Executive Council, September 9, 1912.

279 Aldrich *vs.* Paine, 106 Iowa 461, 467, (1898).

280 *Code of Iowa, Supplement of 1907*, Secs. 720, 721; *Laws of Iowa*, 1911, p. 25; Brown *vs.* Carl, 111 Iowa 608, 610, (1900).

281 *Code of Iowa*, 1897, Sec. 767.

282 *Code of Iowa*, 1897, Sec. 775; *Supplement of 1907*, Sec. 776.

283 *Code of Iowa, Supplement of 1907*, Sec. 2033-c, d.

284 *Code of Iowa*, 1897, Sec. 775; *Supplement of 1907*, Sec. 776.

285 *Code of Iowa*, 1897, Sec. 2158.

286 Chamberlain *vs.* Iowa Telephone Company, 119 Iowa 619, (1903).

287 *Code of Iowa, Supplement of 1907*, Sec. 725.

288 *Code of Iowa*, 1897, Secs. 767, 775, 834.

289 *Code of Iowa*, 1897, Sec. 775.

290 *Code of Iowa, Supplement of 1907*, Sec. 720.

291 *Laws of Iowa*, 1909, p. 36; 1911, p. 26.

292 *Code of Iowa, Supplement of 1907*, Sec. 724.

293 *Constitution of Iowa*, 1857, Art. XI, Sec. 3; Windsor *vs.* Des Moines, 110 Iowa 175, (1900).

294 *Code of Iowa, Supplement of 1907*, Sec. 894.

295 *Code of Iowa, Supplement of 1907*, Sec. 742.

296 *Code of Iowa, Supplement of 1907*, Sec. 741-b.

297 *Code of Iowa, Supplement of 1907*, Sec. 741-c.

298 *Code of Iowa, Supplement of 1907*, Title V, Ch. 14-a.

299 *Code of Iowa, Supplement of 1907*, Sec. 747-a.

300 Data obtained by questionnaire. The cities are: Des Moines, Dubuque, Davenport, Cedar Rapids, Waterloo, Clinton, Burlington, Ottumwa, Muscatine, Fort Dodge, Marshalltown, Boone, Centerville, Webster City, Cedar Falls, Shenandoah, and Fairfield.

301 *The Register and Leader*, July 5, 1912; letter to the writer from Mayor James R. Hanna, August 28, 1912.

302 City of Des Moines *vs.* Des Moines City Railway Company, 214 United States 179, (1909).

303 *The Register and Leader*, February 28, 1910, and August 22, 1912.

304 Des Moines Gas Company *vs.* City of Des Moines, Federal Reporter (1912), not yet published.

305 Des Moines Water Company *vs.* City of Des Moines, 192 Federal Reporter 193, (1911).

306 Des Moines Water Company *vs.* City of Des Moines, 192 Federal Reporter 193, 198, (1911).

307 Chamberlain *vs.* Iowa Telephone Company, 119 Iowa 619, (1903).

308 Compare Gray's *The Gas Commission of Massachusetts* in *The Quarterly Journal of Economics*, Vol. XIV, pp. 509–536, 510.

309 Des Moines Water Company *vs.* City of Des Moines, 192 Federal Reporter 193, 194, (1911).

310 Neenah (Wisconsin) and Dubuque (Iowa).

311 See *Fourth Annual Report of the Department of Finance and Municipal Accounts*, Table of Contents.

312 Computed by the writer from the *Fourth Annual Report of the Department of Finance and Municipal Accounts*, 1911, and subject, therefore, to the errors and omissions thereof. The item "annual operating" expenses is especially untrustworthy.

313 *Code of Iowa, Supplement of 1907*, Sec. 1056-a 10.

314 *House File*, No. 147, and *Senate File*, No. 366, Thirty-third General Assembly, 1909.

315 *House File*, No. 89, and *Senate File*, No. 42, Thirty-fourth General Assembly, 1911.

316 *Journal of the House of Representatives*, 1911, p. 1543; *Journal of the Senate*, 1911, p. 1473.

317 *Journal of the Senate*, 1909, p. 178.

318 *Journal of the House of Representatives*, 1909, pp. 199, 733, 745, 746, 747, 825, 860, 909; 1911, pp. 407, 421, 473, 563, 797, 821; *Journal of the Senate*, 1909, pp. 178, 838, 1230; 1911, pp. 404, 433, 555.

319 Statements of Messrs. John McVicar and James R. Hanna, of Des Moines.

320 Peterson's *Corrupt Practices Legislation in Iowa* in this series.

321 See Sikes's *The Relation of Chicago to Public Service Corporations* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXI, pp. 689–694.

322 Brennan's *Regulation and Control of Local Public Service Corporations by State Boards* in *The City Hall*, September, 1909, pp. 130–134, 133.

323 Wyman's *Public Service Corporations*, Chapter II.

324 Compare Cleveland's *Municipal Ownership as a Form of Governmental Control* in *The Annals of the American Academy of Political and Social Science*, Vol. XXVIII, pp. 359–370.

325 Meyer's *Central Utilities Commissions and Home Rule* in *The American Political Science Review*, Vol. V, pp. 374–393, at 386, 387.

326 Meyer's *Central Utilities Commissions and Home Rule* in *The American Political Science Review*, Vol. V, pp. 374, 388.

327 Morgan's *The Indeterminate Permit as a Satisfactory Franchise* in *The Annals of the American Academy of Political and Social Science*, Vol. XXXVII, pp. 142–159.

328 Meyer's *Central Utilities Commissions and Home Rule* in *The American Political Science Review*, Vol. V, pp. 374, 388.

329 *Code of Iowa,* 1873, Sec. 1090; *Code of Iowa,* 1897, Sec. 1619.

330 Howe's *The City: The Hope of Democracy,* Chs. VIII, IX; Bemis's *Municipal Monopolies,* Ch. IX; Bruère's *Public Utilities Regulation in New York* in *The Annals of the American Academy of Political and Social Science,* Vol. XXXI, pp. 535–551.

331 *Code of Iowa,* 1897, Sec. 726.

332 Compare Friedman's *A Word About Commissions* in *The Harvard Law Review,* Vol. XXV, pp. 704, 715; and Whitney's *Official Valuation of Railroad Properties* in *The Publications of the American Economic Association,* 1910, pp. 259–262.

333 Opinion of the Justices, 138 Massachusetts 601, 603, (1885); City of Aurora *vs.* Schoeberlein, 230 Illinois 496, 502, 504, (1907).

334 Burfenning *vs.* Chicago, St. Paul, Minneapolis and Omaha Railway Company, 163 United States 321, 323, (1896).

335 United States *vs.* Ju Toy, 198 United States 253, 261, 263, (1905).

336 Oceanic Steam Navigation Company *vs.* Stranahan, 214 United States 320, 340–343, (1909).

337 *Code of Iowa,* 1897, Sec. 2820; Wood *vs.* Farmer, 69 Iowa 533, (1886).

338 Compare Friedman's *A Word About Commissions* in *The Harvard Law Review,* Vol. XXV, pp. 704–716, at 710, 711.

339 Railroad Commission Cases, 116 United States 307, 335, (1887); Chicago, Milwaukee and St. Paul Railway Company *vs.* Minnesota, 134 United States 418, 456, 457, (1890); Reagan *vs.* Farmers' Loan and Trust Company, 154 United States 362, 399, (1894); Prentis *vs.* Atlantic Coast Line Company, 211 United States 210, 226, (1908).

340 Prentis *vs.* Atlantic Coast Line Company, 211 United States 210, 228–230, (1908).

341 *Constitution of Iowa,* 1857, Art. III, Sec. 1.

342 *Constitution of Iowa,* 1857, Art. V, Sec. 4.

343 Compare Gray's *Public Service Commissions* in *The Proceedings of the American Political Science Association,* Vol. IV, pp. 324–335, at 334.

344 Walker's *State Regulation of Public Service Corporations in the City of New York,* p. 13.

345 *Laws of Wisconsin,* 1911, Ch. 593; *Revised Statutes of Wisconsin,* Sec. 1753–21.