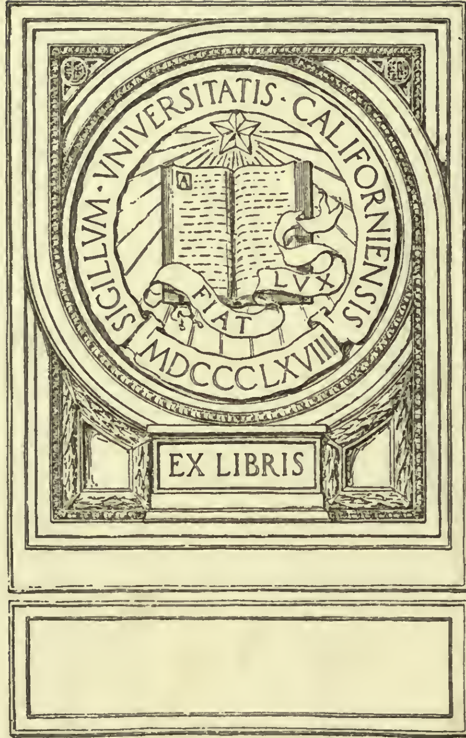
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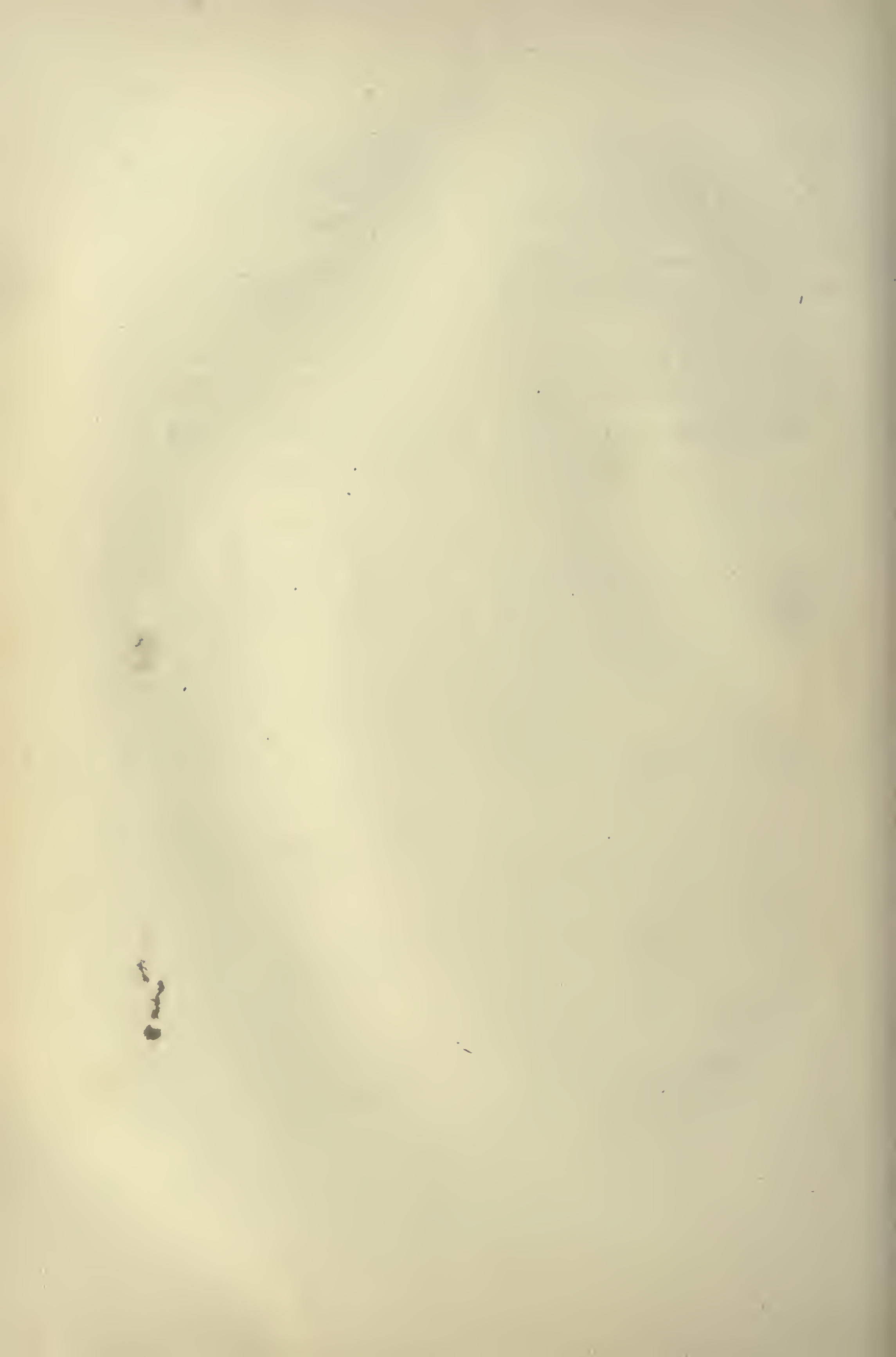

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THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

PENSIONS FOR PUBLIC SCHOOL TEACHERS

BY

CLYDE FURST AND I. L. KANDEL

BULLETIN NUMBER TWELVE

1918

THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

PENSIONS FOR PUBLIC SCHOOL TEACHERS

A REPORT FOR THE COMMITTEE ON SALARIES, PENSIONS AND TENURE, OF THE NATIONAL EDUCATION ASSOCIATION

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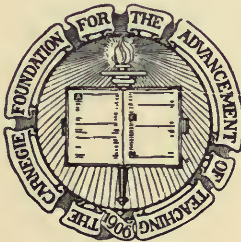

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PREFACE

The National Education Association's Committee on Salaries, Tenure, and Pensions, appointed in 1911, has published, independently or in coöperation with the United States Bureau of Education, reports on "Teachers' Salaries and Cost of Living" (January, 1913), "The Tangible Rewards of Teaching" (Bulletin 16, U. S. Bureau of Education, 1914), "Salaries of Teachers and School Officers" (Bulletin 31, U. S. Bureau of Education, 1915), and "State Pension Systems for Public School Teachers" (Bulletin 14, U. S. Bureau of Education, 1916).

The Committee has also enlisted the coöperation of the Carnegie Foundation for the Advancement of Teaching which, in addition to its granting of pensions to university and college professors, has conducted, for a dozen years, comprehensive studies of pensions for teachers, wherever such systems exist. The President of the Foundation, Dr. Henry S. Pritchett, placed at the disposal of the Committee all of this material, together with the services of the Secretary of the Foundation, Dr. Clyde Furst, and his colleague, Dr. I. L. Kandel.

These gentlemen have met in extensive conference with the Committee and invited representatives from each state at the meetings of the National Education Association and its Department of Superintendence, at Detroit and New York in 1916, and Atlantic City and Pittsburgh in 1918. The reports which they prepared for these meetings, the meeting at Kansas City in 1917, and the meeting of the National Council of Education at New York in 1916, have been printed in the Tenth, Eleventh, and Twelfth Annual Reports of the Carnegie Foundation, which have been sent, without charge, to all teachers who requested them. Addresses on pensions, delivered by Commissioner

Claxton, Dr. Furst, and the chairman of the Committee, before the Association as a whole, at New York in 1916, are printed in the Proceedings of that meeting.

All of the material thus provided by the Foundation is brought together, completed, condensed, and rearranged in the present Bulletin, which the Foundation will send, without charge, to any teacher or school officer who requests it. The Committee desires to record its appreciation of the sympathetic and complete coöperation of the Carnegie Foundation, which has thus rendered a service to every teacher in the country.

There are many reasons for teachers pensions. Economically, the work of an organization is not effective unless there is a satisfactory method of retiring aged or infirm workers, with the consequent freedom from anxiety concerning such risks on the part of the workers. Only a satisfactory pension system can prevent either the dismissal of aged or infirm teachers without resources, or the sacrifice of the best interests of the schools in order to continue the employment of teachers who are no longer capable. Socially, men and women of character and intelligence are willing to undertake difficult public service that is poorly paid; but it is too much to expect them also to sacrifice the prospect of security and dignity in old age and disability. Educationally, there is great need to attract and retain and advance able people in teaching as a permanent career. A good pension system helps to do this.

These facts were first apprehended in the United States a quarter of a century ago. Eight systems of pensions for teachers were founded before 1900, twenty-three in the next decade, and thirty-six since the beginning of 1910. There are now sixty-seven different systems in thirty-four states. The experience of this brief period has been fruitful, so that we are already able to correct errors and proceed with more confidence.

The time should soon come when every state will have made such provision for its teachers.

The organization of the teachers pension systems now in existence is generally satisfactory, there being ordinarily a small special board upon which the teachers and the public are about equally represented. More attention, however, is demanded by the need of having the actual administration under expert direction with the supervision of the state's banking and insurance commissioners.

The greatest difficulty that has been encountered has been the provision of adequate funds. The cost of a pension system for teachers may be borne by the teacher alone, by the public alone, or by the teacher and the public together. If the cost is borne by the teacher alone, he cannot afford, out of a small salary, to set aside enough money to purchase adequate protection, and the public fails to fulfil its obligation. If the cost is borne by the public alone, the pensions are really considered as part of the teacher's compensation, and the majority who withdraw or die before retirement receive no return for their reduced pay. On the other hand, when the cost is borne by the teachers and the public together, the teacher receives appropriate compensation and contractual security and the teacher and the public coöperate in an economic, social, and educational obligation. This principle of coöperation between the teacher and the public is recognized by most of the pension systems that are now in operation.

The application of the principle of coöperation, however, is not so satisfactory. Only a few dozen systems relate the amount of the contribution to the prospective cost of the pensions. Frequently public money is expected from sources like excise, inheritance, license, or transfer receipts; or deductions, fines, or forfeitures from teachers salaries for absence or illness; or from tuitions of non-resident students, which can-

not be accurately estimated in advance and so cannot furnish a reliable basis for pension payments. Equally unsatisfactory is the expectation of paying pensions, when they fall due, from current school or other funds, without any assurance that these funds will be adequate; or from special or general appropriations, without any certainty that such appropriations will be made by future and perhaps unsympathetic administrations. Indeed, it is not uncommon to limit in advance the sums that may be taken from such sources, thus reducing the proportion of the pension that can be paid, or leaving the whole question of payment largely to accident.

The only way in which absolute security can be obtained is for the contribution of the public as well as that of the teacher to be paid annually, credited to the individual teacher, and set aside to accumulate until the time of his retirement. This also is the only economical method. Any system that agrees to pay a pension from current funds after the teacher retires, plans to spend two or three times as much money as would be required if sums were set aside each year to accumulate it during the teacher's period of service. Any other method is parallel to issuing bonds without provision for retiring them.

Pension systems are still too generally organized without estimating their cost. The probable length of life of a teacher in service or after retirement may be estimated from the tables of mortality that have been developed by the life insurance companies, with adjustment for the fact that teachers live longer than other people. Some basis is becoming available for estimates of the likelihood of disability and the probable length of life after retirement because of disability. It is wise to avoid so far as possible basing pensions upon salaries at or near the age of retirement, since no one can predict what any teacher's salary will be thirty, or forty, or fifty years hence.

There is, of course, a definite relation between the benefits and the cost of pensions. No one can secure expensive benefits in return for very small contributions. Only failure awaits the systems which promise retirement after twenty years of service or at the age of fifty; or in which teachers contribute only one-half of one per cent of their salaries; or in which the public contributes only one-half as much as the teachers.

Such errors may easily be corrected by a very simple pension system, based upon conservative tables of mortality, and upon a safe rate of interest, with the provision that the teacher receives the benefit of the accumulation of all of his contributions and those made for him. It is possible to estimate with reasonable definiteness what certain desired benefits will cost, or what benefits can be had for the money available. It is easy to estimate what any annual contribution, beginning at any age, and accumulating at a given percentage, will amount to after any number of years. If then the money is deposited in a central fund, each contributor can be guaranteed a definite annuity for life, since the lives of all are averaged in the standard mortality tables. Thus, an annual contribution of $100 a year, beginning at the age of 25, and accumulated at 4 per cent interest, will amount at 65 to $8882.65, at 70 to $12,587.06. These sums will provide a man with an annuity for life, according to the McClintock Table of Mortality and 3½ per cent interest, of $1086 a year beginning at 65, or of $1681 a year beginning at 70. If, on the other hand, a man wishes to be sure of a life annuity of $1000 a year at 65 or 70, he knows that this will cost $9098.60 or $8642.40 at those ages, and that it would require a contribution of $92 or of $68 a year from the age of 25 to accumulate these sums. The annuities from such a contribution for women, who live longer than men, would be about four-fifths of the sums that have been mentioned.

These figures imply a return of the accumulations of the teacher who

dies before retirement and of those who withdraw from the system for any reason. If it is desired for the sake of family protection, there may be also a return of the balance of the accumulations of the teacher who retires but dies before he has drawn all of his accumulations. This also can be calculated from standard mortality and interest tables. These cost about one-fourth more than a straight annuity. If further protection is desired against disability, this can be similarly provided by the use of the best tables that we have, with the proviso that the rates for those who enter into the system in the future may be modified according to future experience.

A pension system of the kind that has been mentioned is just and fair to all concerned, giving the teacher secure and adequate protection at a reasonable cost to himself and to the public.

Such a system provides for retirement on the basis of age or of disability after any suitable period of service. The age of retirement, which is now usually fixed, can, if desired, be left to the teacher and the administration. If the need is great, retirement may be earlier, in spite of the fact that the smaller accumulations would then make the pension smaller. In general, retirement will, in all probability, be later than at present, because of the larger pension provided by the longer accumulation, and the educational desirability of keeping the able teacher in service as long as possible. Disability can be provided for by using whatever money has been accumulated at the time when retirement becomes unavoidable, perhaps with some supplement from the state until statistical experience makes it possible to provide specifically for disability.

The system suggested provides full protection for both the teacher and those who are dependent upon him, since the form of contribution sets up a contractual relation which provides definite returns in case of

withdrawal or death. Return of contribution in case of resignation is now sometimes arranged, but return in case of dismissal or of death is seldom provided for. Contractual arrangements for the return of contributions under all these circumstances will facilitate the desirable transfer of the teacher from one system to another. Indeed, with the spread of sound plans, pension systems throughout the country will become more and more uniform, so that the experience of each will help all. Continuity of employment during efficiency and good behavior is essential to any sound pension system.

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NATIONAL EDUCATION ASSOCIATION COMMITTEE
ON SALARIES, PENSIONS, AND TENURE.

PENSIONS FOR PUBLIC SCHOOL TEACHERS

THE SOCIAL PHILOSOPHY OF PENSIONS

The History of Pensions

Teachers pension systems are part of a recent world movement for social insurance. Pensions of some kind have been in existence since the Roman era, but until recently they have been granted in a merely haphazard fashion, and have not been regarded as a responsibility to be assumed by society toward its superannuated or disabled servants. They were granted first as rewards to court favorites, or for military or naval services, or for distinguished contributions in the fields of literature, art, or science. As the administrative departments of government developed, employing large numbers of civil servants with a certain security of tenure, they also introduced pensions, partly as a compensation for low salaries paid during active service, partly as a means of attracting desirable workers to the service. This practice spread to other branches and types of public service under local government authorities.

So long as the occupations of industry and commerce were on a small scale, where the employer had only a few employees with whom he could maintain personal relations, cases of superannuation or disability could be taken care of either by the employer or by fellow workers. But with the development of industry on a large scale, whereby hundreds or thousands of employees were congregated in large factories, the conditions under which the employer could exercise a personal interest in the welfare of his employees disappeared, and at the same time the direct appeal to fellow workers in cases of distress lost its intimate force. Out of these circumstances and the social consciousness which began late in the nineteenth century to replace the previous individualistic *laissez-faire* policy, there developed a feeling of social responsibility for those who became incapacitated thru age or disability for further wage-earning. Society has come to demand that an employee who has given the services of a lifetime to an employer be provided for in his old age. Social justice demands that this protection be more definite and dignified than that of common charity.

The Need for Pension Systems

Such considerations alone, however, while they direct attention to the need of some system of pensions, approach the subject only from the point of view of the retiring employee. They base the claim to a pension on gratitude for past services or on social justice. They accept the claim of employees that they have a moral and equitable right to pensions, over and above the remuneration that they have received during active service. An even broader social philosophy requires that the justification for pensions should rest not only on their service in cases of distress, but also on the extent to which they may improve the conditions of service, increase the efficiency of workers, and promote social welfare generally. Any service, whether public or private, is likely to become impaired as a result of the waste and demoralization caused by

the retention of employees who are inefficient because of old age or disability. The retention in service of worn-out employees further tends to clog the avenues of promotion and to discourage younger and abler men. At the same time the absence of provision against the hazards of life creates uncertainty as to the future, perplexity, and worry on the part of the employee, throughout his service.

The justification of a pension system accordingly arises from the interests of both the employer and the employee, the demands of economic efficiency as well as of social justice. The employee who knows that he will be provided for when the time comes for him to retire from his occupation is likely to be contented and free from worry, and will render more effective and more continuous service. A calling or profession will attract and hold men of intelligence, ability, and devotion, only so far as they recognize that the avenue of promotion is open to them and that security is afforded against the risks of life. From these points of view the establishment of a pension system ceases to be merely a matter of sentiment, or a reward for past services, or a compensation for low salaries. It becomes a matter in which the employee, the employer, and society at large are vitally interested. It is because pensions have been approached hitherto without taking into consideration all these factors that a sound theory of the subject has not been developed, and without a sound theory sound practice is impossible.

Non-Contributory Pensions

It is only by defining clearly the interests to be served by a pension system that it is possible to proceed to a consideration of the methods by which such a system is to be maintained and managed. Where pensions have been regarded from the point of view of sentiment or moral right or compensation due for past services, the burden of their maintenance and management has been placed wholly upon the employer. Some confusion also has been caused by the attempt to transplant to conditions prevalent in a democracy institutions that arose in continental Europe under a régime of government supervision and paternalism. But even in Europe recent progress in social insurance is based on the mutual coöperation of governments, employers, and employees. Another tradition that has been detrimental to the development of sound pension theory has been the paternalistic and political practice of the United States government in pensioning its army and navy veterans. But here too, at last, the principle of coöperation has been adopted—in the Federal War Risk Insurance Act of 1917. The advocates of free, straight, or non-contributory pensions, paid by the employer alone, have failed to realize the limitations of such pensions. A free pension not only fails to satisfy the requirements of social philosophy described above, but it is open to many other objections. A system of free pensions, if they are to be adequate for subsistence, can be supported only out of resources that are unlimited. The cost, which depends upon the judgment or generosity of the employer, cannot be calculated

in advance, and while it may be small at first, it rises rapidly within a short period. The appropriations for pensions for war veterans in the United States have reached the sum of more than $185,000,000 annually. The private employer does not as a rule possess the means to meet the demands of such a pension system unless the individual pensions are pitiably small, or unless the right is reserved to prorate the pensions when the burden becomes too great. Such a provision inevitably introduces an element of uncertainty and a lack of confidence in the system on the part of employees, while the employer under this scheme is accumulating a debt without laying aside a reserve to meet the obligation when it falls due. A free pension plan under the control of the employer accordingly furnishes a merely speculative benefit in the remote future, fails to affect the attitude of the employee to his work, and does not produce the continuity of service and the contentment that are among the essential objects of a sound pension scheme. A free pension plan, for example, has never yet prevented strikes, as some employers hoped that it would. The financing of a scheme on this basis necessarily places its control and management in the hands of the employer, a practice that does not avail itself of the advantages of the coöperation and mutual understanding that may be expected from another type of administration. Nor does a free pension system ever secure the moral and educative values of a system that encourages cheerful performance of service, efficiency, thrift, and foresight.

From the point of view of the employees, the free pension plan, altho it has always had a strong appeal as being "something for nothing," is misleading, for it is too often forgotten that any prospective benefit over and above wages is inevitably considered as compensation in lieu of wages. In other words, a free pension system is inevitably contributory, altho in an indirect way. The English civil servants, moreover, argued that the free pension promised them not only kept their salaries low, but that their salaries were reduced by an amount that would have more than paid for the pensions.[1] At the same time, altho a free pension is technically maintained by "constructive contributions," or the amounts by which wages are depressed, the employees have no withdrawal equities if they resign or die before becoming eligible for retirement. Finally, such a plan is contrary to the interests of employees because it confers no contractual right to the pension; it merely holds out a promise of a benefit if there are funds to meet the cost. There is in fact no free pension.

Briefly stated, then, the free pension plan fails to carry out the purposes of a sound pension theory. From the standpoint of the employer it is likely to prove exceedingly costly and does not promote the efficiency and well-being of employees, while to the employees it offers an uncertain and contingent benefit for which they are themselves indirectly paying more than it costs.

[1] See *Report of the Royal Commission on Superannuation in the Civil Service*. London, 1903.

Contributory Pensions

Since so-called free pensions fail to achieve the proper objects of a pension system, some plan is necessary which distributes the burden of the cost equitably, provides for coöperation between employer and employees, can be administered justly, economically, and with due regard to scientific actuarial principles, establishes contractual security for the employees, includes elements of elasticity so that benefits and protection against other risks besides those of old age can be furnished, and, in addition, has moral and educative values. Such a scheme is found in the contributory plan, which involves the joint contributions and the joint administration of employer and employee.

For the employer the contributory plan is considerably cheaper than the free pension system because it replaces an uncertain but continuing and increasing burden by a fixed and limited liability. This is particularly true if the reserve system of meeting the cost is adopted, and a definite sum for pension purposes is set aside annually as a part of the current expense of production, instead of being postponed as a charge upon a future generation which receives no benefit in return. A sound contributory plan, like any other, assumes that the employer owes a humane duty to his worn-out employees, but unlike any other plan it does not depend on his discretion whether he will meet this obligation or not. The employer's contribution becomes a consideration in return for which the employees permit deductions from their salaries. Such a system can be placed on a contractual basis and be more effective than any other system of pensions in securing a readier performance of duty and a higher efficiency among employees, and in attracting and holding men of energy and ability. A pension system based on the contributory plan is not an extravagance for the employer but an economical expenditure, dictated not by feudal or sentimental purposes but by the desire to improve the conditions that determine efficient service as well as by a broad humanity. For the employee the establishment of a pension plan on the contributory principle, while intended primarily as a protection against the risk of unemployment as the result of superannuation or disability, furnishes, further, an opportunity for saving and the development of habits of thrift. Far from affecting the independence of employees adversely, as is sometimes feared, the contributory plan strengthens it by giving the employees a sense of financial security to the extent of the accumulations, however small, standing to their credit. The fact that a contributory plan is based on the financial coöperation of employer and employees implies coöperation in administration and furnishes a starting-point for that broader mutual understanding that is becoming increasingly essential and increasingly common in industrial relations.

Voluntary or Compulsory Systems

The contributory plan not only promotes coöperation between employer and employees, but takes cognizance of the fact that modern industrial and professional organization brings men together in groups working under uniform conditions. The latter fact alone furnishes a basis on which employees may unite for protection against the chief hazards of life and for the promotion of other common interests. Since it is the function of a pension system not only to obviate the hardships and distress that may come with the cessation of income, but also to secure efficiency, it is obvious that an effectual contributory plan must also be compulsory. A voluntary system may fail to provide protection for those who need it most; a discriminating or selective feature may fail to promote that efficiency and whole-hearted coöperation at which the system aims. The success of a pension plan, moreover, depends upon the participation of members in such numbers that the ordinary tables of mortality may be employed until special tables, representing the experience of the system, be worked out. Such representative tables cannot anticipate the experience of a small number of voluntary participants. Nor does such a compulsory plan militate against the development of thrift and foresight. Thrift is a habit, a mental attitude, that grows with the opportunities for its exercise and the experience of its benefits. The argument that it would be wiser to increase wages and leave to the individual the provision of his own protection is valid for those who already possess the habit of thrift, but breaks down for the large majority in not providing help for those who may need it most, including the man who suffers early disability. A contributory plan offers exactly the desirable opportunity for developing this habit, and has the further value of promoting a sense of coöperation and mutual responsibility. It furnishes the possibility of saving and investment that is not open in the ordinary commercial channels for men on small fixed incomes. The compulsory character of a plan does not restrict its flexibility; the accumulations standing to the credit of a contributor can be employed to furnish not merely a pension on his retirement but support in case of his disability or provision for his family in the event of his decease. Nor does such a plan militate against the mobility of the employee; the contributions made by him continue to be his, and accumulate with interest, and if he chooses to withdraw from his present employment, he takes with him these accumulations in which he has secured a vested right. A valid argument may further be made that the employer's contributions should also belong, at least after a certain period of service, to the employees on the ground that technically they are deferred wages. The employee protected by a plan in which he pays his due share need not feel that he is an object of charity nor, for the same reason, can the charge of undue privilege be brought against him, as it well might be under a free or optional pension system.

A pension system that is based upon contributions from employer and employees is therefore the only method by which all of the desired objects can be attained. Such

a system promotes the interests not only of employers and employees but of society in general, in so far as society is interested in the promotion of individual, industrial, and social welfare. The employer secures more efficient service, the employee is protected and freed from anxiety for the future, and society benefits both from the increased efficiency and serenity and from the prevention of the dangers that may arise from discontent.

Pension Financing

The soundness of a pension system, as of any other financial undertaking, depends on ability to meet the obligations incurred. One of the weaknesses of the free pension plan is the difficulty of estimating the obligations, owing to changes in conditions that cannot be predicted, such as the increase in the number of beneficiaries, the advance in salaries, or the lengthening of life, any one of which may impose the strain of a cumulative burden. It is almost impossible to provide for the payment of a free pension in any other way than by annual appropriations. A contributory plan, however, lends itself to a method of financing that is at once secure and inexpensive. Heretofore, altho part of the pension may have been met by accumulations from the contributions of the employees, the remainder has been met usually by annual appropriations by the employer. This method on the part of the employer of meeting obligations as they arise is known as the cash disbursement plan; altho not as expensive as a free pension system, it may cost as much as a third of the expenditure for wages in each year. It may thus become burdensome and lead to some of the abuses associated with free pension systems. To avoid this danger and to equalize the cost for both employer and employee, the reserve plan is now advocated for both: employer and employee making their contributions at the same time, as a rule in equal sums, and thus securing the advantages of accumulations with compound interest and of the existence of a fund to meet obligations as they arise. Under this plan each contributor is in a position to know exactly how much he must contribute, how much he has to his credit in the pension fund, and further is enabled to calculate the benefits that can be purchased from these accumulations. By this method adequate pension benefits can be provided by sums not exceeding five per cent of wages contributed annually by the employer and five per cent by the employee. These sums remain a fixed part of overhead expenses and there is no danger of a sudden strain from the development of unforeseen contingencies, the pension provision being made regularly in advance for each individual employee. The reserve plan is thus not only the least expensive method of financing a pension system, but the only one that meets the test of essential soundness.

Accrued Liabilities

Up to this point the distribution of the cost of maintaining a pension system has been discussed on the assumption that all the employees are young and of approxi-

mately the same age, and that all are just entering on their period of service. As a matter of practice pension funds are seldom established under such satisfactory conditions, but are introduced after an organization has been in existence for some time, with employees of different ages and different periods of service. The estimate that a pension system can be maintained at a cost of ten per cent of the payroll, divided between employer and employees, will be true only in relation to employees who are entering or have been in service but a short time, and who can make a sufficient number of annual contributions to purchase adequate annuities. Under a scheme that is based on actuarial principles, the cost of providing annuities for older employees by annual contributions alone would be prohibitive. In order to restrict such contributions to a maximum that can be borne by the employees, say five per cent of their pay, part of the additional burden must be borne by the employer. In other words, the accrued liabilities or those obligations that are incurred because of the service of older employees prior to the establishment of a pension system, must accordingly be assumed as a continuous charge until the older employees have passed out of the service into retirement. The burden of accrued liabilities is frequently heavy, but it cannot be neglected in a sound pension plan. To neglect it is to invite bankruptcy; this has been the experience of many contributory pension systems,—the absence of special funds to take care of older members has led to the exhaustion of accumulations that should have been kept intact to pension the younger members. The provision of the additional cost for pensioning older employees, or to meet the accrued liabilities, is a necessary corollary of the principle that all contributions, whether by the employer or employees, be separately credited, during the period of accumulation, to the individual by and for whom the contributions were made, and be used as contingencies arise to pay the benefits due to that individual only, and for no other purpose. Under existing conditions in most pension plans all contributions are paid into one fund, from which pensions are paid so long as solvency continues. Bankruptcy threatens every pension system that is on an unsound and insecure foundation, whether thru neglect of the accrued liabilities or of some other of the actuarial principles involved. The ensuing failure to meet obligations and the consequent hardship and distress imposed on those least able to bear them impair confidence in all pension systems. Provided that other conditions of the pension system, such as the amount of the pension, the age of retirement, and the length of service required, are clear and definite, the cost of paying accrued liabilities can be calculated in advance, and can be funded in the same way as the remainder of the obligations.

The Cost of Pensions

The cost of a pension system depends on the nature of the benefits that are granted, the age and sex distribution of the employees, their years of service, the expense of administration, and, as has already been mentioned, the method of financing. The ex-

pense of administration forms but a small percentage of the total annual expenditure, and may best be provided for separately by the employer. The accrued liabilities will vary with the number of older employees in the service. The main cost will depend upon the amount of pension determined as satisfactory. In general a pension ought to be sufficient in amount to furnish adequate subsistence in old age; it cannot and should not be expected to equal the income earned during the period of highest working efficiency. Under a contributory plan the pensions can easily be higher than those paid under a free pension system. The tendency has always been to fix pensions at about one-half of the average salary earned over a period of years. Such a sum may well be taken as an adequate standard, but for actuarial purposes it is more satisfactory to eliminate the guesswork involved in anticipating exactly what the final salaries will be and to determine the pensions generally approximating such a standard, but based definitely on the actual accumulations. In addition to the cost of the pensions, the cost of providing disability allowances is also to be considered. In most progressive industrial communities this is already provided for under the laws governing workmen's compensation, but where these do not apply, the additional cost of protection against disability is not large. The cost of refunds in case of withdrawal by reason of dismissal, resignation, or death, and of the guarantee of a fixed amount of interest on accumulations must also be taken into account. All the benefits here mentioned, provided the pension basis is approximately half salary, can be met by annual contributions equivalent to about ten per cent of the payroll, divided equally between employer and employees. The only additional items, which usually fall largely on the employer, are the cost of administration and of the accrued liabilities in inaugurating the system.

For the employees the annual cost of the pension benefit, or the annual contributions that they will be required to make, will depend not only on the amount of the pension promised, but also on sex, present age, age of retirement, the rate of interest at which the contributions accumulate, and the number and kinds of benefits provided. The cost may vary from two or three per cent of salary for the younger employees to as high as twelve or more per cent for the older employees. The cost of the same pensions for women is higher than for men because women both retire earlier and are longer lived. A system that furnishes benefits in case of disability and withdrawal is more expensive than one without these benefits. A pension that begins at an early age requires higher contributions than one beginning at a later age. The individual who can make more annual contributions before his retirement than another may make each contribution smaller, not merely because of the larger number of contributions but because of the cumulative influence of interest. Altho all of these factors are self-evident, most of them have been neglected in the framing of pension systems heretofore. The association of the term "pension" with the idea of a free or gratuitous payment of money tends to obscure the fact that a sound pension system must necessarily be established on the same principles that underlie the

purchase of annuities or insurance. Even in contributory plans, however, the contributions have been determined without reference to these fundamental factors, and some pension systems have required the same annual contributions — called a "flat rate" — from all members, irrespective of their salaries, age, or sex, or promised pension. Such uniform contributions not only fail to ensure financial security, but they are inequitable to the employee. Under such a plan the younger employee, having longer to wait before retirement, is likely to pay considerably more than is necessary to provide his own pension, while the older employee will pay considerably less, the younger men virtually paying part of the pensions of the older. Again, since the older employee probably enjoys a higher salary, the burden imposed by the flat rate is lighter for the better paid than for the more poorly paid participant, thus introducing an inevitable element of discontent. A sound system demands that the annual contributions be calculated on the basis of all the factors referred to. The heavy burden that might fall on the older employees may be avoided either by making membership in the pension fund optional for them or by limiting their contributions to some fixed proportion of salary, the amount of accrued liability beyond this being carried by the employer.

Age of Retirement

The age at which retirement from service is permitted plays an important part in determining the amount both of the pension and of the annual contribution. It is impossible to determine dogmatically the age at which retirement should be allowed; it will undoubtedly differ for the two sexes, and will vary according to occupation and perhaps according to locality. In the sedentary and professional callings a man may be at his best at the age of sixty, while in those occupations that require physical strength and demand constant exposure to risks a man may cease to be fit at that age. It is true that the followers of every vocation claim special privileges because of peculiar hardships associated with it, but in general it may be said that sixty is a generous age at which voluntary retirement may be permitted in any pension system. Under the mistaken conception that a pension is purely a reward for services rendered, and as a result of the fallacious plea of special occupational strain, provision has been made in many systems for retirement after a certain period of service without any age restriction. Retirement on the ground of service alone, however, usually means retirement at an early age; some systems do not exclude the possibility of retirement after twenty years of service, thus enabling employees to retire at the age of forty-five or fifty, and to enjoy their pensions for half of their adult lives. Such early retirement is economically and socially unjustifiable. It is unfair that the followers of some occupations should enjoy in the prime of life a privilege meant as a protection for old age, it deprives the occupation concerned of its most efficient service, and it is extremely expensive, for obviously a man who retires at the age of

fifty-five may be expected normally to enjoy his pension for a longer period than one retiring at sixty or sixty-five. Further, the granting of early pensions is socially detrimental since it is open to abuse. Such a system emphasizes the idea that a pension is a reward for services rendered, instead of a measure intended as a provision for old age and for the promotion of efficient service. Where this idea prevails it is not unusual to find pensioners enjoying a retiring allowance from one employer while actively engaged in occupation for another. The man who at fifty feels that he has discharged all obligations for which the pension is a reward, feels also that he cannot live on the reduced income represented by the pension, and that he is justified in adding to it in any way open to him. This is merely proof of the fact that every normal man in the enjoyment of health prefers to remain at his work as long as his efficiency continues. It is only the young employee that dreads the prospect of continuing in his occupation for thirty or forty years, a dread that is replaced by a desire to continue as the opportunity of retiring approaches. A minimum requirement of service is, of course, necessary, if only to make possible the accumulation of sufficient contributions toward a reasonable pension. But it is difficult to see why any employee with good health and unimpaired faculties should be retired, except on the basis of age in addition to a service requirement. A minimum age limit may be established, at which an employee may retire voluntarily or be retired if his efficiency is impaired. There is, however, no reason for placing difficulties in the way of continuing in service for some years longer up to a compulsory age limit, which will vary in different occupations. The postponement of the age of retirement as long as is compatible with occupational efficiency implies a reduction in the burden of annual contributions, and if voluntarily carried beyond the minimum age of retirement means a pension which rapidly increases in size as the result of additional accumulations.

Pension Benefits

Up to the present time the payment of pensions has seldom taken any other form than a monthly allowance to the pensioner as long as he lives. Since the aim of recent pension philosophy is to introduce as much flexibility as possible, there is a tendency to provide different methods for paying out the accumulations standing to the credit of a pensioner at the time of his retirement. These options may provide benefits for the pensioner himself alone, or for the pensioner and his widow after his death, or either of these benefits with a return to his estate of any sums remaining to his credit after the payment of these benefits. The accumulations virtually belong to the employee: the chief object of their existence is accomplished when the pensioner makes satisfactory provision for his own maintenance at the time of his retirement; beyond that he may have an opportunity of making such further provision for his dependents as may seem to him desirable.

The essential purposes of a pension system are met if it makes adequate provi-

sion for old age, and if it succeeds in promoting efficient service. These purposes can be carried out only when the coöperation of employer and employees is enlisted in sharing the burden with justice and fairness to each side, and as economically as is consistent with the objects proposed. In addition to the provision of protection against the risk that may come from loss of wage-earning efficiency due to old age, the interests of efficient service require also protection against loss of wage-earning capacity as a result of disability. While cases of disability are not frequent, they are accompanied when they do occur with considerable distress. In many occupations they are already covered by workmen's compensation laws. Where such provision is absent, it may well be made a part of a pension system. The chief questions underlying the granting of disability allowances are whether in the interests of efficiency the protection should be furnished to employees from the time of their entrance into service or only after a few years of service, and how the financial cost of such allowances should be met. The period of service that should be required as a qualification for a disability pension will depend probably on the number of years that it takes an employee to become thoroughly efficient in his occupation and to acquire permanency of tenure; the period will accordingly vary with the occupations. In order to be adequate, the amount of a disability allowance needs, like the old age pension, to approximate half the salary at the time of retirement. Part and perhaps all of the cost of such allowances can be met by the accumulated contributions of the employer and employee; the remainder, like the accrued liabilities, may be paid by the employer, at least until statistical knowledge of disability accumulates sufficiently to make possible the calculation of definite contributions to provide for such contingencies. This will not prove such a burden as it appears at first sight, partly because the cases of retirement on the basis of disability are likely to be few, partly because the contributions paid by the employer on account of employees who leave before completing a minimum period of service may well be retained and accumulated for the payment of disability grants. In every case, of course, the grants would be made only for permanent disability, and would be subject to periodical review by a medical board.

By the addition to the main benefits of an old age pension of such provisions for disability, options at retirement, and returns of contributions, a pension system, managed by a board representing both the employer and employees, and acting on actuarial advice, should be successful in promoting the objects and interests that are dictated by a sound social philosophy and are warranted by the recent experience of both private and public services.

Reports and Valuations

Such success, however, will depend ultimately upon the possession of definite information concerning the obligations undertaken. This information can be furnished only

from accurately kept and detailed records and carefully constructed reports, presenting a clear statement of assets and liabilities. Pension reports should indicate the actual and expected resources, the rate of interest, the nature of investments, the rate of mortality as compared with accepted tables, as well as the cost of benefits of different kinds that may be expected to accrue to those in service at the time that the report is issued. More especially are clearness and detail essential in a newly created pension system until the vital statistics of the particular service affected are thoroughly established. Many questions around which the foundation of a sound pension system centres are involved here—longevity, the incidence of disability, the rate of withdrawal, and the rate of mortality. Accurate records and careful reports may serve not merely as a method of checking up the reliability and adequacy of a pension system, but as a measure for controlling and perhaps ultimately reducing the cost.

The construction or valuation of a pension system requires complicated calculation. It is necessary to have complete information concerning the age, sex, and length of service of all who are included in the system; information for as many years as possible concerning their salaries, and the experience of the system with regard to withdrawals, disability, and death. The tables of probable mortality and expectation of life which have been derived from the experience of insurance and annuity associations must then be used to estimate the proportion of those in the service who will probably die before they reach the age of retirement. Others will withdraw from the service or be disabled before that time. From such tables, similarly, may be derived the average expectation of life of the group which remains in service until retirement, and the average number of years of their receipt of retiring allowances. This multiplied by the amount of the average pension, taking interest into consideration, gives the prospective financial load for the group. The age of retirement is fixed by the regulations of the pension system; the amount of the pension may be related to present or prospective salaries. To ensure the existence of funds to pay the pensions when they are due requires the fixing and continuance of appropriate contributions, a conservative rate of interest, and adjustments for the return of contributions for those who withdraw or die early. Different provisions for men and women and special provisions for widows necessitate further adjustments, and all of the factors that have been mentioned must be separately considered for those who have already retired, those who are now in the service, and those who will enter the service hereafter. Even so simple a statement of some of the mathematical problems of pension systems indicates that they can be adequately solved only by persons of special training and experience,—that is, by professional actuaries. The further fact that all the elements that have been mentioned are constantly changing, indicates the necessity of almost continuous expert attention. It is especially necessary to establish mortality and other tables representing the experience of the system itself, as in some respects the experience of each system is peculiar.

THE FUNDAMENTAL PRINCIPLES OF PENSIONS

The following fundamental principles of a sound pension system for teachers were recommended to the Carnegie Foundation on April 27, 1917, by a commission comprising representatives of the Association of American Universities, the National Association of State Universities, the Association of American Colleges, the American Association of University Professors, and the Carnegie Foundation. These principles were approved by the Trustees of the Carnegie Foundation on May 18, 1917, and carried out in a reorganization of the pension system of the Foundation in 1918.

I

1. The function of a pension system is to secure to the individual who participates in it protection against the risk of dependence due to old age or to disability.
2. The obligation to secure this protection for himself and for his family rests first upon the individual. This is one of the primary obligations of the existing social order. Society has done its best for the individual when it provides the machinery by which he may obtain this protection at a cost within his reasonable ability to pay.
3. Men either on salary or on wages are, in the economic sense, employees. The employer, whether a government, a corporation, or an individual, has a direct financial interest in the establishment of some pension system which shall enable old or disabled employees to retire under satisfactory conditions. In addition, society demands to-day that the employer assume some part in the moral and social betterment of his employees. The obligation of the employer to coöperate in sustaining a pension system is primarily a financial one, and in the second place, a moral one.
4. A pension system designed for any group of industrial or vocational workers should rest upon the coöperation of employee and employer.
5. Teachers pensions should be stipendiary in character, amounting to a fair proportion of the active pay.

II

1. In actuarial terms a pension is a deferred annuity upon the life of one or more individuals, payable upon the fulfilment of certain conditions.
2. In order that an individual participating in a pension system may be assured of his annuity when due, one condition is indispensable: There must be set aside, year by year, the reserve necessary, with its accumulated interest, to provide the annuity at the age agreed upon. On no other conditions can the participator obtain a satisfactory contract. The man of thirty who participates in a pension plan under which he expects an annuity thirty-five or forty years in the future will take some risk of disappointment in accepting any arrangement less secure than a contractual one.
3. A pension system conducted upon the actuarial basis of setting aside, year by year, the necessary reserve is the only pension system whose cost can be accurately estimated in advance.
4. A method by which a pension is paid for in advance in annual or monthly instalments is the most practical plan which can be devised for purchasing a deferred annuity, provided that the contributions begin early in the employee's career, and provided also that the contributions paid in year by year receive the benefit of the current interest for safe investments.
5. As a matter of practical administration, a pension system should apply to a group whose members live under comparable financial and economic conditions. To attain its full purpose, participation in the pension system to the extent of an agreed minimum should form a condition of entering the service or employment the members of which are coöperating in the pension system.

THE PRESENT STATUS OF TEACHERS PENSIONS

European Systems

Teachers pensions are now provided almost universally in European countries. This has followed from the fact that the profession of teaching has long been under the more or less direct control of a central administration. In these countries teaching is adopted as a life career, entrance to which depends upon a period of professional training and certification by the state. Once a teacher enters upon his work he enjoys security of tenure and a moderate and progressive income; pensions and disability provisions have been added, as they have in other branches of public service, to attract able candidates to the profession, to improve efficiency, and to afford the teacher protection in case of retirement from service owing to age or disability. Teachers pensions are accordingly found in Belgium, France, Great Britain and Ireland, Italy, Greece, and Russia; in Holland, Denmark, and Sweden; as well as in all the states of the German Empire and Austria-Hungary; and, outside of Europe, in New Zealand and Japan, South America and South Africa. In the large majority of these systems the teachers coöperate with the state in the provision of pensions; in Italy the state makes no contribution; while in Japan and in all but four of the states of Germany free or non-contributory pension systems prevail. Of the free pensions in Germany, one of the oldest and best known of the elementary school teachers has said:[1] "The straight pensions push the salary question into the background considerably, since an official with the right to a pension and protection for his dependents can hardly compare his income with those in other callings and cannot easily base a claim for salary on such comparisons. In practice the result is that in the regulation of salaries the benefits of a pension privilege are estimated too high." In the contributory systems the annual contributions vary from three to ten per cent of salary, the periods of service required from twenty-five to forty years, the age of retirement from fifty-five to seventy, and the amounts of pensions from one-sixtieth of the average salary over a period of years for each year of service to three-fourths of final salary. In England and Ireland the pension consists of an annuity purchased with the teachers accumulated contributions and an additional sum paid by the state; both systems are subject to periodical actuarial investigations, with necessary changes both in contributions and annuities. The pensions in England and Ireland are small but secure.

[1] J. Tews, in Rein, *Encyklopädisches Handbuch der Pädagogik*, vol. vi, p. 618. 1907.

Teachers Pensions in Foreign Countries

Country	Source of Funds		Retiring Allowances		
	State	Teachers	Basis		Amount
			Service	Age	
Belgium	Appropriations from current revenues	From 3% to 5% of salary and additions on increase of salary	30	55	One-fiftieth of average salary for last five years of service for each year of service up to a maximum of two-thirds of the average salary
France	Appropriations from current revenues	5% of salary and additions on increase of salary	25	55	One-half of the average of the six highest salaries and one-fiftieth of the average for each year after 25 years of service up to a maximum of three-fourths of the average salary
England	Appropriations according to estimates	$17.49 men; $11.67 women, annually		65	Annuity purchased with accumulated contributions and $4.86 from state for each year of service Average, men $195.50; women $142.85
Prussia	Appropriations from current revenues		10	65	From fifteen to forty-five sixtieths of final salary according to years of service Average, men $468; women $271
Austria	Appropriations	3.8% of salary	10		40% of final salary after 10 years of service and 2% of final salary for each year of service thereafter up to a maximum of full salary after 40 years of service Minimum final allowance $160
Italy		Premiums according to age		55	Annuity purchased with accumulated contributions
New Zealand	Subsidy	5% to 10% of salary according to age at entrance	40 men; 30 women	65 men; 55 women	One-sixtieth of average salary during last 3 years of service for each year of service Average, about $250
Transvaal	Annual sum equal to teachers contributions	3% of salary		55	Total contributions with 4% interest returned in a lump sum
Japan	Appropriations from current revenues		15–40	60	One-fourth of final salary plus one-two-hundred-fortieth of final salary for each year of service after 15 years and up to 40 years Average, about $46

Systems in the United States

Pension systems for teachers in the United States have but a brief history; the first system for city school teachers was established in Chicago in 1893, followed three years later, in 1896, by the organization in New Jersey of a mutual benefit plan for disabled teachers in that state. The majority of existing systems have been established during the past ten years. There are at the present time twenty-one state pension systems, while four other states have general laws permitting local bodies to set up plans. Of the twenty-one state systems fifteen[1] have adopted the contributory plan and six[2] the non-contributory scheme. Of the permissive systems three[3] are contributory and one[4] non-contributory. In a few of the states the larger cities are exempt from the

[1] California, Connecticut, Illinois, Indiana, Massachusetts, Michigan, Minnesota, Montana, Nevada, New York, North Dakota, Pennsylvania, Vermont, Virginia, and Wisconsin.

[2] Arizona, Maine, Maryland, New Hampshire, New Jersey, and Rhode Island.

[3] Kentucky, Ohio, and Utah. [4] Colorado.

operations of the state system. There are accordingly, in addition to the state systems, sixty-four city and county systems, of which only three are on a non-contributory basis. The details of all of these systems are given in the tabular statement and summary on pages 56 to 72. The eighty-nine systems here referred to are covered by sixty-seven separate provisions given in the tables and summary. The distribution of the state systems is shown by the map on page 73. The following discussion is restricted to them. The prevailing tendency to establish state rather than local systems is most fortunate. A sovereign state has advantages of freedom and security in caring for its employees that are unapproachable by any local or private establishment.

Lack of Scientific Basis

Beyond their classification as contributory or non-contributory plans, the various systems show uniformity in only one respect. With the exception of the systems of Massachusetts, Connecticut, and Erie, Pennsylvania, which fall into one group, and Pennsylvania and New York City, which form another, no serious attempts seem to have been made to look ahead and to ensure security for the future by the employment of a sound and scientific basis. Whether these funds were inaugurated in a merely sentimental mood, or thru imitation, or in honest ignorance, or in the attempt to start some system, however faulty, with the hope of improving it later, the result has been the same,—after the needs of older teachers have been satisfied, most of these funds have found themselves facing bankruptcy. At last, however, the threat of insolvency, involving disappointment to many at a time when help is most needed, together with the reports of commissions that have investigated the condition of such funds as those of New York City[1] and the State of Illinois,[2] has directed the attention of teachers to a consideration of some of the more fundamental principles involved. It is gradually but surely being realized by those who are interested in pensions that there is no mystery underlying these principles, and above all that financial obligations cannot be carried out for any length of time unless funds are in existence to meet them, and that so far as teachers and their employers are concerned, the chief question to be studied is how to provide these funds in the most inexpensive and economical method consistent with justice to the teachers, fairness to the public, and the promotion of efficiency in education.

The haphazard development of the pension systems now in existence is well illustrated by the large number of variations that are found in such fundamental matters as management, maintenance, amount of contributions annually paid by teachers, amount of pension, age and years of service required as qualifications for retirement, and the equity of teachers in their contributions in case of withdrawal from service on account of resignation, dismissal, or death.

[1] New York City Pension Commission: *Report on the Teachers Retirement Fund of the City of New York*, 1915.
[2] Illinois Pension Laws Commission: *Report*, 1916.

Administration

The practice in the management of pension funds appears to vary somewhat with the character of the system. In general it seems to be the aim of the contributory systems to give the teachers representation and of the non-contributory systems to retain control in the hands of the state. In three of the non-contributory systems the state board of education is charged with the management of pensions, while in three others this function is entrusted to the state superintendent of education. Only in California, Nevada, and Virginia, of the contributory systems, does the state board of education administer the pensions, while the remaining systems have retirement boards consisting of state officials *ex-officio* and teachers either appointed or elected. The representative boards have from three to seven members, and generally include the state superintendent of public instruction; the *ex-officio* officers are either the state treasurer,[1] the state auditor,[2] the state attorney-general,[3] the superintendent of insurance,[4] or the state bank commissioner.[4] The teachers representatives, together with the state superintendent of public instruction, usually constitute a majority of the members of the boards. The constitution of such a board is important since it needs to represent the social sense of the community as well as actuarial science.

Amount of Pensions

In the majority of the state systems the amount of the pensions to be paid is not determined by the age at which retirement takes place, sex, the rate of interest, or the amount of money available. The most frequent basis that is used is the average salary received for a few years before retirement. In one system the pension consists of a sum equal to one-half of the largest salary received during service; in one it is equal to sixty per cent and in five to fifty per cent of the average salary received during the last five years of service. In eight systems the pension is the same for all teachers, and in three is a fixed amount for each year of service, regardless in both cases of the average salary prevailing in the state. The amount of an annuity can be determined on an actuarial basis only by the amount of money available, the age and sex of the recipient, the rate of interest, and the table of mortality. Such an actuarial foundation is provided by only three state systems, Connecticut, Massachusetts, and Pennsylvania, and only these systems offer options by means of which a teacher may provide some protection for his dependents.

Service and Age Retirement

From an analysis of the state pension systems that are here being considered the inference may be drawn that pensions to teachers are granted generally as rewards for

[1] Illinois, Montana, North Dakota, Pennsylvania, Vermont, and Wisconsin. [2] Indiana and Minnesota.
[3] Indiana and Montana. [4] Connecticut and Massachusetts.

service. Thirteen out of twenty-five state systems allow teachers to retire on the basis of service alone, and the requirement varies from twenty years in two systems[1] to thirty-five years in three,[2] while five[3] permit retirement after twenty-five years and three[4] after thirty years. Assuming that the majority of teachers begin their service at the age of twenty-five, they could under these provisions retire at as early an age as forty-five, and none need remain in service after sixty. Retirement on the basis of service alone is an expensive luxury. It requires the annual contribution beginning at twenty-five of one-third of a man's salary to provide a half-pay pension after twenty years of service; it takes twenty per cent to provide such a pension after twenty-five years, and fifteen per cent after thirty years of service. Neither teachers nor the public appear to be willing to pay such a price. This, however, is no misfortune, for such retirement encourages the withdrawal from service of experienced teachers at the time when they are doing their best work and injures the cause of pensions in general by the creation of a privileged class who may be at leisure for a third or a half of their adult lives. A few systems, accordingly, require both an age and a service qualification for retirement; one system[5] permits it at the age of fifty, two[6] at sixty; two[7] require teachers to have reached the age of sixty and to have served thirty years, while only one[8] requires the same age and thirty-five years of service. Two systems[9] permit women to retire a few years earlier than men. Only two systems[10] permit retirement at a given age, irrespective of previous service. In most cases where an age basis is provided retirement is voluntary at the stated age or later; in three systems[11] seventy has been fixed as the age of compulsory retirement.

Disability Allowances

Disability allowances are usually a proportion of the amount paid for retirement on account of age,—an unsatisfactory basis, generally yielding less than subsistence. There is, however, more justification for guesswork in the case of disability pensions, since so little is known about the incidence of sickness among teachers. No justification exists for the general lack of provision for the prevention of abuse of disability privileges. Medical examinations are required in every case before disability pensions are granted, but only the most recently established systems, like that of Pennsylvania, require periodical medical examinations and the return to service of those who are shown to have recovered from their disability. The whole subject of the kind of disability to which teachers are peculiarly exposed needs further study, before a completely intelligent administration of these benefits can be developed. There is

[1] Minnesota and New Jersey. [2] Connecticut, Indiana, and Rhode Island.
[3] Arizona, Montana, New York, North Dakota, and Wisconsin. [4] California, Michigan, and Nevada.
[5] Illinois. [6] Maine and Maryland.
[7] Massachusetts and Vermont. [8] New Hampshire (in the case of men). [9] New Hampshire and Virginia.
[10] Connecticut (as an alternative to the thirty-five years of service alone) and Pennsylvania.
[11] Connecticut, Massachusetts, and Pennsylvania.

very little guidance concerning the subject to be drawn from actual practice, either as to the amount of the pension that should be granted or the years of service that should be required. There is no reason, for example, why an allowance for genuine permanent disability should be much less than an old age pension, nor why one [1] system should require ten years of service as a qualification, while nine [2] others require fifteen years, one [3] eighteen, one [4] twenty-five, and one [5] thirty-five, while one [6] other system grants a disability pension only to those incapacitated after the age of fifty-five.

Financing

In the non-contributory systems of Arizona, Maine, Maryland, New Hampshire, New Jersey, and Rhode Island, the pensions are paid entirely out of state appropriations; in the cases of Maine and Maryland, however, the amount of the annual appropriation is limited to a fixed maximum, with the consequent prorating of pensions that are already in force in those years when the total cost is likely to exceed the maximum. In the contributory systems the share of the state is paid sometimes out of regular appropriations, as in Connecticut, Massachusetts, New York, North Dakota, Pennsylvania, Vermont, and Virginia, the annual appropriation being limited to $10,000 in Vermont and to $5000 in Virginia; sometimes out of the proceeds of a property tax, as in Illinois and Minnesota, or out of the tax on inheritance and transfers of property, as in California; sometimes out of the school fund, as in Indiana. In Wisconsin the state, by recent legislation (1917), undertakes only to make up deficits as they arise. In most of the regulations provision is made for supplementing the resources provided by the public with such miscellaneous support as may come from donations, gifts, legacies, and bequests. Such sources, however, cannot be depended upon for any adequate and regular supply of funds. The expenses of administration in most cases are paid out of the general fund, to that extent reducing the amount available for pensions, even tho the sum required for expenses forms but a minor part of the total cost of maintaining a pension system. A few systems, including Connecticut, Massachusetts, Montana, New Jersey, and Pennsylvania, make separate appropriations for administration, thus leaving the general fund intact to meet the purpose for which it exists. It is obvious that no state can look forward with serenity to the annual appropriation of such large, indefinite, and increasing sums; that no definitely limited amount can meet the needs of an enlarging service; that the proceeds of property and inheritance taxes have no relation to the needs of a pension system; and that irregular sources like gifts, deductions, and so on, cannot be depended upon to make up deficits. Pension systems have little or no security under such methods of providing funds.

[1] Pennsylvania.

[2] California, Illinois, Massachusetts, Michigan, Minnesota, Montana, Nevada, New York, and North Dakota.

[3] Wisconsin. [4] Indiana. [5] New Jersey. [6] Connecticut.

The uncertainty that underlies most pension funds is further indicated by the variation in the amount of annual contribution that is expected from the teachers in the contributory systems. In ordinary commercial insurance the premium rates for similar benefits show only slight differences throughout the country. The only uniformity in the contributory feature of pension systems is an evident desire to make the teachers contributions as low as possible, regardless of whether or not they are adequate to furnish the promised benefits. In fact, a very common formula[1] is that a teacher before becoming eligible for retirement shall have contributed a total sum equal to or even less than the amount of the prospective pension for one year only; the obligations beyond being apparently assumed by the general fund, the provision for which is equally inadequate. Recent pension investigations have emphasized the importance of the ordinary business method of keeping an individual account for each teacher in order that he may be sure at least that his own contributions are allowed to accumulate to provide a pension benefit for him alone. It too frequently happens under the prevailing practice that the money contributed by the younger teachers is used to pay the pensions of the older. In four states[2] the amount of the annual contribution is made the same for all teachers, irrespective of age or salary; in three states[3] the contributions consist of flat rates within three or four groups of teachers, graded according to years of service; in the remaining systems the teachers contribute a percentage of their salaries, varying from one-half of one per cent to seven per cent in each year. With the exception of Connecticut, Massachusetts, and Pennsylvania, no state system definitely relates the contributions to age, years of service, sex, rate of interest, or the amount of pension to be paid, altho there is sometimes a rough estimate that a particular annual contribution will lead toward a pension that will be, say, half of the final salary before retirement,—which salary cannot, of course, be accurately estimated so long in advance. Teachers pension systems are thus still regarded as mutual associations, in which benefits are paid out of a general fund so long as the money lasts; or as charitable relief, the chief burden for which is placed upon the public treasury, unless this is so protected that only limited appropriations can be provided each year. The one conscious effort that is frequently made for security is inequitable; this is the merging of the teachers contributions, as soon as paid, into the general fund for those who remain until retirement, and not regarding them as the teacher's own savings, to which he is entitled if he withdraws from service. In six states there are no refunds whatever. Most systems provide for the return of only a part of the contributions, without interest, in the event of resignation, dismissal, or death. In three states all of the contributions are returned without interest; but only three state systems[4] refund the whole of the teachers contributions with interest at a fixed rate.

[1] California, Illinois, Indiana, Michigan, Minnesota, Nevada, New Jersey, New York, North Dakota, and Wisconsin.
[2] California, Montana, Nevada, and Ohio. [3] Illinois, Indiana, and Minnesota.
[4] Connecticut (with actual interest earned), Massachusetts (with interest at three per cent), and Pennsylvania (with interest at four per cent).

Financial Unsoundness

The inevitable consequence of the development of pension practice in this country until recently, without reference either to the social philosophy that should be its justification or the actuarial principles that should be its foundation, has been insolvency, either actual or threatened. It is difficult to persuade teachers of the insecurity of systems of which they are members, for, so long as there are funds with which to meet current obligations, they regard their systems as sound. Fortunately, during the past three years two exhaustive studies of pensions have been made, one in New York City and one in the State of Illinois, which prove convincingly that a pension system is neither sound nor secure unless, like an insurance company, it is in a position to meet its obligations to all its participants when they become eligible for the promised benefits. Whether or not a pension system shall be established is a matter of social philosophy; how it shall be organized is a matter for the actuary. This expert, however, is rarely consulted until bankruptcy is imminent. The importance of such expert advice has been recognized in the recently established pension plans of Connecticut, Massachusetts, New York City, and Pennsylvania, in which provision is made for keeping essential and accurate records, issuing annual reports, and making periodical actuarial investigations. Attention has been focused on the whole subject by the consideration given to the theory in the reports of New York City and Illinois, and by the practical incorporation of new principles in the important Massachusetts Teachers Retirement System, which is discussed later.

The Report of the New York City Commission

The New York City Pension Commission, which was appointed in 1913, issued its report on the New York Teachers Retirement Fund in 1915.[1] The report contained a descriptive account, a critical study, and suggestions for a reorganization of the fund on sounder actuarial principles, and was accompanied by detailed actuarial calculations, based on a careful investigation of the vital statistics of the teaching profession. According to this report the old plan, which followed the prevailing practices just described, failed to promote the efficiency of the service and was conducted without any regard for or knowledge of the cost. A continuation of the scheme would have required annual appropriations that might amount to 20 per cent of the payroll. The fund's actuarial liabilities amounted to $69,809,760, with prospective assets of only $15,066,440 to meet these obligations, leaving a deficiency of $54,743,320 or about twice the amount of the annual payroll. The failure of such a system was inevitable from the start; it was hastened by lax administration. The fund was used, for example, to get rid of undesirable teachers; teachers were retired before they had completed the required period of service; disability allowances were granted on the sole evidence of the applicant's own physician; no distinction was made in the cost of

[1] New York City Pension Commission: *Report on the Teachers Retirement Fund of the City of New York*, 1915.

retiring men and women; age was not considered as a basis for retirement; teaching experience outside the city was counted toward service retirement, altho no contributions were paid for this period; and too much reliance was placed on fluctuating revenues from miscellaneous sources.

The Commission concluded that the chief problem in establishing a pension system is financial, and that the cost cannot be calculated without a knowledge of the facts involved and rigid adherence to principles accepted from the start. It recommended that retirement should be on the basis of age as well as of service, that provision should be made for retirement on the ground of disability only when this was adequately attested by physicians, employed by the pensioning authority, and investigated periodically, that definite rules should be laid down to govern cases of service outside the system covered by the pension, and that teachers contributions be returned with interest in case of resignation, dismissal, or death. Each additional benefit, however, would mean an increase in the amount of the annual contribution.

In the opinion of the Commission the financial problem of pensions is complicated by a number of factors. When a new plan is substituted for one that has failed, three factors must be taken into consideration. The first is the problem of obligations already assumed or soon to be assumed; the second is constituted by the body of teachers in active service; and the third by teachers who will enter the service in the future. It was suggested in the report that the city, after careful revision of the list of pensions already being paid, assume its obligations, if possible; that in the case of the active teaching force, the city assume all the obligations above the amount raised by teachers contributions, up to 8 per cent of their salaries, on a new scale graduated according to age and length of service. It was estimated that the present value of the city's obligations for these two classes was $27,899,430, which the city could liquidate on the cash disbursement plan by sixty annual appropriations of $1,233,220 each. The teachers appointed in the future would enter on the basis of an actuarially adjusted scheme.

The chief problem for the city, which must consider provisions not only for teachers but also for employees in other branches of its service, was how to meet the cost, which would undoubtedly be great. Two methods might be employed. The city might make annual appropriations to meet its obligations as they fall due each year; that is, adopt the "cash disbursement" plan. Or, having calculated the future cost, it might set aside during the active service of employees amounts which with interest accumulations would be adequate to pay the pensions in the future; this is the "reserve" plan. The first plan is that most commonly adopted; it is simple and attractive because in the beginning the demands to be met are small, only to increase with amazing rapidity. The bankruptcy of most current schemes, apart from their inadequate planning, is due largely to the phenomenal increase of the demands. The reserve plan, on the other hand, takes into consideration the factor of interest, which accumulates rapidly. It is efficient not merely because it is cheaper, but because each contributor can feel when

he pays his own assessment that the city is matching it with its contribution, and that when the time comes for his retirement these two sums will have accumulated a fund to pay his expected allowance. Under the reserve plan the expenditure for pensions is reduced to little more than one-half of the expenditure under the cash disbursement plan, the amount to be set aside is a constant factor for both city and employees, and each generation taxes itself to pay its own pensions; under the cash disbursement plan the city's share is changing and constantly increasing, and the burden is shifted from one generation to the next. A plan embodying the recommendations of the Commission and its experts, but making certain concessions to the demands of the teaching body, was drawn and passed in 1917.

The new system is to be administered by a board of seven members, some *ex-officio*, some appointed, and some elected by the teachers. The city will bear the cost of administration, of the pensions due under the old retirement plan, and of the accrued liabilities, by annual appropriation on the cash disbursement plan. To meet the cost of future pensions the contributions of the city will be made annually to accumulate a reserve fund, and the teachers will contribute such sums as will yield, together with the city's share, pensions equivalent to half of their average salaries during ten years preceding retirement, which will be permitted either at the age of sixty-five or after thirty-five years of service. At the time of retirement the teacher may choose an annuity for himself alone, or provision for both himself and his dependents, or other forms of benefit, approved by the board. Disability allowances are to be granted after ten years of service, subject to periodical examinations by physicians of the Retirement Board, and will be equal to twenty per cent of the average salary from the city together with an annuity purchased by the teacher's own accumulations. Their accumulated contributions with compound interest at four per cent will be returned to teachers withdrawing from service for any reason, and in case of death additional benefits of fifty per cent of salary in the year preceding death will be paid to dependents. Actuarial investigations are to be made in 1919, 1922, and every five years thereafter. The system is under the general supervision of the State Department of Insurance.

The Report of the Illinois Commission

The conclusions of the New York City Pension Commission were fully corroborated in the report of the Illinois Pension Laws Commission [1] which was issued in 1916. This Commission was appointed by the governor of the state in 1916 to investigate the operation of all existing pension laws in the state, to gather information on the present and probable future cost of these funds, and to enquire into the operation of pension laws in other states and countries. In a survey of the history of pensions in Illinois the report brings out significantly the fact that they are characterized by an absence of foresight, ignorance of the probable future cost of the obligations under-

[1] Illinois Pension Laws Commission: *Report*, 1916.

taken, and complete absence of uniformity of policy in such matters as contributions, age and service qualifications for retirement, refunds in cases of withdrawal, and the amount of pensions. The Commission concluded that the existing pension funds covering policemen, firemen, and teachers were so unsound that it would be impossible to make any patchwork attempts at improvement, and that the only reasonable procedure would be entirely new legislation, based on definite principles, which the Commission proceeded to consider.

The Commission accepted the principle that a pension system for public employees is essential in the interests of public service in order that continuity of competent service may be secured, that means may be at hand to relieve the service of those who have become incompetent thru superannuation, and that protection may be afforded to employees and their families in old age. A sound pension system encourages thrift, and is, for the man of small resources, the most advantageous form of safe and secure investment by means of savings during the most productive period of life. In accordance with this principle the Commission advocated the extension of protection to the dependents of employees, a form of protection which is virtually in the nature of compulsory life insurance. The pension to employees should be granted only on the basis of the attainment of a minimum age as well as length of service, since "it seems clear that some of the greatest abuses of a pension system come from the failure to specify a proper minimum age of retirement." Minimum pensions, varying with the different services, should be provided and maintained by contributions from employers and employees, with extra or surpensions accumulated by additional contributions made as salaries increase. The employers contributions should be paid in at the same time as those of the employees, since the reserve plan is both a more economical and a more secure basis than the cash disbursement plan. All contributions made by the employees should be returned with the accumulated interest in case of withdrawal from service. The principles recommended by the Commission are embodied in an outline for a standard pension plan, and additional suggestions are proposed for bringing existing funds under this plan, in other words, for meeting the accrued liabilities.

The Massachusetts Plan

The consideration of sound pension principles combined with the actual or threatened failure of a number of existing pension systems has borne fruit in recent legislation, which falls into two groups. The first teachers pension system to make a departure from the prevailing tradition was that established in Massachusetts in 1913; since that time Erie, Pennsylvania, in 1916, and Connecticut, in 1917, have followed the lead of Massachusetts and have adopted almost identical systems. Additional study of the subject led to the establishment of a somewhat different plan in New York City in 1917, followed in the same year with certain modifications in Pennsylvania. Both groups are open to certain criticisms, but both aim to embody sound

principles. It is not to be expected that there shall be uniformity throughout the country; the only uniformity that is desirable is that all systems shall be as financially sound as actuarial calculation can make them, and shall secure the ends at which a pension system aims.

The Massachusetts Teachers Retirement Act was passed in 1913 and came into force in 1914 as the result of a careful study inaugurated by state commissions[1] in 1910 and 1913. It applies to all teachers in the Commonwealth with the exception of Boston. The system is administered by a teachers retirement board of seven members, including the state insurance commissioner, the state bank commissioner, and the state commissioner of education, three members elected by members of the retirement association, and a seventh member elected by the other six. Membership in the Association was made optional for teachers in service and compulsory on all new entrants. The system is contributory, and the assessments are determined annually by the retirement board in accordance with actuarial advice, but are limited to sums equal to from three to seven per cent of salaries. Teachers may retire voluntarily at the age of sixty, or may be retired by the employing school committee at any time after that age if incapable of discharging their duties; retirement is compulsory at seventy. On reaching the age of retirement and after thirty years of service teachers become entitled to an allowance consisting of an annuity purchased with their accumulated contributions and a pension of an equal amount paid out of annual state appropriations. An option is permitted by which a retiring teacher may accept annuities of smaller amount with the provision that these be continued after his death to his dependents, as he may direct. In case of teachers withdrawing from service before reaching the age of retirement, or in case of death, their estates are entitled to a return of all their contributions with compound interest at three per cent. Disability allowances were not included in the original act but were added in 1917, and provide these benefits to teachers who become incapacitated for continued work in the schools after fifteen years of service. While this plan marks a considerable step in advance and opens up a new era in the history of teachers pensions in this country, it is still open to the objection that it is impossible to predict what the probable cost of the share assumed by the state is likely to be in the future on the cash disbursement plan that has been adopted. The reserve plan would have defined the state's obligations clearly, and would have furnished to the whole system the security that now underlies the teachers contributions. It should be mentioned, however, that the retirement board is watching the development of the system carefully, is accumulating valuable information, and has the constant advice of an actuary.

[1] *Report of the Commission on Old Age Pensions, Annuities and Insurance*, House No. 1400. Boston, 1910. *Report of the Commission on Pensions*, House No. 2450. Boston, 1914.

The Pennsylvania Plan

The Pennsylvania system, passed in 1917 but not effective until 1919, is an example of the second group, because it represents the tendency to establish funds of state-wide scope and because it has not been affected by some of the local problems that influenced the drafting of the New York City bill passed in 1917. The bill contains many of the features of the New York City pension scheme, including actuarial valuations, in addition to one already made, in 1919, 1921, 1924, and every fifth year thereafter. Membership is to be optional for teachers in service at the time of the establishment of the system. Retirement will be permitted only on the basis of age or disability. The fund will be accumulated wholly on the reserve plan. The teachers contributions will be determined according to age, sex, mortality tables, and interest rates, but teachers will have the option of not paying more than five per cent of salary each year, and the maximum salary from which deductions will be made will be $2000. Teachers in service at the establishment of the fund will be expected to pay contributions only for that part of their service following the establishment, and the state will meet the cost of the accrued liabilities or the allowance dependent on prior service.

In general it is intended that a teacher shall retire on request at the age of sixty-two and compulsorily at the age of seventy on an allowance equal approximately to half salary, which will be made up of an annuity purchased with the accumulations of the teachers contributions and a state annuity of one one-hundred-sixtieth of final salary for each year of service. The method of calculating the state's share is open to the objection that a teacher is not in a position to know what pension he may expect until he has retired, and to the danger that the system may be exposed to the not unknown abuse of sudden advances in the final salary which is the basis for the granting of pensions. On retirement teachers have the choice of a number of options: (*a*) to receive their allowances in monthly instalments; or (*b*) to receive reduced payments with the provision that any sums remaining at death shall be paid to heirs or assigns; or (*c*) to receive reduced payments with payments to a designated beneficiary thru life; or (*d*) to receive such other form of actuarial equivalent as may be approved by the Retirement Board. Disability allowances will be granted after ten years of service, and will be equal to at least thirty per cent of final salary, rising to a maximum of eight-ninths of the amount of the allowance which would have been due, had the teacher been able to continue in service until the age of retirement. The disability provision is well protected and requires frequent physical examinations. If a teacher retired on the basis of disability should recover sufficiently to pursue some gainful occupation, the amount of the allowance may be reduced by the amount thus earned. Refunds of total contributions are provided for with interest compounded at four per cent.

It is estimated that the present value of the benefits that would accrue to the

42,727 teachers now in service would amount to $60,587,657, of which $22,793,664 would be contributed by the teachers and $37,793,993 by the employers. To accumulate the employers share would require the annual appropriation of a sum equal to 5.6 per cent of the payroll for teachers now in service, or about $1,500,000 annually, and to 2.75 per cent for future entrants, beginning the first year with about $25,000.

The act does not apply to those school systems that already have a pension plan in force unless two-thirds of the teachers petition to join the state system. While the state will administer the fund thru the Retirement Board of seven members,—the Superintendent of Public Instruction, the State Treasurer, one member appointed by the governor, three members elected by the teachers, and one member elected by the board,—and will guarantee the financial soundness of the fund, the act provides that the state shall be reimbursed by the employers of the teachers throughout the state to the extent of one-half of the amount paid by it to meet the future costs of the pensions. The intention of this provision is clear; it is an effort on the one hand to interest the local employer in the welfare of teachers, and on the other to distribute the cost. But however laudable these purposes may be, the principle is open to several objections, of which the strongest is that since the act provides that the state may reimburse itself out of money due to local education authorities for school purposes, the school expenditures may be crippled to that extent. If the state desired to share the cost of the pensions, this should not have been done at the expense of the schools. The burden of the cost may tend to discourage local authorities from raising salaries, or lead to the employment of only low-salaried teachers, and to this extent the migration of good teachers may be checked. A state pension system, state maintained in reality and not in name only, would result in putting into practice a principle that is beginning to be established, that teachers are servants of the state; it would tend to consolidate the profession and break down the rigid and artificial barriers between rural and city school teachers; and, finally, it would contribute toward a general raising of standards based on a community of professional interests and a recognition of community service.

SUGGESTED SYSTEM OF RETIRING ALLOWANCES
FOR TEACHERS IN THE PUBLIC SCHOOLS
OF THE STATE OF VERMONT

The Suggested System

The following system of retiring allowances embodies the advantages and avoids the dangers that are discussed elsewhere in this Bulletin. It is much simpler than any system now in existence. Each teacher may have a formal contract. It is based upon exact information concerning all of the teachers that it is designed to protect. Such information, altho essential to the soundness of any pension system, has never before been collected for any state. In making it available for the present study, the Commissioner of Education for Vermont, Dr. Milo B. Hillegas, and the teachers of the state have performed a national service. Altho adapted to educational conditions in the State of Vermont, it is believed that this system can be easily adjusted to the conditions in any other state.

I. Administration

1. A Teachers Pension Board of five members:
   - two elected by the contributing teachers for terms of three years,
   - two representing the state (probably the Treasurer and the Commissioner of Insurance),
   - the Commissioner of Education.
2. Cost of Administration:
   - To be appropriated in advance by the state at each meeting of the legislature, in accordance with a budget presented by the Board.

II. Membership

1. Compulsory for all teachers entering the service after the inauguration of the system;
2. Optional for those already in service, if the option is exercised within one year from the inauguration of the system.

III. RETIREMENT

1. On the basis of Age:

Optional at 60 or later for women,
at 65 or later for men;
After 30 years of service,
20 of this in the state;
Compulsory for all at 70.

ALLOWANCE: The sums contributed annually by the teacher and the state, accumulated at compound interest of at least 4 per cent, applied at the time of retirement to purchase annuities on the basis of McClintock's Table of Mortality Among Annuitants and 3½ per cent interest. The teacher may, if he or she desires, choose at retirement:

(1) an annuity covering his or her life alone, or
(2) one guaranteeing also the return of the contributions remaining after his or her death, or
(3) an annuity for life followed by a life pension for his widow.

2. On the basis of Disability:

After 6 years of service in the state,
on the approval of the Board, after certification of total inability to teach, by the physicians of the Board and of the teacher;

An annuity based upon the sums accumulated on the basis of McClintock's Table of Mortality Among Annuitants and 3½ per cent interest, with an additional annual payment from the state sufficient to make the total annual pension equal to one-half of the average annual salary throughout the teacher's entire period of active service in the state. If, after retirement, the teacher should die before receiving in the form of an annuity all of the accumulations up to the time of his disability from his own and the state's annual contributions on his account, the balance will be paid to his family;

Allowance continued during agreement as to the teacher's

total disability, by the Board, its own and the teacher's physicians, after annual medical examinations.

The cost to the state of its share of these allowances cannot be estimated exactly until there is a larger accumulation of experience with regard to the disability of teachers. In other systems the cost of retirements on the basis of disability has been about one-tenth of those on the basis of age.

IV. Retirement of Teachers now in Service

1. Teachers who are under forty-five when they enter the system will retire on the basis of the accumulations of their contributions and those of the state for them, as in the case of teachers who begin to contribute when they enter the service.

2. Teachers who are forty-five or over when they enter the system will receive, in addition to the allowance based upon the accumulations as in 1, an annual payment from the state sufficient to make the total annual pension equal to one-half the average annual salary throughout the teacher's entire period of active service in the state, as in the case of teachers who retire on the basis of disability.

The maximum cost to the state of these extra payments for teachers who are forty-five or over on entering the system, if the payments are made after the retirement of the teacher, will be from about $5000 a year at the beginning of the system to about $35,000 a year after fifteen years, from which point it will decrease steadily until it disappears in about thirty or forty years thereafter. If the payments of the state are made, like those of the teachers, annually, in advance, they will begin at about $60,000 a year, and decrease steadily until they disappear in about twenty years, their total being only about two-thirds as great. These estimates are based upon McClintock's Table of Mortality Among Annuitants, and the supposition that all teachers will retire at the minimum ages on allowances

averaging one-half of their present salaries. (See Table III, page 39.) Both of these assumptions are conservative.

V. Contributions

1. Required or optional:

A. Required of all teachers entering the service after the plan is adopted:

B. Optional for teachers in service when the plan is adopted, if they exercise the option within one year from the inauguration of the system:

2. Amount:

A. By teachers annually,—

Five per cent of their current annual salaries, with a minimum of $16;

Up to any sum the teacher cares to contribute.

B. By the state annually,—

Equal to the payment required of the teacher and paid into the fund at the same time, with a maximum of 5 per cent of the teacher's salary in the year of payment and a minimum of $16.

The cost to the state of its share of these allowances will begin, at the inauguration of the system, at about $6000 a year,—that is, $16 for each of the 375 new teachers—and increase to about $67,000 a year,—5 per cent of the present salaries of the present number of teachers. This sum will increase slowly as the size and the salaries of the teaching staff increase, but it will never be more than approximately 5 per cent of the total payments for salaries.

Probably one-half of these payments will return to the state, because of the early death or withdrawal of teachers from service.

VI. Accumulations

To be credited, in individual accounts, with compound interest, a rate of at least 4 per cent per annum being guaranteed by the state.

Roughly, the contribution of a dollar a year begun at the age of 20 or 25 will yield a man a dollar a month for life, beginning 40 years later. Annuities for women cost about a fourth more.

The exact accumulation at 4 per cent compound interest of any sum contributed annually, beginning at any age from 20 to 45; the exact annuity for life that any accumulation will provide, and the exact cost of any desired annuity according to McClintock's Table of Mortality Among Annuitants and 3½ per cent interest, beginning at any age from 60 to 70, are given in Tables I and II on page 38.

VII. Return of Contributions

1. Of the teacher:

A. In case of
resignation,
dismissal, or
death before retirement,—

All of the teacher's contributions with compound interest at 3½ per cent will be returned to the teacher or to his or her family.

B. In case of
early death after retirement,—

If, upon retirement, the teacher has chosen this form of annuity, the unexpended balance of the teacher's accumulation will be paid in instalments to his or her family.

2. Of the state:

A. In case of a teacher's
death,
withdrawal, or
dismissal

After the completion of six years of service in the state, the state's contributions on his or her account, with their accumulations at 3½ per cent, will be returned to the teacher or to his or her family.

B. In case of such
death,
withdrawal, or
dismissal

Before the completion of six years of service in the state, the state's contributions on his or her account, with their accumulations, will be placed in the Reserve Fund, for the general purposes of the system.

VIII. ACCOUNTING

The system shall be audited annually, and a detailed report of all of its activities shall be presented to each meeting of the legislature.

IX. ACTUARIAL VALUATIONS

The system shall be studied actuarially, preferably by a different actuary, at least every three years.

The Board shall have power to change the scale of contributions, in accordance with actuarial experience, for teachers entering into the system thereafter.

X. ADJUSTMENT TO PRESENT SYSTEM

The moneys of the Vermont State Teachers' Retirement Fund Association shall be placed in the new system, to be used only for the benefit of the teachers for whom they were provided.

XI. RESERVE FUND

1. Gifts and receipts from any sources other than those already mentioned;
2. Returns to the state of its contributions on account of
early deaths or
withdrawals from the service;
3. Balances that may accrue because of
conservative interest, or
mortality rates, or
other causes;

4. And any other savings,
   shall be placed in a Reserve Fund,
   to be kept in part, according to the judgment of the Board, for contingencies, and
   to be used in part, according to the judgment of the Board, for
   administration,
   accrued liabilities, or
   any of the other purposes of the pension system.

XII. Change of Rules

Any of these rules and regulations may be changed by the Board in the interests of the whole body of teachers;

Such changes, however, shall affect only the teachers who enter the system after their adoption, or other teachers who may prefer them to the earlier rules.

The entire contract with each teacher shall be carried out on the basis of the rules and regulations in force at the time of that teacher's entrance to the system, unless he may agree formally with the Board to come under later rules.

Statistical Basis

Of the tables which follow, I and II were furnished by Samuel S. Hall, Associate Actuary of the Mutual Life Insurance Company of New York, who also approved Table III. Tables III to XV, inclusive, were prepared by the authors of this Bulletin, from information furnished by the teachers of Vermont, thru their Commissioner of Education. The circles and lines on the tables indicate the representative, median experience.

TABLE I

Accumulations of $1 per annum in Advance, from Entry to Ages indicated, at 4 per cent Compound Interest

Age at Beginning	Accumulations to Age										
	60	61	62	63	64	65	66	67	68	69	70
20	$98.8265	$103.8196	$109.0124	$114.4129	$120.0294	$125.8706	$131.9454	$138.2632	$144.8337	$151.6671	$158.7737
21	94.0255	98.8265	103.8196	109.0124	114.4129	120.0294	125.8706	131.9454	138.2632	144.8337	151.6671
22	89.4091	94.0255	98.8265	103.8196	109.0124	114.4129	120.0294	125.8706	131.9454	138.2632	144.8337
23	84.9703	89.4091	94.0255	98.8265	103.8196	109.0124	114.4129	120.0294	125.8706	131.9454	138.2632
24	80.7022	84.9703	89.4091	94.0255	98.8265	103.8196	109.0124	114.4129	120.0294	125.8706	131.9454
25	76.5983	80.7022	84.9703	89.4091	94.0255	98.8265	103.8196	109.0124	114.4129	120.0294	125.8706
26	72.6522	76.5983	80.7022	84.9703	89.4091	94.0255	98.8265	103.8196	109.0124	114.4129	120.0294
27	68.8579	72.6522	76.5983	80.7022	84.9703	89.4091	94.0255	98.8265	103.8196	109.0124	114.4129
28	65.2095	68.8579	72.6522	76.5983	80.7022	84.9703	89.4091	94.0255	98.8265	103.8196	109.0124
29	61.7015	65.2095	68.8579	72.6522	76.5983	80.7022	84.9703	89.4091	94.0255	98.8265	103.8196
30	58.3285	61.7015	65.2095	68.8579	72.6522	76.5983	80.7022	84.9703	89.4091	94.0255	98.8265
31	55.0849	58.3283	61.7015	65.2095	68.8579	72.6522	76.5983	80.7022	84.9703	89.4091	94.0255
32	51.9663	55.0849	58.3283	61.7015	65.2095	68.8579	72.6522	76.5983	80.7022	84.9703	89.4091
33	48.9676	51.9663	55.0849	58.3283	61.7015	65.2095	68.8579	72.6522	76.5983	80.7022	84.9703
34	46.0842	48.9676	51.9663	55.0849	58.3283	61.7015	65.2095	68.8579	72.6522	76.5983	80.7022
35	43.3117	46.0842	48.9676	51.9663	55.0849	58.3283	61.7015	65.2095	68.8579	72.6522	76.5983
36	40.6459	43.3117	46.0842	48.9676	51.9663	55.0849	58.3283	61.7015	65.2095	68.8579	72.6522
37	38.0826	40.6459	43.3117	46.0842	48.9676	51.9663	55.0849	58.3283	61.7015	65.2095	68.8579
38	35.6179	38.0826	40.6459	43.3117	46.0842	48.9676	51.9663	55.0849	58.3283	61.7015	65.2095
39	33.2480	35.6179	38.0826	40.6459	43.3117	46.0842	48.9676	51.9663	55.0849	58.3283	61.7015
40	30.9692	33.2480	35.6179	38.0826	40.6459	43.3117	46.0842	48.9676	51.9663	55.0849	58.3283
41	28.7781	30.9692	33.2480	35.6179	38.0826	40.6459	43.3117	46.0842	48.9676	51.9663	55.0849
42	26.6712	28.7781	30.9692	33.2480	35.6179	38.0826	40.6459	43.3117	46.0842	48.9676	51.9663
43	24.6454	26.6712	28.7781	30.9692	33.2480	35.6179	33.0826	40.6459	43.3117	46.0842	48.9676
44	22.6975	24.6454	26.6712	28.7781	30.9692	33.2480	35.6179	38.0826	40.6459	43.3117	46.0842
45	20.8245	22.6975	24.6454	26.6712	28.7781	30.9692	33.2480	35.6179	38.0826	40.6459	43.3117

TABLE II

Options with regard to Annuities

according to McClintock's table of mortality among annuitants and $3\frac{1}{2}$ per cent interest

Age	Option (1) Life Annuity, income to cease at annuitant's death				Option (2) Guaranteed Life Annuity, amount of excess, if any, of accumulations over income paid, to be paid in instalments to annuitant's estate				Option (3) Life income to teacher with 50% thereof to widow during her lifetime after his death, income to cease with death of last survivor	
	Men		Women		Men		Women			
	Value of Life Income of $1	*Income Purchased by $1000*	*Value of Life Income of $1*	*Income Purchased by $1000*	*Value of Life Income of $1*	*Income Purchased by $1000*	*Value of Life Income of $1*	*Income Purchased by $1000*	*Value based on Income of $1 to Husband*	*Income Purchased by $1000*
60			$12.2198	$81.83			$13.8856	$72.02		
61			11.8630	84.30			13.5749	73.66		
62			11.5045	86.93			13.2605	75.41		
63			11.1450	89.73			12.9432	77.26		
64			10.7850	92.72			12.6284	79.19		
65	$9.0986	$109.91	10.4245	95.92	$11.1774	$89.47	12.3100	81.23	$11.4433	$87.39
66	8.7617	114.13	10.0647	99.35	10.8660	92.03	11.9886	83.41	11.0842	90.22
67	8.4269	118.67	9.7060	103.03	10.5581	94.71	11.6722	85.67	10.7244	93.25
68	8.0946	123.55	9.3489	106.96	10.2503	97.56	11.3528	88.09	10.3645	96.48
69	7.7654	128.78	8.9943	111.19	9.9306	100.70	11.0303	90.66	10.0050	99.95
70	7.4400	134.41	8.6424	115.71	9.6380	103.76	10.7146	93.33	9.6466	103.66

TABLE III

Additional Cost to the State for Teachers now 45 or Over on the Reserve Basis and on the Cash Disbursement Basis

Age	*Number*	*Average Salaries*	*Teachers' and State's 5%*	*Number of Payments*	*Allowance from Accumulation*	*Pension of Half Salary*	*Part of Pension paid by State*	Total Cost to State	
								Reserve Basis	*Cash Disbursement Basis*
Men Retiring at 65									
45 to 49	17	$1550	$155.00	18	$454.37	$775.00	$320.63	$30,623.68	$39,116.86
50 to 54	9	1650	165.00	13	313.59	825.00	511.41	30,480.20	40,912.80
55 to 59	8	1750	175.00	8	184.34	875.00	690.66	44,583.52	55,252.80
60 to 69	2	525	—	—	—	414.50[1]	414.50	8,871.00	9,749.04
70 to 75	1	?	—	—	—	414.50[1]	414.50	3,607.00	3,237.24
								$118,165.40	
							Returned to State	35,031.54	
								$83,133.86	$148,268.74
Women Retiring at 60									
45 to 49	85	$475	$47.50	13	$67.21	$237.50	$170.29	$129,048.75	$155,023.82
50 to 54	51	475	47.50	8	36.43	237.50	201.07	109,843.48	120,642.00
55 to 59	31	525	52.50	3	14.21	262.50	248.29	113,087.41	101,510.61
60 to 69	16	425	—	—	—	212.50	212.50	35,360.00	41,016.70
70 to 75	3	725	—	—	—	362.50	362.50	9,385.00	6,383.52
								$396,724.64	
							Returned to State	41,715.62	
								$355,009.02	$424,576.65
							Total	$438,142.88	$572,845.39

TABLE IV

Employees Subject to Retirement Law as of December 1, 1916

Class of Employees	*Men*	*Women*	*Total*	*Total Annual Salaries*	*Average Annual Salary*
Superintendents	62	4	66	$102,569	$1,627.00
Principals	33	11	44	53,488	1,193.00
Teachers	173	2600	2773	1,188,476	408.39
Total	268	2615	2883		
Total Annual Salaries	$220,978	$1,123,555		$1,344,533	
Average Annual Salaries	$829	$429			$466

[1] Median salaries.

TABLE V

Distribution of Men Teachers by Year of Birth

Year	Number	Year	Number	Year	Number
1899	1	1883	10	1867	3
1898	2	1882	7	1866	–
1897	4	1881	8	1865	3
1896	5	1880	4	1864	2
1895	4	1879	7	1863	2
1894	6	1878	4	1862	2
1893	18	1877	4	1861	2
1892	22	1876	6	1860	2
1891	18	1875	7	1859	–
1890	12	1874	5	1858	1
1889	10	1873	3	1857	3
1888	16	1872	7	1856	–
1887	11	1871	2	1855	1
1886	12 Median	1870	5	1854	–
1885	11	1869	4	1853	1
1884	7	1868	3	1840	1
					268

TABLE VI

Distribution of Women Teachers by Year of Birth

Year	Number	Year	Number	Year	Number
1899	11	1882	48	1865	9
1898	81	1881	47	1864	9
1897	171	1880	29	1863	3
1896	202	1879	34	1862	17
1895	240	1878	47	1861	10
1894	222	1877	31	1860	4
1893	202	1876	40	1859	5
1892	195 Median	1875	32	1858	4
1891	125	1874	35	1857	8
1890	117	1873	28	1856	4
1889	90	1872	26	1855	1
1888	74	1871	15	1854	6
1887	78	1870	14	1853	1
1886	52	1869	24	1852	4
1885	56	1868	18	1850	2
1884	55	1867	14	1847	1
1883	55	1866	13	No record	2
					2611

TABLE VII

MEN TEACHERS—ACTIVE FORCE—CLASSIFIED BY AGE AND SERVICE

Present Age	*Total*	Length of Service							
		Less than 5 years	*5 and less than 10*	*10 to 14*	*15 to 19*	*20 to 24*	*25 to 29*	*30 to 34*	*35 and over*
70 to 75	1	—	—	—	—	—	—	—	1
60 to 69	2	1	—	—	1	—	—	—	—
55 to 59	8	—	—	1	1	2	3	1	
50 to 54	9	—	1	—	2	2	3	1	
45 to 49	17	—	—	4	1	10	2		
40 to 44	28	1	3	5	10	9			
35 to 39	27	—	6	16	4	1			
30 to 34	47	12	26	9					
25 to 29	67	46	21						
20 to 24	55	54	1						
17 to 19	7	7							
Total	268	121	58	35	19	24	8	2	1

TABLE VIII

WOMEN TEACHERS—ACTIVE FORCE—CLASSIFIED BY AGE AND SERVICE

Present Age	*Total*	Length of Service							
		Less than 5 years	*5 and less than 10*	*10 to 14*	*15 to 19*	*20 to 24*	*25 to 29*	*30 to 34*	*35 and over*
65 to 70	3	—	—	1	—	—	1	—	1
60 to 64	16	—	—	—	2	2	2	1	9
55 to 59	30	—	1	2	4	1	6	8	8
50 to 54	51	—	2	7	5	9	14	12	2
45 to 49	85	2	1	12	19	23	24	3	1
40 to 44	163	7	14	28	52	54	8		
35 to 39	188	12	20	57	80	19			
30 to 34	266	27	72	147	20				
25 to 29	484	155	286	42	1				
20 to 24	1061	973	88						
17 to 19	263	263							
Total	2610	1439	484	296	183	108	55	24	21

TABLE IX

Distribution of Men Teachers by Age and Salary

Present Age	*Total*	*Less than* $250	$250 *to* $299	$300 *to* $349	$350 *to* $399	$400 *to* $449	$450 *to* $499	$500 *to* $549	$550 *to* $599	$600 *to* $649	$650 *to* $699	$700 *to* $749	$750 *to* $799	$800 *to* $849	$850 *to* $899
70 and over	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
65 to 69	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
60 to 64	1	–	–	–	–	–	–	1	–	–	–	–	–	–	–
55 to 59	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
50 to 54	4	–	1	–	–	–	–	1	1	–	–	–	–	1	–
45 to 49	2	–	–	–	–	1	1	–	–	–	–	–	–	–	–
40 to 44	5	–	–	–	–	2	1	1	–	1	–	–	–	–	–
35 to 39	5	–	–	1	1	1	–	–	–	–	–	–	–	1	1
30 to 34	10	–	–	1	1	1	–	1	–	1	–	1	2	2	–
25 to 29	29	–	1	2	5	1	3	3	4	–	1	1	2	5	1
20 to 24	43	–	2	7	6	3	2	2	2	1	2	6	2	6	2
17 to 19	7	–	1	–	1	–	–	–	5						
Total	106	–	5	11	14	9	7	9	12	3	3	8	6	15	4

TABLE X

Distribution of Women Teachers by Age and Salary

Present Age	*Total*	*Less than* $200	$200 *to* $249	$250 *to* $299	$300 *to* $349	$350 *to* $399	$400 *to* $449	$450 *to* $499	$500 *to* $549	$550 *to* $599	$600 *to* $649	$650 *to* $699
65 to 70	1	–	–	–	–	–	–	–	–	–	1	–
60 to 64	12	–	–	–	–	1	8	1	1	–	1	–
55 to 59	27	–	–	–	1	3	11	–	6	3	2	1
50 to 54	37	–	–	2	1	4	16	3	3	3	3	2
45 to 49	70	–	–	1	4	9	25	6	7	8	6	4
40 to 44	138	1	1	2	10	17	41	18	15	15	11	7
35 to 39	166	–	2	3	18	23	44	24	22	15	12	3
30 to 34	246	1	–	15	33	37	61	33	34	18	7	7
25 to 29	452	2	3	15	47	115	119	60	36	31	19	5
20 to 24	1048	2	3	75	187	374	199	88	48	36	36	–
17 to 19	255	1	2	37	102	97	13	1	2			
Total	2452	7	11	150	403	680	537	234	174	129	98	29

TABLE IX (Continued)

Distribution of Men Teachers by Age and Salary

Present Age	*Total*	$900 *to* $949	$950 *to* $999	$1000 *to* $1099	$1100 *to* $1199	$1200 *to* $1299	$1300 *to* $1399	$1400 *to* $1499	$1500 *to* $1599	$1600 *to* $1699	$1700 *to* $1799	$1800 *to* $1899	$1900 *to* $1999	$2000 *and over*	*No Record*
70 and over	1	–	–	(1)	–	–	–	–	–	–	–	–	–	–	–
65 to 69	1	–	–	–	–	–	–	–	–	–	–	–	–	–	(1)
60 to 64	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
55 to 59	7	1	–	–	1	–	–	–	1	–	(1)	–	–	3	–
50 to 54	6	–	–	–	–	–	–	1	–	(–)	–	1	–	4	–
45 to 49	15	–	–	–	–	3	–	1	(3)	–	2	4	–	1	1
40 to 44	23	1	–	1	–	1	–	1	(6)	2	2	2	1	4	2
35 to 39	22	1	–	1	–	–	–	4	(7)	4	3	1	1		
30 to 34	37	–	1	5	5	(3)	1	2	8	8	–	4			
25 to 29	38	(8)	2	8	5	6	3	1	4	–	1				
20 to 24	12	5	2	5											
17 to 19															
Total	162	16	5	21	11	13	4	10	29	14	9	12	2	12	4

TABLE X (Continued)

Distribution of Women Teachers by Age and Salary

Present Age	*Total*	$700 *to* $749	$750 *to* $799	$800 *to* $849	$850 *to* $899	$900 *to* $949	$950 *to* $999	$1000 *to* $1099	$1100 *to* $1199	$1200 *and over*	*No Record*
65 to 70	2	(1)	1								
60 to 64	4	1	1	–	–	1	–	1			
55 to 59	4	–	1	1	–	–	1	1			
50 to 54	14	2	4	1	–	2	1	4			
45 to 49	15	3	3	2	–	1	–	4		1	1
40 to 44	25	5	1	2	3	3	2	3	4	1	1
35 to 39	22	2	5	1	3	–	1	4	1	4	1
30 to 34	20	5	3	1	3	3	–	2	1	–	2
25 to 29	32	11	12	4	2	1					2
20 to 24	13	3	–	1							9
17 to 19	8										8
Total	159	33	31	13	11	11	5	19	6	6	24

TABLE XI

Distribution of Men Teachers by Service and Salary

Length of Service	*Total*	*Less than* $250	$250 *to* $299	$300 *to* $349	$350 *to* $399	$400 *to* $449	$450 *to* $499	$500 *to* $549	$550 *to* $599	$600 *to* $649	$650 *to* $699	$700 *to* $749	$750 *to* $799	$800 *to* $849	$850 *to* $899
35 and over															
30 to 34															
25 to 29	1						1								
20 to 24	4					2		2							
15 to 19	4		1			1			1	1					
10 to 14	6			1	1		1			1				2	
5 to 9	15		1	1	1	2	4	1	1		1	1		2	
Less than 5 years	76		3	9	16	4	1	5	7	1	2	7	(6)	11	4
Total	106		5	11	18	9	7	8	9	3	3	8	6	15	4

TABLE XII

Distribution of Women Teachers by Service and Salary

Length of Service	*Total*	*Less than* $250	$250 *to* $299	$300 *to* $349	$350 *to* $399	$400 *to* $449	$450 *to* $499	$500 *to* $549	$550 *to* $599	$600 *to* $649	$650 *to* $699
35 and over	14					6	2	2	(2)	2	
30 to 34	15			1	1	3	1	2	2	(3)	2
25 to 29	41		1		3	12	4	(8)	7	3	3
20 to 24	95		1	3	10	28	6	(18)	15	9	5
15 to 19	162	1	2	9	15	53	(24)	27	16	10	5
10 to 14	271	1	7	33	52	(71)	39	34	18	12	4
5 to 9	457	1	22	55	125	(130)	60	33	14	11	6
Less than 5 years	1396	15	117	302	(471)	238	97	50	55	41	10
Total	2451	18	150	403	677	541	233	174	129	·91	35

TABLE XI (Continued)

Distribution of Men Teachers by Service and Salary

Length of Service	*Total*	$900 *to* $949	$950 *to* $999	$1000 *to* $1099	$1100 *to* $1199	$1200 *to* $1299	$1300 *to* $1399	$1400 *to* $1499	$1500 *to* $1599	$1600 *to* $1699	$1700 *to* $1799	$1800 *to* $1899	$1900 *to* $1999	$2000 *and over*	*No Record*
35 and over	1			1											
30 to 34	2													2	
25 to 29	7	1			1							2		3	
20 to 24	20					1		1	3	1	2	5	2	4	1
15 to 19	15					1			6	2	1	1	1	2	1
10 to 14	29			2	1	1		4	7	5	6	1		1	1
5 to 9	43	2	2	7	4	5	3	3	8	6		3			
Less than 5 years	45	13	3	11	5	5	1	2	4		1				
Total	162	16	5	21	11	13	4	10	28	14	10	12	3	12	3

TABLE XII (Continued)

Distribution of Women Teachers by Service and Salary

Length of Service	*Total*	$700 *to* $749	$750 *to* $799	$800 *to* $849	$850 *to* $899	$900 *to* $949	$950 *to* $999	$1000 *to* $1099	$1100 *to* $1199	$1200 *and over*	*No Record*
35 and over	7	3	2	1		1					
30 to 34	9		4			1	2	1		1	
25 to 29	14	2	1	1	1	1	1	6		1	
20 to 24	13	3	2	1		1		3	1	2	
15 to 19	24	3	4	2	5	4			4		2
10 to 14	25	6	3	3	2	2	1	5	1	2	
5 to 9	27	9	5	3	2	1	1	4			2
Less than 5 years	41	10	6	1	1	1	1				21
Total	160	36	27	12	11	12	6	19	6	6	25

TABLE XIII

SERVICE OF MEN TEACHERS OUTSIDE THE STATE (110)

Present Age	1 year or less	1 and less than 2	2 to 4	Less than 5 years	5 to 9	10 to 14	15 to 19	20 to 24	25 or over	Total
20 to 24	5	1		6						6
25 to 29	11	1	5	17	5					22
30 to 34	7	5	4	16	8	1				25
35 to 39	1	–	5	6	6	3	1			16
40 to 44	3	1	1	5	3	3	3	1		15
45 to 49	2	–	2	4	1	4	2	1		12
50 to 54	–	–	1	1	1	1	2	–		5
55 to 59	–	–	2	2	2	2	–	1		7
60 to 64	1	–	–	1	–	–	–	–		1
65 to 70	–	–	–	–	–	–	–	–	1	1
	30	8	20	58	26	14	8	3	1	110

TABLE XIV

SERVICE OF WOMEN TEACHERS OUTSIDE THE STATE (354)

Present Age	1 year or less	1 and less than 2	2 to 4	Less than 5 years	5 to 9	10 to 14	15 to 19	20 to 24	25 or over	Total
17 to 19	1			1						1
20 to 24	39	18	8	65						65
25 to 29	27	14	29	70	11					81
30 to 34	7	9	13	29	21	4				54
35 to 39	11	7	7	25	4	8	2	1		40
40 to 44	12	6	9	27	8	5	5	1	1	47
45 to 49	8	–	4	12	8	5	2	2	1	30
50 to 54	4	1	–	5	2	3	2	4	1	17
55 to 59	2	1	2	5	1	–	–	2	–	8
60 to 64	–	2	–	2	–	2	1	2	–	7
65 to 70	1	–	2	3	–	1	–	–	–	4
	112	58	74	244	55	28	12	12	3	354

TABLE XV

Withdrawals from Service

1911–16

Men

	Marriage	*Disability*	*Death*	*Other Causes*	*Total*
1911	–	–	–	2	2
1912	1	–	–	4	5
1913	–	–	–	5	5
1914	–	–	1	6	7
1915	–	1	–	7	8
1916	–	–	–	5	5
	Plus 2 incomplete records				32

Women

	Marriage	*Disability*	*Death*	*Other Causes*	*Total*
1911	20	3	–	7	30
1912	47	3	2	14	66
1913	75	5	2	23	105
1914	65	7	–	23	95
1915	65	9	3	38	115
1916	86	14	1	68	169
	Plus 9 incomplete records				580

Total Number of Teachers

	Men	*Women*	*Total*	*Withdrawals*
1911	265	3021	3286	32
1912	256	2735	2991	71
1913	227	2852	3079	110
1914	215	2885	3100	102
1915	235	2797	3032	123
1916	228	2764	2992	174

Theory and Principles

Retirement Board

A small board is recommended in order to secure administrative efficiency and a sound system of centralized responsibility. The state is represented by those executive officers who have charge of finance and insurance; the commissioner of education is included as representing both the state and the teachers. In some states it may be desired to include also the attorney-general and a third representative of the teachers. In accordance with generally accepted principles it is advisable that the representatives of the teachers should be elected at large to serve for periods that are long enough to give them familiarity with the problems that they are to handle; a term of at least three years would probably be a satisfactory period. The terms of service should overlap in order to secure continuity of policy and the necessary knowledge of details on the part of the majority of the members at any one time. It is not desirable to pay members of retirement boards more than will compensate them for any loss of income incurred thru attending to the business of the board.

The chief function of the board is to frame by-laws and regulations to carry out the purposes of the act, and to supervise, subject to the necessary expert advice, the management of the fund. In the majority of pension systems the boards have been given discretionary powers to make changes, as for example in prorating pensions, that affect the interests of teachers who are already in the service. Such discretionary powers are too wide. In order to maintain the confidence of participants in the system, sound policy requires that changes either in the amount of contribution required or in the amount of retiring allowance to be paid should be made only on the advice of actuaries after an investigation of the fund, and that such changes should apply only to future entrants into the system, altho teachers already in the system may accept the changes by formal amendment of their contracts.

The administration of a system involving such a small number of teachers as those of Vermont does not necessitate the permanent employment of an actuary, altho the services of a consulting actuary may be retained. An actuarial investigation at least every three years, however, is essential for security. The sound administration of a pension system requires at the inauguration the elaboration of a careful system of records and accounting which in themselves are an important element in securing soundness. Of existing systems only those of Massachusetts, Connecticut, and Erie, Pennsylvania, and the new systems of New York City and Pennsylvania, all in their infancy, have provided for the keeping of accurate records. A system of records, organized on the advice of an actuary, forms the basis of accurate pension reporting, for which no good standard has yet been developed.

Membership

The principle that membership in a pension fund should be compulsory for all new

teachers is now widely accepted. Compulsion in such cases does not involve any hardship if it becomes generally recognized that the acceptance of the provisions of a pension act is one of the conditions of appointment. Compulsory membership in a pension fund is essential not merely in order to afford every teacher some protection against dependency in old age, but it is only on this basis that school authorities can relieve the system of teachers who become inefficient, without imposing undue hardships. At the same time a well-organized pension plan tends to encourage thrift, and may perform the same function as a savings bank in which the teachers deposit not only the contributions required under the plan but any sums above this that they desire. Membership cannot be made compulsory for teachers already in service because many of them may have made arrangements for protection against life contingencies, or may have incurred other obligations that would make the requirement of a contribution to another fund impossible, or they may be so old that the necessary actuarial contributions required from them would be too burdensome. It is, however, advisable to afford these teachers such inducements as are possible to become members of the system for the same reasons that are given above. These may properly take the form of meeting in whole or in part the accrued liabilities by appropriations from the state treasury.

Teachers in service at the time of the passage of a pension act, provided that special arrangements are made for them, may be required to declare within one year after its establishment, whether they will become members of the pension system. This requirement leaves the teachers ample time for a consideration of all the conditions involved and enables the authorities to obtain an early estimate of the state's future obligations. A longer postponement would involve either increased assessments or smaller pensions. It should be understood that teachers who give a declaration in writing of their intention not to avail themselves of the provision of the act have no claim, sentimental or otherwise, on it either for disability or retiring allowances, since the one aim of the plan is to avoid the complications of a discretionary measure and to ensure stability by careful actuarial calculations of the future cost.

Retirement

The proposed measure provides for the retirement of teachers on the combined basis of age and service. Most existing plans that provide for retirement on the basis of service alone are in danger of financial instability. Under these systems teachers may spend from one-third to one-half of their adult lives in retirement, or may retire at the time of their greatest efficiency, since such systems enable a teacher to retire at as early an age as forty-five or fifty. Measures of this kind are not only opposed to the interests of society, but they are almost impossibly expensive, and since the rates of contribution in most systems have not as a rule been actuarially calculated to provide for such early retirement, the funds tend to be diminished very rapidly, with the resulting bankruptcy of the system within a few years. Retirement on the basis of age

alone is inequitable, since the employer's contributions to the pension fund are made in recognition of service rendered, in order to furnish protection for the employee in old age. It is desirable to place the age of voluntary retirement lower for women than for men; the present plan places the age of voluntary retirement for women at 60 and at 65 for men. It is essential to remember, however, that since actuarial statistics show that women are longer-lived than men, the same accumulations will purchase lower annuities for them than for men, or, to put it in another way, the same annuity will cost more for women than for men. The ages of 60 and 65 are the ages for voluntary retirement; it is proposed that no teacher be permitted to remain in service after the age of 70. Since the pension protection is provided, such compulsory retirement imposes no hardship. The existence of the pension protection also affords a justification for the compulsory retirement by a school committee of a teacher at the age of 60 or 65, if by his retention the efficiency of the school concerned appears to be impaired. Thirty years has been taken as the service qualification in the present plan, of which twenty years must be in the State of Vermont. Service outside Vermont is recognized on the principle that failure to include such service may tend to discourage the mobility of the profession.

Retiring Allowance

The amount of retiring allowances for future teachers and teachers below the age of forty-five who are in service at the time of the introduction of the pension plan will be determined by the amount contributed annually by and on behalf of each teacher, by the rate of interest earned or guaranteed by the fund, and by the rates of mortality; in other words, the retiring allowance will be the annual sum that can be purchased by the accumulations standing to a teacher's credit at the time of retirement. Such sums can be predicted with scientific accuracy by the actuaries, and the teacher is all the time in a position to know exactly how much retiring allowance may be expected in return for any given contribution, or how much must be contributed in order to secure any desired allowance. Under this system teachers, if they so desire, may obtain contracts setting forth these expectations. McClintock's Table of Mortality Among Annuitants, recommended here, with interest at 3½ per cent, is the table most generally required by the state laws in calculating annuities. The experience of the system may result in tables representing the expectations of teachers even more closely. This plan avoids the complications that arise in many systems which base the retiring allowance on the salary received by the teachers at the time of retirement or the average salary for a few years preceding retirement, or by the payment of a flat rate, or by calculating it on the basis of service. The course of salaries cannot be predicted over a period of twenty-five, thirty, or more years, and to calculate a pension on such a basis introduces an element of guesswork, since nobody can foretell whether the accumulation of the annual contributions paid by the teacher and the employer will or will not yield a pension related to the salary at the time of

retirement. The chief objection to the flat rate—that is, the same pension to every teacher—is that its cost is more burdensome on the low-salaried teacher than on the teacher enjoying a high salary, and on the younger rather than on the older teacher, assuming the annual contribution required to be the same for all; further, it has generally failed to serve as an inducement to the high-salaried teacher to retire before the compulsory age for retirement is reached. The determination of a pension on the basis of a certain sum for each year of service is open to the same objections as the flat rate, and has the further defect that the pension proposed under this plan bears no relation either to salary or to contribution.

Salary has, however, been taken into account under the present scheme in so far as it is expected that each teacher will contribute toward a retiring allowance that will enable him to continue on somewhat the same standard of living in retirement as in active service. In order to enable teachers to make such arrangements as may best suit their circumstances, the plan gives them the opportunity of increasing their contributions as their salaries increase, and of selecting one of three options at the time of their retirement.

Disability Allowances

The administration of disability allowances has been surrounded hitherto with considerable difficulty. The appeal of sentiment in favor of the teacher who is incapacitated for further work on account of mental or physical disability has been almost as great as in the case of incapacity due to old age. One cause of the difficulty is that as yet there are but meagre statistics available to indicate the incidence of complete disability among teachers as a class. The probability is that it is not great, but hitherto disability claims have usually been presented and accepted on the testimony of the applicant's own physician without further check. It is here proposed that disability allowances be granted only on the certification of both the physician attending the teacher and of physicians appointed by the Board of Retirement. In order to guard against the continued payment of an allowance in cases where disability has been overcome, it is recommended that a teacher who is granted a disability allowance be reëxamined by his own and the Board's physicians once each year. This implies the reëntrance into service of the teacher whose health is restored.

The great variety of practice in this field appears in the number of years of service that are required as a basis for the granting of a disability allowance and in the amount of the allowance in different systems. The service requirement varies, in different systems, from two to thirty-five years, and the amount of the disability allowance varies from a sum determined at the discretion of the Board concerned to a sum bearing the same proportion to a regular retiring allowance as do the years of service before disability to the total period of service required for retirement.

Until such time as a medical examination is required for entrance upon teaching, it would seem advisable to establish the principle that the minimum length of service

after which a teacher may become eligible to a disability allowance should be that which is generally recognized as qualifying for permanent appointment. In the case of Vermont this period tends to be six years; accordingly the state will permit teachers who are totally incapacitated for further teaching to retire on a disability allowance after this period. Until more information on the subject of teachers disability has been accumulated, it would be advisable to determine the amount of the disability allowance so far as possible on the same basis as the retiring allowance, that is, the annuity that can be purchased with the accumulations standing to the teacher's credit. Since in the case of early disability such an annuity would be very small, the state may properly assume the cost of the difference between this annuity and half of the teacher's annual average salary during the entire period of his active service in the state.

Contributions

The amounts that teachers may be expected to contribute annually are determined most simply by the fact that they bear a definite relation toward their retiring allowances. It would be inequitable to permit teachers to contribute such small sums annually that the annuity that could be purchased with their accumulations would hardly be sufficient to maintain life. On the other hand, it would be unjust to require such high annual contributions that teachers would feel too great a burden on their present expenditures. It is advisable that teachers should be required to contribute such annual sums as will together with contributions from the state ultimately yield an annuity that will keep them in comfort in retirement. In general, such an annuity is equivalent to about one-half of the average salary at the time of retirement and can be purchased with the accumulation of annual contributions equal to about 5 per cent of salary, duplicated by the state's contributions. Since salaries in Vermont are not yet large, a minimum contribution of $16 a year is required, even tho this be more than 5 per cent of the initial salary. Since the fund here proposed guarantees interest at 4 per cent, it may prove an encouragement to thrift to permit teachers to increase their annual contributions up to any sum beyond the required minimum, the additional accumulations serving to purchase higher annuities. In such cases, however, the state's contributions would be limited to a sum equal to 5 per cent of the teachers salaries.

As a consequence of the principle that the justification of a pension system is based as much on the requirements of public service as on the desirability of furnishing protection for teachers in their old age, it is now generally accepted that the state should share equally with the teachers the cost of the retiring allowances, except in the case of those teachers who are so old that the annual actuarial contributions that would be required to purchase them a reasonable pension would be too burdensome. But for the younger teachers and for new teachers it is desirable that the annual contributions of the state should, within the limits provided, duplicate those of the teachers and be paid into the fund at the same time.

The requirement that the state shall make its payments on behalf of teachers at

the same time as the teachers is based on the principle that this plan, known as the reserve plan, is the cheapest and safest both for the state and the teacher. The state might meet its obligations for pensions by annual appropriations as the needs arise. It has been found that this method, the cash disbursement plan, while perhaps cheap at first, becomes too burdensome and may rise as high as one-third of the annual salary roll of active teachers. This burden may become so excessive that relief may be sought by prorating pensions with the consequent disappointment of the teachers expectations. Under the reserve plan, on the other hand, the cost always remains uniform, and need not rise above 5 per cent of the cost for salaries in any one year, and may be limited to that amount, as in the present plan. Advantage is also taken of the interest rate, which after a few years yields very rapid accumulations. Thus one dollar set aside each year for thirty years at 4 per cent compound interest would become $58.32, and in forty years $98.82. A further advantage of the reserve plan is that, if combined with the practice of keeping individual accounts for each teacher, the accumulations necessary to purchase the allowances for a retiring teacher are always ready to hand, and the dangers attending a system in which the funds are pooled are absent.

Teachers who have been in service for some years before the introduction of a pension plan, and upon whom the burden of paying sufficient contributions to secure an adequate retiring allowance would be excessive, constitute a separate problem. No difficulty would arise if a pension system were established wholly for future entrants or for a body of young teachers. The presence of the older teachers gives rise to the difficulty of meeting what are known as accrued liabilities. Membership in the fund remains optional for them for the period prescribed, but once they join, they must contribute regularly. It is here recommended that they contribute annually the same percentage of their salaries as other teachers in service, but that the state pay annually on their account, in addition to the ordinary duplication of the teachers contributions, such sum as with the other accumulations will provide an annuity equal to half of the average annual salary of a retiring teacher throughout his period of service. These additional sums needed to meet the accrued liabilities make a pension system costly for a time only; they decrease and ultimately disappear entirely. Failure to recognize that teachers in service require a provision different from that for future entrants has been the most frequent cause of the breakdown of pension plans.

ACCUMULATIONS

Following the principle observed in savings and insurance systems, it is desirable that the contributions of both the teachers and the state be kept in individual accounts credited to each teacher up to the time of retirement. In most of the existing systems all funds are credited to one account; where the funding has been inadequate this method has resulted at first in the payment of pensions in full, then pro rata, and finally in bankruptcy, the younger teachers in effect contributing toward the pay-

ment of the pensions of their older colleagues instead of toward the accumulation of a fund for themselves.

It is advisable, and in the present prospects of the investment market entirely possible, for the state to guarantee interest to the fund at 4 per cent; any sums that may be earned above this may be placed in a reserve fund or be employed to reduce appropriations.

Return of Contributions

One of the results of the merely sentimental and philanthropic character of many pension funds has been the unwillingness to return contributions to teachers who withdraw from service owing to resignation, dismissal, or death. A scientifically planned system will return not only the teacher's contributions, but after a period of service those placed to his credit by the state. It follows, since funds are kept in individual accounts and provision for the future pensions is made on an individual basis, that this can be done safely without curtailing the rights and expectations of other members of the fund. Further, since the new systems are based on the savings plan and aim partly to encourage thrift, a teacher's contributions are regarded as his own savings and always belong to him. The state's contributions are paid to a teacher's credit to serve at once as a consideration for service and to meet a future contingency; it is doubtful whether it can be satisfactorily argued that a teacher's right in these payments from the state inures from the first year of service. On the basis, however, that the state's payments are regarded as deferred pay, the state's contributions may be returned to a teacher withdrawing after a continuous service of six years, the period necessary to qualify for permanent appointment. The total amount, therefore, standing to the credit of a teacher who resigns, or is dismissed, or dies before retirement, may be returned with interest at 3½ per cent, the difference between the rate for withdrawal and the rate for retirement being considered as some return for the protection afforded during the period of service, and being used to pay for the cost of administration. When such accumulations are small, it is most convenient to return them in a lump sum. When they are considerable in amount, it may be better to allow them to remain and accumulate until the time of retirement as the basis of a partial annuity.

In the case of a teacher who dies after retirement before the total fund standing to his credit has been exhausted in the payment of his retiring allowance, the unexpended balance may be returned to his family with interest at 4 per cent, provided that this form of option has been selected.

Actuarial Valuations

Until within the last three years few pension systems in the United States were established with the advice and help of actuaries. They have been resorted to usually when a fund was approaching bankruptcy. In order to establish and maintain the stability of a fund, it is essential that actuarial coöperation be secured before the or-

ganization of a system and employed periodically during its existence. This is all the more necessary at present because of the absence of special professional statistics that tell the story of a teacher's career. Little is known about the length of service, longevity, or disability of teachers. Even if the teaching profession shows the same experience as the ordinary tables, the actuary's assistance is still necessary. It is essential, therefore, that pension systems should be actuarially sound at their inauguration, and that the soundness should be maintained by periodical investigations. It is estimated that such investigations should be conducted at least once in three years. For most plans the permanent appointment of an actuary is unnecessary after the initial organization has been effected and a good system of forms, records, and bookkeeping has been introduced. The latter are no less necessary than the periodical investigations, for they alone can furnish the basis for sound and accurate reports which will serve in turn as the basis for the state's appropriations and for publicity, in itself a strong element of stability. Annual reports based on information secured in this way furnish the best safeguard for any particular system and an essential means of promoting a more accurate and scientific knowledge of the principles that should underlie pension systems in the future. The whole problem of pensions is not only actuarial, but also economic, professional, and social.

Change of Rules

From time to time, as more accurate information accumulates about the teacher's needs and wishes, or as an actuarial investigation may suggest, a change in existing rules may appear desirable. Under most existing systems this power is left to the Board of Retirement or to some corresponding board. Usually boards are permitted to prorate the pensions of those who have already retired, or are about to retire. It is unjust to grant such power unreservedly to any board, and the need for any such changes is obviated by organizing the system with as much scientific accuracy as possible. The power to change rules is essential for the adjustment of the system to future contingencies, but it is fair to employ such power only as it affects the interests of teachers joining the system subsequent to the introduction of the changes. Any alterations in the contract existing between the pension fund and the teachers in service is permissible only by formal agreement with the teachers concerned.

TABULAR STATEMENT OF

State	Date of the Establishment	Administration: Board	Administration: Including Teachers' Representatives	Expenses of Administration	Membership: Teachers already in Service	Membership: New Teachers	Source of Funds: State, etc.	Source of Funds: Teachers' Annual Contributions
ARIZONA	1912	State Board of Education					School Fund of the State	
CALIFORNIA	1913	State Board of Education			Optional up to Jan. 1, 1914	Compulsory	5% of inheritance and transfer taxes; income and interest from investments; donations, gifts, legacies; state appropriations	$12
COLORADO Denver	1909	Local Boards of School Directors					Special levy on school district up to one-tenth of a mill; gifts and bequests	
CONNECTICUT	1917	Teachers' Retirement Board, 5 members	2 teachers elected by members of the retirement association	Annual state appropriations according to the estimates for expenses	Optional	Compulsory	Annual state appropriations	5% of salary, not less than $25 nor more than $100 a year
New Haven	1911	Board of Retirement, 5 members	1 member elected by the teachers	Such sum from the general fund as is necessary to pay clerical and other expenses	Compulsory	Compulsory	Appropriations, gifts, or bequests from public or private sources: deductions from salaries for absence or illness	1% of salary during first 10 years of service; 2% beyond that
New London	1911	Board of Retirement, 5 members	2 members of the teaching staff elected		Compulsory	Compulsory	Appropriations, gifts, or bequests; 5% of excise moneys or license fees; an appropriation from city fund	1% of salary
DELAWARE Wilmington	1911	Board of Retirement, 7 members	3 members of the teaching staff elected		Compulsory after passage of act	Compulsory	$1000 yearly provided by City Board of Education; donations, legacies, bequests, gifts, etc.; $2000 yearly from the Council of the city	1% of salary during first 10 years; 2% during next 10 years; 3% after 20 years. Maximum of $50 in one year
ILLINOIS	1915	Board of Trustees of Illinois State Teachers' Pension and Retirement Fund, 5 members	3 elected by the teachers	Compensation of Secretary and expenses of members of the Board paid out of the fund	Optional up to Sept., 1920	Compulsory	One-tenth of one mill upon each dollar of the assessed valuation of all the taxable property of the state coming under the provisions of the act; donations and legacies, etc.	$5 first 10 years; $10 succeeding 5 years; $30 succeeding 10 years
Chicago	1893	Board of Trustees, 9 members	6 members elected by contributors to the fund		Optional up to July 1, 1916	Compulsory	Donations, legacies, gifts, bequests, etc.; the interest on taxation for school purposes; and from public money up to twice the amount of the teachers contributions annually	50 cents a month during first 5 years; $1 a month during next 5 years; $1.50 during the next 5; $3 a month after 15 years of service
Peoria	1913	Board of Management, 9 members	6 must be elected by active teachers		Compulsory	Compulsory	Donations, legacies, gifts, bequests	$5 first 5 years; $10 next 5 years; $15 next 5 years; $30 beyond 15 years of service
INDIANA	1915	Board of Trustees of the Indiana State Teachers' Retirement Fund, 5 members	2 teachers appointed by the Governor	Clerical assistance and actual expenses of members of the Board paid for out of the fund	May join at any time on payment of arrearages	Compulsory	Gifts, devises, bequests, appropriations from legislature; money or property from other sources; interest on investments; semi-annual apportionments from state school tuition tax	$10 first 15 years; $20 next 10 years; $25 next 10 years; $20 up to and including fortieth year of service

TEACHERS PENSION SYSTEMS

Amount of Total Contributions	*Average Annual Salary 1915-16*[1]	*Retiring Allowances*			*Disability Allowances*		*Refunds*		*Discussion in Carnegie Foundation Reports*
		Amount	*Basis*		*Requirement*	*Amount*	*Cause*	*Amount*	
			Service	*Age*					
	$770.40	$600	25 years						
$360	$998.45	$500	30 years, 15 years in state		Bodily or mental infirmity; 15 years of service	Same ratio of full pension as years served are to 30 years			IX, p. 30
	$632.85	$480 maximum	25 years, 15 years in state	60 years, men; 55 years, women	Permanent incapacity; 10 years' service	$480 maximum			IX, p. 36 XII, pp. 87 ff.
	$624.35	Amount purchased by the contributions of an equal sum from the state, or options	35 years or 30 years and age 60	60 voluntarily; 70 compulsorily	Incapacity for further satisfactory service after age 55	Same basis as pension	Withdrawal from service or death	Total contributions with compound interest	XII, pp. 87 ff.
A sum equal to the amount of the annuity of the first year	$778.98	One-half of average annual salary during last 5 years of service. Minimum, $400; maximum, $800 a year	30 years, 20 years in the city; 40 years of service up to time of establishment of the fund	65	Mental or physical incapacity certified by three physicians appointed by the Board of Retirement; 15 years of service, 10 in the city	One-thirtieth of full pension for each year of service up to 30 years	Dismissal	Total contributions without interest	
	$598.63	50% of average annual salary during last 5 years of service	30 years, 15 years in city at discretion of Board; 35 years, 15 years in city, or 65 years of age, on request		Mental or physical disability after 25 years of service, 15 years in city	Same basis as pensions			
$400	$381.40	$400 and a proportionate sum in case of retirement after 20 years and less than 35 years of service	30 years and age 65, or 35 years, 20 in city of Wilmington	65	Incapacitated for performance of duty after 20 years' service. Medical examination from time to time	Same ratio of full pension as years of service of the total required	Resignation Death	Two-thirds without interest One-half of total contributions without interest	
$400	$750.85	$16 for each year of service, with $400 maximum	25 years, 15 years in state	50	Incapacity declared by two physicians; 15 years' service; must pay a total of $400 into the fund	$16 for each year of service, with $400 maximum	Ceasing to teach before completing 15 years' service	50% of amount contributed without interest	X, p. 51 f.
	$1267.52	$400	25 years, 15 years in city		Permanent disability proved by three physicians at request of Board of Trustees after 15 years of service	Same ratio of full pension as years of service of the total required	Resignation before completing 15 years of service, or dismissal	One-half of total contributions; the total in case of dismissal	VII, pp. 37, 38
$450	$747.44	$400	25 years, 15 years in city		Permanent disability proved by three physicians at the request of the Board of Management after 15 years of service	Same ratio of full pension as years of service of the total required	Resignation before completing 15 years of service. Dismissal or failure of reappointment	One-half of total contributions Total contributions	
$600–$700	$580.32	$600–$700 according to years of service above 35	35 years, 23 in state		Disability proved by medical examination at teacher's expense; 25 years of service	$350–$575 according to years of service above 25	Leaving service for any reason	Amount contributed without interest	X, p. 52

[1] Based on Report of United States Commissioner of Education, 1917.

State	Date of the Establishment	Administration: Board	Administration: Including Teachers' Representatives	Expenses of Administration	Membership: Teachers already in Service	Membership: New Teachers	Source of Funds: State, etc.	Source of Funds: Teachers' Annual Contributions
Indianapolis	1907	Board of Trustees, 7 members	3 members elected by public school teachers of the city		Compulsory on teachers receiving $450 a year or more	Compulsory on teachers receiving $450 a year or more	Gifts, grants, devises, or bequests, a tax of 1 cent upon $100 of taxable property in the city	1% of salary during first 15 years of service up to $10; 2% of salary after first 15 years up to $20
Terre Haute	1913	Board of Trustees, 5 members	3 members elected by public school teachers of the city		Optional	Optional	Gifts, grants, devises, or bequests; a tax of ¼ of one mill upon each $1 of taxable property	$10 a year for first 12 years of service; $20 a year for next 8 years; $25 a year for 10 years thereafter
KANSAS Topeka	1911	Board of Education			Optional	Optional	Gifts, etc.; a sum from general funds of not less than 1½ times the amount of the assessments on salary and not less than the amount necessary to meet the demands of the fund	1–1½% of salary
KENTUCKY Louisville	1912	Trustees of Teachers' Annuity Fund of 7 members	5 members employed in the service elected by teachers		Compulsory on teachers receiving $450 a year or more	Compulsory on teachers receiving $450 a year or more	Gifts, grants, devises, or bequests, etc.	1% of salary during first 15 years, up to $10 a year; 2% up to $20 a year thereafter
Cities of Second Class (Permissive)	1914	Board of Insurance and Annuity of 7 members	4 members elected by teachers	Remuneration to the Treasurer paid annually out of the fund as decided by the Board	Optional	Compulsory after passage and adoption of the act	$1000 yearly out of funds for maintenance of schools; a levy of 1 cent on every $100 of taxable property; donations, gifts, etc.	1% of the salaries of teachers during first 10 years and 2% thereafter; maximum $40 a year
LOUISIANA New Orleans	1910	Board of Trustees of 7 members	3 members elected by teachers	Remuneration to the Secretary and any other employees fixed by the Board	Optional to Jan. 1, 1911	Compulsory	Gifts, grants, bequests	1% of salary of classroom teachers during first 10 years; 1½% during next 10 years; 2% thereafter. Non-classroom teachers pay 2% of salary
MAINE	1913	State Superintendent of schools					State appropriation of $8000 a year first year, and $25,000 annually thereafter	
MARYLAND	1908	State Board of Education					State appropriation of $28,000 annually	
Allegany Co.	1912	Board of Trustees, 5 members	3 elected by teachers		Compulsory	Compulsory		1% first 10 years; 1½% during next 10 years; 2% thereafter. Maximum in each period $10, $15, $18
Baltimore Co.	1912	Board of Trustees, 9 members	5 elected by teachers		Optional	Compulsory	Gifts, grants, bequests; county appropriations to meet the expenses of the fund	1% first 10 years; 1½% during next 10 years; 2% thereafter. Maximum in each period $14.40, $21.60, $28.80
Baltimore	1908	Board of Trustees, 7 members	3 elected by teachers		do.	do.	do.	do.

TEACHERS PENSION SYSTEMS (Continued)

Amount of Total Contributions	Average Annual Salary 1915-16	Retiring Allowances: Amount	Retiring Allowances: Basis: Service	Retiring Allowances: Basis: Age	Disability Allowances: Requirement	Disability Allowances: Amount	Refunds: Cause	Refunds: Amount	Discussion in Carnegie Foundation Reports
	$866.10	$600 maximum. Proportionate pension for less than 40 years of service	40 years		Aged, infirm, diseased, or disabled teachers after 15 years of service and examination by a physician; to be reëxamined from time to time	Same ratio of full pension as years of service of the total required	Withdrawal from service before receiving benefit from the fund, or in case of death	One-half of the total contributions without interest	
$510	$682.54	$300-$600, according to years of service	20 years or more, 12 of which may have been outside				Withdrawal from service before completing 20 years of service, or in case of death	Total contributions without interest	IX, p. 37
At least $250	$765.18	$500	30 years, 15 years in the city schools		Disability or incapacity after 25 years of service, 15 years in the city schools	Same ratio of full pension as years of service of the total required	Dismissal Withdrawal from service or death	Total contributions. One-half of total contributions without interest	
A sum equal to the first year's annuity if retiring after 30 years' service	$751.69	$400 maximum. Proportionate pension for less than 40 years of service	40 years for full pension, 30 years for proportionate pension. All service must be in the city		Disability or disease after 20 years of service on examination by a physician	Same ratio of full pension as years of service of the total required	Withdrawal from service	One-half of total contributions without interest	
A sum equal to the amount of the first year's annuity		30% of average salary for last 5 years of service plus 2% of this salary for each year above 25 years. Maximum 50% or $600	25 years, 20 in the state and 15 in the city concerned		Disability after 15 years of service in the state, and 10 in the city concerned, after medical examination	Proportionate amount of full pension according to length of service	Resignation or dismissal	Three-fourths of contributions without interest	
A sum equal to the amount of the first year's annuity	$730.63	One-half of average annual salary for last 5 years of service. Minimum $300; maximum $600	40 years		Disability after 10 years of service after medical examination	Proportionate amount of full pension according to length of service	Resignation or death	One-half of contributions without interest	
	$430.24	$150-$250 according to length of service	25-35 years, 20 years in state	60					VII, p. 33
	$561.06	$200	25 years; and physical or mental infirmity	60					VII, p. 26 IX, pp. 25, 28 f.
$610 maximum	$557.00	50% of average annual salary during last 5 years of service. Minimum $200; maximum $400	40 years, 20 years in the county		Disability after 20 years of service after medical examination	Same basis as salary	Ceasing to teach in the county or death	One-half of contributions without interest	
A sum equal to the amount of the first payment	$739.00	50% of average annual salary during last 5 years of service. Minimum $360; maximum $600	35 years, 20 years in the county		do.	do.	do.	do.	
do.	$693.32	do.	40 years, 20 years in the city		do.	do.	do.	do.	

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
MASSACHUSETTS	1913	Teachers' Retirement Board, 7 members	3 members elected by the beneficiaries	Annual state appropriations according to the estimates for expenses	Optional up to Sept. 30, 1914, or thereafter on paying arrearages with interest	Compulsory	State appropriation, annually	3% to 7% of salary; not less than $35, nor more than $100
Boston (1)	1900	Board of Trustees, 11 members	6 members elected by teachers	Maximum of $1500 a year appropriated by the city	Optional	Compulsory	Gifts and legacies	$3 from every alternate monthly payment
Boston (2)	1908	Board of Trustees, 3 members					Annual appropriation by city of 5 cents on each $1000 of the valuation of the city	
MICHIGAN	1915	State Teachers' Retirement Fund Board, 6 members	At least one woman teacher. Appointed by Governor	Not less than $1500 a year for Secretary, and actual expenses of members of the Board paid out of the fund	Optional within 1 year of the passing of the act	Compulsory	Donations, gifts, legacies, etc.; income from investments	½% of salary (up to $5) in first 5 years; 1% (up to $10) next 10 years; 2% (up to $20) next 15 years
Detroit	1895	Board of Trustees, 7 members	3 teachers elected by members of the fund				Donations, legacies, gifts, bequests, etc.; appropriations by the Board of Education or the Common Council and the Board of Estimates; deductions from teachers' salaries for absence, etc.; and tuition of non-residents	1% to 3% of salary up to $1000 salary a year
MINNESOTA	1915	Board of Trustees of the Teachers' Retirement Fund, 5 members	3 elected by the members of the retirement fund association	Salary of Secretary and all necessary expenses paid out of the fund	Optional up to Sept. 1, 1917	Compulsory	Donations, gifts, legacies, bequests, etc.; interest on investments; one-tenth of one mill on all taxable property in the state	$5 first 5 years; $10 second 5 years; $20 next 10 years; $25 next 5 years
Duluth	1909	Board of Trustees, 9 members	5 elected by the teachers		Optional	Optional	One-tenth of money received each year from property tax	$10 first 5 years, $20 next 5 years, and $25 up to 30 years
Minneapolis	1909	Board of Trustees, 9 members	5 elected by the teachers		Optional	Compulsory	do.	$10 first 5 years; $20 next 5 years; $25 up to end of 30 years of service
St. Paul	1909	Board of Trustees, 11 members	6 members elected by the members of the fund		Compulsory	Compulsory	do.	Initiation fee $5; 1% of salary up to $25 per year
MISSOURI St. Louis	1901	Executive Committee, 9 members	5 members elected by the Teachers' Benevolent Fund Association		Optional	Optional	Gifts, donations, bequests, interest on investments	Members before Oct. 12, 1907, pay 1% of salary for 30 or 25 years; others pay 1% of salary up to $15 a year for 35 years
MONTANA	1915	Public School Teachers' Retirement Salary Fund Board, 3 members		Legislature makes such appropriations as may be necessary	Optional up to Jan. 1, 1916	Compulsory	Donations, legacies, gifts, and bequests; income and interest from investments	$1 a month, up to and including 25 years

TEACHERS PENSION SYSTEMS (Continued)

Amount of Total Contributions	*Average Annual Salary* 1915-16	*Retiring Allowances*			*Disability Allowances*		*Refunds*		*Discussion in Carnegie Foundation Reports*
		Amount	*Basis*		*Requirement*	*Amount*	*Cause*	*Amount*	
			Service	*Age*					
From $1050 to $3000 in 30 contributions	$800.18	Annuity purchased by contributions and an equal sum from the state; or options	30 years	Voluntary at 60; compulsory at 70	Inability to render satisfactory service after 15 years of service	Same basis as pension	Withdrawal from service before retirement age; or in case of death	Amount contributed with compound interest at 3%	VIII, p. 46 IX, p. 28
$540	$1337.59	Determined each year by the Board of Trustees. Maximum $180	30 years, 10 years in the city		Incapacity certified by 2 physicians; 2 years of service		Resignation from service after 2 years	One-half of total contributions	VII, p. 41 IX, p. 25
	do.	One-third of salary at time of retirement; minimum $312, maximum $600	30 years, 10 in the city	65	Incapacity. Same requirement of service as for pension	Same basis as pension			VII, p. 41
$425 maximum or at least 60% of the prospective annuity for 1 year	$605.47	One-half average annual salary for 5 years preceding retirement. Min. $200; max. $500. Proportionate amount for service from 25 to 30 years	30 years, 15 in the state		Physically or mentally incapable in judgment of employing board; 15 years of service	One-thirtieth of full annuity multiplied by years of service	Withdrawal from service before retirement age	50% of the amount contributed without interest	X, p. 53
	$969.78	$330	30 years, 20 in city or 25 years in city on application; 25 years, 15 in city, at discretion of Board		Incapacity in judgment of Board. 20 years of service, 10 in city	Same as retiring allowance	Resignation or dismissal for cause	Not to exceed 50% of contributions at discretion of Board	
$400	$521.52	$350–$500 according to years of service	20 years, 10 years in the state		Physical or mental incapacity; 15 years' service	One-twentieth of the full annuity for each year	Resignation from service or death before receiving pension	50% of the amount contributed without interest	X, pp. 53 f.
$650	$895.80	$333.33–$500 according to years of service from 20 to 30 years	20 years		Incapacity after 2 years	An amount determined by the Board	Discharge Resignation	All the contributions without interest. One-half the contributions without interest	VII, p. 36 IX, p. 36
$650	$1122.28	$333.33–$500 according to years of service from 20 to 30 years	20 years		Incapacity after 2 years of service	An amount determined by the Board	Withdrawal from service	An amount equal to the total contributions	
Maximum $625	$821.78	$480	25 years, 15 years in the city		Incapacity after 5 years of service determined by 3 physicians	Same ratio to full pension as years of service to total required			
	$1081.41	Annual appropriation made and divided equally among annuitants	Members before Oct. 12, 1907, 30 years for men, 25 for women, 15 years in city. Other members 35 years' service and 15 years in Association		Physical or mental incapacity, by vote of Board		Discharge from service Resignation	Total contributions Half of total contributions	
$300	$702.43	$600	25 years, 15 years in the state		Physical or mental incapacity; 15 years' service	Same ratio of full pension as years served are to 25 years			X, p. 54

State	Date of the Establishment	Administration Board	Including Teachers' Representatives	Expenses of Administration	Membership: Teachers already in Service	Membership: New Teachers	Source of Funds: State, etc.	Source of Funds: Teachers' Annual Contributions
NEBRASKA Omaha	1909	Board of Education					Grant of one and one-half times the amount of teachers contributions each year	1% of salary
NEVADA	1915	State Board of Education			Optional up to Oct. 1, 1915	Compulsory	An ad valorem tax of 3 mills on the $100 of all taxable property in the state. Donations, legacies, gifts, and bequests, and interest and income from investments	$9 a year
NEW HAMPSHIRE	1915	State Superintendent of Instruction					Annual state appropriation	
NEW JERSEY (1)	1896	Board of Trustees of the Teachers' Retirement Fund, 9 members	5 teachers nominated by elected delegates and appointed by the Governor	Clerical and other expenses paid by the state up to $1500 per annum	Optional up to Jan. 1, 1909	Compulsory	Donations, gifts, legacies, bequests, etc., and interest from investments	2% of salary first 10 years; 2½% next 5 years; 3% next 5 years. Not more than $50 in 1 year
NEW JERSEY (2)	1903	Commissioner of Education					Deductions from the annual apportionment to counties for school purposes	
NEW YORK	1911	State Teachers' Retirement Fund Board, 5 members	3 representatives appointed by the Commissioner of Education	Maximum of $2000 annually for Secretary out of the funds; also actual expenses of members of the Board	Compulsory after date on which the act came into effect	Compulsory	State appropriations to carry out purposes of the law; donations, legacies, gifts, etc., interest from investments; districts and cities contribute an amount equal to the sum contributed by the teachers employed by them	1% of salary
Albany	1907	Board of Trustees, 3 members			Optional	Compulsory	Donations, legacies, etc., 5% of excise moneys	1% of salary
Buffalo	1896	Board of Trustees, 5 members	2 members of teachers associations *ex officio*		Optional	Optional	Donations, legacies, gifts, bequests, etc.; annual appropriations by the common council of city of a sum not exceeding the teachers contributions of the preceding year	1% to 2% of salary
Cohoes	1908	Board of Trustees, 7 members	5 teachers elected by the teachers		Compulsory	Compulsory	Donations, legacies, gifts; a sum equal to 3% of salary roll from excise moneys; forfeitures and deductions of salaries	1% of salary. Maximum $100 a year
Mt. Vernon	1909	Board of Education			Optional	Compulsory	Donations, legacies, gifts; 5% of excise moneys of the city; deductions and forfeitures from salary	1% of salary

TEACHERS PENSION SYSTEMS (Continued)

Amount of Total Contributions	*Average Annual Salary* 1915-16	*Retiring Allowances* Amount	*Retiring Allowances* Basis: Service	*Retiring Allowances* Basis: Age	*Disability Allowances* Requirement	*Disability Allowances* Amount	*Refunds* Cause	*Refunds* Amount	*Discussion in Carnegie Foundation Reports*
	$854.29	$500	Voluntary after 35 years' service, 20 years in city; compulsory after 40 years		Disability after 25 years' service	Proportionate allowance of full pension			IX, p. 36
$270	$782.86	$500	30 years, 15 in the state		Physical or mental incapacity for work after 15 years' service in the state	An annual amount in same ratio of full pension as years of service are of 30 years			X, pp. 54 f.
	$486.80	60% of average annual salary, for 5 years preceding retirement	30 years, 15 years in the state; 35 years Must hold state certificate	55 women 60 men	Enforced retirement thru disability	Same proportion of full pension as years of service are of total service required			X, p. 55
Maximum $1000 or at least as much as the first year's annuity	$861.86	60% of average annual salary for last 5 years of service. Minimum $250; maximum $650	20 years in state, and incapacitated for service						VII, p. 27 IX, pp. 28 f. X, pp. 62 f., 92
	$861.86	One-half of average annual salary for 5 years preceding retirement	35 years in public school work, 25 years in the state; or 70 years of age and last 20 years' service in state; or 32 years' service in state and 75 years of age	70 75	Physical disability after 35 years' service in state and age 70 years	Same as pension			VII, p. 27 IX, pp. 28 f. X, p. 92
An amount of at least 50% of the expected annuity	$967.20	One-half of average annual salary during 5 years preceding retirement. Maximum $600	25 years, 15 years in the state		Physical or mental incapacity; 15 years' service, 9 years in state	Same proportion of full pension as years of service are of 25 years			VII, p. 30
A sum equal to 30% of salary for last 5 years of service	$756.62	do.	30 years in city		Physical or mental incapacity after 20 years' service	Same proportion of full pension as years of service are of 25 years			VII, pp. 30-33
A sum equal to 40% of salary at time of retirement	$881.30	One-half of salary at time of retirement with a maximum of $800	30 years, women, 24 years in city; 35 years, men, 28 years in city		Permanent incapacity for efficient service. 20 years' service for women; 25 years for men; four-fifths of period in city	Same basis as full pension	Failure to be reappointed	Total contributions without interest	
An amount equal to 20% of salary at time of retirement. Maximum $300	$486.70	One-half of salary at time of retirement. Maximum $500	30 years, 15 in city, on request; 40 years, 15 in city, compulsorily		Mental or physical incapacity after 20 years' service, 15 in city	Proportional allowance of full pension according to years of service	Dismissal for cause	Total contributions without interest	
A sum equal to 30% of annuity	$949.85	One-half of salary at time of retirement. Maximum $800	25 years, women; 30 years, men; 15 years in city		Mental or physical incapacity after 20 years' service, 10 in city	Proportional allowance of full pension for years of service	Discharge or failure to be reappointed	do.	VII, pp. 30-33

TABULAR STATEMENT OF

State	Date of the Establishment	Administration: Board	Administration: Including Teachers' Representatives	Expenses of Administration	Membership: Teachers already in Service	Membership: New Teachers	Source of Funds: State, etc.	Source of Funds: Teachers' Annual Contributions
New York	1917	Board of Retirement, 7 members	3 members elected by the teachers	Annual appropriations by city according to estimates for expenses	Compulsory	Compulsory	Annual appropriations to accumulate a reserve for each teacher to furnish half of the retiring allowance, and death benefits	Such percentage of salary as will accumulate to provide half of the retiring allowance; minimum of 3% of salary for those in service
Rochester	1905	Board of Trustees	2 members in service elected by the teachers				Donations, legacies, gifts, etc.; annual appropriations by city of one-half of teachers' contributions, etc.	2% of salary
Syracuse	1897	Board of Education			Compulsory	Compulsory	Deductions for absence; donations, legacies, gifts; and other sources	Maximum of 1% of salary
Westchester Co.	1909	Board of 5 appointed by county judge	Superintendent or principal		Optional	Compulsory	Donations, legacies, etc.; appropriations not exceeding total of teachers' assessments	1% of salary
NORTH DAKOTA	1913	Board of Trustees of the Teachers' Insurance and Retirement Fund, 5 members	3 members appointed by the Governor from teachers	Maximum of $1200 annually for Secretary out of the fund; also actual expenses of members of the Board	Optional up to Jan. 1, 1914	Compulsory	A fund of ten cents for each child of school age in each county	1% of salary during the first 10 years up to $20; 2% during the next 15 years up to $40
OHIO Cincinnati Cleveland Columbus Dayton Hamilton Springfield Toledo Tiffin Youngstown	1911	Board of Trustees, 3-7 members	4-5 members elected by the teachers		Optional	Compulsory	Donations, legacies, gifts, and bequests; 1% to 2% of gross receipts of taxation raised by the board of education; deductions for absence, etc.	$2 a month from salary
OREGON Portland	1911	Board of Trustees, 11 members	6 members elected by members of the Teachers' Retirement Fund Association		Optional	Compulsory	Gifts and donations; 3% of taxes levied for school purposes; fines and forfeitures on teachers	$1 a school month during the first 10 years; $2 a school month during the next 10 years; $3 a school month for 10 years following
PENNSYLVANIA	1917 (Effective 1919)	Retirement Board, 7 members	3 teachers elected by members of the retirement association	State appropriations according to estimates of the Board	Optional	Compulsory	State appropriations to accumulate a reserve for each teacher to furnish half the retiring allowance	An annual sum up to 5% of salary (maximum $2000) actuarially determined to yield about half of retiring allowance

TEACHERS PENSION SYSTEMS (Continued)

Amount of Total Contributions	*Average Annual Salary 1915-16*	*Retiring Allowances*			*Disability Allowances*		*Refunds*		*Discussion in Carnegie Foundation Reports*
		Amount	*Basis*		*Requirement*	*Amount*	*Cause*	*Amount*	
			Service	*Age*					
	$1261.41	Annuity equal to half of average salary during last 10 years of service, purchased with accumulations of contributions from city and teacher; or options	35 years of service or age, as in next column	65 voluntarily; 70 compulsorily	Mental or physical incapacity for performance of duty after 10 years of service; periodical medical examination required	Annuity purchased by teachers' accumulations, and pension from city of one-fifth of average salary during last 10 years of service for each year of service	Resignation, dismissal, or death	Total contributions with compound interest, plus half of final salary in case of death	VII, pp. 39-41 VIII, pp. 53-55 IX, p. 39 X, pp. 59 ff. XI, pp. 112 ff. XII, pp. 87 ff., 106 ff.
40% of salary at time of retirement	$860.25	One-half of salary at time of retirement with a maximum of $800	20 years, women, 25 years, men; 15 years in city, in case of dismissal or compulsory retirement. Voluntarily, 30 years for women, 35 years for men; 15 years in city				Discharge or failure to be reappointed	Total contributions without interest	
A sum equal to 20% of salary at time of retirement	$689.41	do.	do.				do.	do.	
Amount equal to 50% of annuity expected		One-half of annual salary in 5 years preceding retirement. Maximum $600; superintendent or principal $800	25 years, 10 in county		Mental or physical incapacity; 15 years of service, 6 years in county	Same ratio of full pension as years of service are of total required	do.	do.	
A sum equal at least to full amount of the annuity expected. Maximum $800	$574.76	One-fiftieth of average salary for five years preceding retirement multiplied by total years of service. Maximum $750	25 years, 18 years in state		Permanent mental or physical disability; 15 years of service	Same basis as in case of full pension	Withdrawal before retirement	One-half of the sum contributed without interest	IX, pp. 28, 31
	$528.88	$12.50 for each year of service, with a maximum of $450	30 years, 15 in city paying the pension		Physical or mental disability; 20 years of service, 10 in city paying the pension; vote of a majority of Board of Trustees	Same basis as retiring allowance	Failure to be reappointed before completing 20 years of service Resignation	Total contributions Half of total contributions	VII, p. 37 IX, p. 36
$600	$1222.18	$333.33⅓ at end of 20 years service plus $16.66⅔ for each additional year of service. Maximum $500	30 years		Total disability after 20 years of service, 10 years in city	Same as retiring allowance	Failure to be reappointed or discharge Resignation	Total contributions without interest Any sum in excess of $300 without interest	
	$470.18	Annuity purchased with accumulated contributions and from state one-one-hundred sixtieth for each year of service; or options		62 voluntarily; 70 compulsorily	Disability after 10 years of service; periodical medical examination required	Annuity purchased with accumulated contributions, and from state one-ninetieth of final salary for each year of service. Minimum 30%; maximum eight-ninths of final salary	Resignation, dismissal, or death	Total contributions with compound interest, or an annuity purchased therewith	XII, p. 110

State	Date of the Establishment	Administration: Board	Administration: Including Teachers' Representatives	Expenses of Administration	Membership: Teachers already in Service	Membership: New Teachers	Source of Funds: State, etc.	Source of Funds: Teachers' Annual Contributions
Erie	1916	Teachers' Retirement Board, 5 members	2 teachers elected by the Teachers' Retirement Association	Annual appropriations by Board of School Directors according to estimates for expenses	Optional	Compulsory	Annual appropriations by Board of School Directors in accordance with estimates	3% to 7% of salary; not less than $35, nor more than $100
Harrisburg	1908	Retirement Board, 5 members	2 members elected by teachers		Compulsory except where teacher receives only the minimum salary under state law	Compulsory as for teachers in service	Annual appropriation by Board of School Directors of a sum equal to the amount of teachers contributions; any other funds	2% of salary during the first ten years; 3% of salary thereafter. Maximum in one year $50
Philadelphia	1907	Retirement Board, 5 members	2 members elected by teachers		Optional	Compulsory	Annual appropriation of a sum equal to the amount of teachers contributions. Minimum $50,000	1% of salary during first ten years of service; 2% of salary thereafter. Maximum in one year $50
Scranton	1911	Retirement Board, 7 members	3 members elected by teachers		Compulsory	Compulsory	Annual appropriation by Board of School Directors of a sum equal to the amount of teachers contributions; any other funds	$9 a year during first 10 years; $15 a year subsequently for 20 years
RHODE ISLAND	1907	State Board of Education					Annual appropriations to carry out the purposes of the act	
Newport	1898	Board of Trustees, 7 members	3 elected by teachers		Optional	Compulsory	Donations, legacies, bequests, etc.; appropriations	1% of salary
Providence	1897	Board of Trustees, 8 members	3 elected by teachers		Optional	Compulsory	Donations, legacies, bequests, etc.	1% of salary
SOUTH CAROLINA Charleston	1898	Board of Trustees, 3 members	1 member elected by teachers				Donations, legacies, gifts, bequests, etc.; 3% of gross income of the special school fund paid on the one mill tax until 1927	
TENNESSEE Chattanooga	1915	Board of Commissioners					Local taxes	
UTAH Permissive in cities of first or second class	1917	Local Retirement Commissions, 3 members	3 members elected by the members of the retirement associations	No compensation for Commissioners or officers	Optional for 30 days after local organization	Compulsory	Donations, legacies, bequests, etc.; deductions for absences, etc.	1% of salary with maximum of $12 a year
Salt Lake City	1909	Retirement Commission, 7 members	3 members elected by teachers	No compensation for Commissioners or officers	Optional for 30 days after local organization	Compulsory	Donations, legacies, bequests, etc.; deductions for absences, etc.	1% of salary with maximum of $12 a year

Amount of Total Contributions	*Average Annual Salary* 1915-16	*Retiring Allowances* *Amount*	*Retiring Allowances* *Basis* *Service*	*Retiring Allowances* *Basis* *Age*	*Disability Allowances* *Requirement*	*Disability Allowances* *Amount*	*Refunds* *Cause*	*Refunds* *Amount*	*Discussion in Carnegie Foundation Reports*
	$682.68	Annuity purchased by contributions and an equal sum from the city	30 years	60	Physical or mental disability after 15 years of service	Same basis as retiring allowance	Withdrawal or death	Total contributions with compound interest	XI, p. 109
25 payments	$714.83	One-half of annual salary at date of retirement. Minimum $300; maximum $800	30 years, 20 in city	60	Disability; 5 years of service	One-thirtieth of full annuity for each year of service			
25 payments	$946.52	One-half of annual salary at date of retirement. Minimum $400; maximum $800. Smaller pensions may be supplemented out of Elkin Fund	30 years, 20 in city; if physically or mentally incapacitated, or age 60	60	Disability; 5 years of service	One-thirtieth of full annuity for each year of service	Dismissal	Total contributions without interest	VII, pp. 42, 43
$390	$652.77	Maximum $500	30 years, 15 years in city		Total disability; 5 years of service; re-examination by physician				
	$721.91	One-half of average annual salary for five years preceding retirement. Maximum $500	35 years, 25 years in state. Must hold state teacher's certificate						VII, p. 27
	$580.05	One-half of annual salary at time of retirement. Maximum $600	30 years, 15 in city		Physical or mental incapacity after 10 years of service, after medical examination	Same basis as pension	Dismissal	A sum varying from total amount to one-third of contributions according to years of service	
	$784.54	do.	35 years, men, 30 years, women; 20 years in city		do.	do.			
	$553.52	One-half of annual salary at time of retirement. Maximum $250	25 years; need of maintenance must be proved						
	$558.11	Two-thirds of salary in last year of service	30 years	60					XI, p. 109
Maximum $360	$724.92	One-half of average annual salary during last 5 years of service. Maximum $600	30 years, 10 years in state	60	Physical or mental disability; 30 years of service, 10 in state	One-half of average annual salary during 5 years preceding retirement. Maximum $600	In case of death	Total amount of contributions	VII, p. 36 IX, p. 32 XII, p. 94
	$866.46	One-half of average annual salary during last 5 years of service. Maximum $600	30 years, 10 years in state	60	Physical or mental disability; 30 years of service, 10 in state	One-half of average annual salary during 5 years preceding retirement. Maximum $600	In case of death	Total amount of contributions	

TABULAR STATEMENT OF

State	Date of the Establishment	Administration: Board	Administration: Including Teachers' Representatives	Expenses of Administration	Membership: Teachers already in Service	Membership: New Teachers	Source of Funds: State, etc.	Source of Funds: Teachers' Annual Contributions
VERMONT	1913	Board of Managers, 7 members	2 members elected by members of the retirement association	Actual expenses of members of the Board paid out of the fund			Donations, legacies, gifts, etc.; state appropriation not exceeding $10,000 annually; income and interest from investments	Fixed by local authorities
VIRGINIA	1908	State Board of Education					State appropriation of $5000; legacies, bequests, etc.; income and interest from investments	1% of salary
WEST VIRGINIA Wheeling	1916	Board of Trustees, 7 members	2 teachers elected	Clerk of Board receives 2% of annual receipts	Optional	Compulsory	Gifts and donations; appropriations of Board to meet the requirements	$20
WISCONSIN	1911	Board of Trustees of the Teachers' Insurance and Retirement Fund, 5 members	3 members elected by the members of the fund	Maximum of $1200 annually for Secretary, and actual expenses of members of the Board to be paid out of the fund	Optional up to Sept. 1, 1912	Compulsory	Donations, legacies, etc.; state to make up deficit out of school funds	1% of salary during first 10 years up to $15; 2% but not more than $30 during next 15 years
Milwaukee	1909	Public School Teachers' Annuity and Retirement Fund Trustees, 9 members	4 teachers		Optional	Compulsory	Gifts and legacies; income and interest from investments; and at the discretion of Board of School Directors a sum not to exceed 1% of the gross amount of the school fund in one year	$2 a month

TEACHERS PENSION SYSTEMS (Concluded)

Amount of Total Contributions	*Average Annual Salary* 1915-16	*Retiring Allowances* *Amount*	*Basis* *Service*	*Age*	*Disability Allowances* *Requirement*	*Amount*	*Refunds* *Cause*	*Amount*	*Discussion in Carnegie Foundation Reports*
40% of the expected annuity	$422.72	One-half of the largest salary received by beneficiary during service in the state. Maximum $500	25 years in the state; 30 years total, 20 years in the state	60	Age or infirmities	Discretionary			IX, p. 32
30% of average annual salary during last 5 years of service	$341.90	One-half of average annual salary during last 5 years of service. Maximum $500	30 years in the state	58 men 50 women	Physical or mental disability certified by State Board of Health and Board of Education	Same basis as pension			VII, p. 26
$600	$685.85	$360	30 years, 20 years in the city	65	Total disability after 20 years of service at discretion of Board	Same basis as pension	Resignation, dismissal, or death	Total contributions without interest	XI, p. 110
Maximum $600	$545.00	$12.50 for each year of service. Maximum $450	25 years, 18 years in the state		Physical or mental disability; 18 years of service	Same basis as pension	Resignation, dismissal, or death	One-half of total contributions without interest	VII, pp. 26, 27 IX, p. 28 XII, p. 94
$500	$983.62	$400	25 years, 15 years in the city		Incapacity, certified by 2 physicians; 15 years of service	At discretion of Trustees if temporary; if permanent one-twenty-fifth of full annuity for each year of service	Resignation, dismissal, or death	One-half of total contributions	

SUMMARY OF TEACHERS PENSION SYSTEMS

A STUDY of 67 pension plans for teachers in the United States, representing twenty-five states and sixty-four counties and cities, shows that the movement for such pensions is recent but widespread, and still extending. Generally the systems are administered by special boards, in which the teachers constitute a majority. Provision is as a rule made for retirement on the basis of service and of disability, but usually only for teachers entering the service after the establishment of the system. Funds are in most cases provided by teachers contributions and by public appropriations in approximately equal amounts, but the funds arranged for are frequently insufficient to pay the pensions that have been promised.

The first system of teachers pensions to be established in the United States was that of Chicago, which was inaugurated in 1893. Before the year 1900 seven other systems had been founded. Before 1910 there were 23 more. More than half of all of the systems (36), however, have come into existence since the beginning of 1910. Our general experience concerning teachers pensions, therefore, is still very brief,—and this in spite of the fact that there are some questions concerning pensions that experience alone can answer.[1]

There are now state wide pension systems for teachers in 21 states, permissive systems in 4 others, and local systems in 9 more. Thus 34 states are represented in the movement.[2]

The existing pension systems are sometimes administered by the superintendent or commissioner of education, sometimes by the Board of Education, but in nearly four-fifths of the systems there is a special pension board, or commission, or committee. These boards have from three to eleven members, but two-thirds of them have five or seven. Nearly all of these special boards (49 out of 51 reporting) include representatives of the teachers, who are generally (42 out of 49 reporting) elected by the teachers themselves. In slightly more than half of the boards the teachers representatives constitute a minority. As, however, the superintendent or commissioner of education is generally an *ex-officio* member, it may be said that the teachers representatives generally constitute a majority.[3]

In nine-tenths of the systems (47 out of 52 reporting) membership is compulsory for new teachers. Membership has been optional for the teachers already in service at the

[1] Years of establishment of 67 systems reporting: 1893, 1895, 1896 (2), 1897 (2), 1898 (2), 1900, 1901, 1903, 1905, 1907 (4), 1908 (6), 1909 (9), 1910, 1911 (9), 1912 (4), 1913 (7), 1914, 1915 (8), 1916 (2), 1917 (4).

[2] State systems: Arizona, California, Connecticut, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New York, North Dakota, Pennsylvania, Rhode Island, Vermont, Virginia, Wisconsin.

Permissive systems: Colorado, Kentucky, Ohio, Utah.

Local systems: Delaware, Kansas, Louisiana, Missouri, Nebraska, Oregon, South Carolina, Tennessee, West Virginia.

[3] Direction of 67 pension systems reporting: Superintendent or commissioner 3, Board of Education 10, special pension board, commission, or committee 54.

Size of 51 special boards reporting: 3 (5), 5 (17), 6, 7 (15), 8, 9 (8), 11 (4).

Teachers representatives on 48 boards reporting: Minority (27): 1/6, 1/5 (2), 2/7 (2) 1/3, 3/8, 2/5 (8), 3/7 (11), 4/9; majority (21): 6/11 (3), 5/9 (4), 4/7, 3/5 (8), 2/3 (2), 5/7 (2), 3.

inauguration of seven-tenths of the systems (37 out of 52 reporting). This illustrates the difficulty of providing fully for the retirement of teachers who are not in position to contribute their full share of the expense, — the difficulty that is known as the problem of accrued liabilities.

In all the systems retirement is on the basis of from 20 to 40 years of service, most frequently 30 years (32 out of 80 provisions). About one-half of the systems (29 out of 67) make provision also for retirement on the basis of age, at from 50 to 75 years, most frequently 60 years, for both men (13 out of 26 provisions) and women (11 out of 26 provisions). Nearly six-sevenths of the systems (57 out of 67) have provisions for disability, usually a proportion of the full pension equal to the proportion of the full years of service completed before retirement.[1]

Teachers contribute to the funds in about six-sevenths of the systems (57 out of 67), most frequently (34 out of 57) 1 or 2 per cent of their salaries. In about six-sevenths of the systems (54 out of 67) public funds are supplied also, from incidental sources (46 instances), school (12), or special taxes (13), deductions from teachers pay (9), or, in nearly three-sevenths of the instances (28 out of 67), from direct appropriations. The public contribution is not related to that of the teachers in as many systems as would be expected (only 14 reported). Where it is so related it most frequently equals the contribution of the teacher (9 out of 14 reporting).[2]

Return of the teachers contributions in case of resignation is provided for in about one-half of the systems (30 out of 67), the refund being most frequently one-half of the contribution, without interest (19 out of 29 reporting). Return in case of dismissal is provided in about one-half of the systems (35 out of 67), this refund nearly always being (22 out of 34) all of the contribution without interest. Return in case of death is provided in about one-third of the systems (20 out of 67), this refund being sometimes one-half (12 instances) and sometimes the entire contribution (9 instances), usually without interest.[3]

The financial experience of these systems is, as has been said, yet brief. The representative salary (the median of averages ranging from $341 to $1337) of the teachers in the 63 systems reporting is $730 a year. The representative pension in these systems (58 reporting) is $500 a year (the median of averages ranging from $180 to $800). The representative total contribution on the part of the teacher is $510 (the median

[1] Service for retirement: 20 years (7), 25 years (21), 30 years (31), 35 years (14), 40 years (7).
Age for retirement: Men: 50, 58, 60 (13), 62, 65 (4), 70 (5), 75; women: 50 (2), 55 (2), 60 (11), 62, 65 (4), 70 (5), 75.

[2] Teachers contributions: 1/2%, 1% (24), 1-2%, 1-3%, 1 1/2% (5), 2% (16), 2 1/2%, 3% (4), 3-7% (2), 5% (2).
Public contributions: 1/2 of teachers, Rochester (New York); 1 1/2, Omaha (Nebraska); 1 1/2 or more, Topeka (Kansas); equal or less, Buffalo, Westchester County, New York; equal, New York City, New York State, Erie, Harrisburg, Philadelphia, Scranton (Pennsylvania), Pennsylvania; twice or less, Chicago; three times, Cohoes (New York).

[3] Refunds: In case of resignation: 1/2 of contribution or less, 1/2 without interest (19), 2/3 without interest, 3/4 without interest, all without interest (3), all with interest (5) — Erie (Pennsylvania), Connecticut, Massachusetts, New York City, Pennsylvania.
In case of dismissal: 1/2 or less, 1/2 (9), 3/4 without interest, all without interest (19), all with interest (5)—Erie (Pennsylvania), Connecticut, Massachusetts, New York City, Pennsylvania.
In case of death: 1/2 without interest (12), all without interest (4), all with interest (5)— Erie (Pennsylvania), Connecticut, Massachusetts, New York City, Pennsylvania.

of 25 averages extending from $250 to $1000), a frequent requirement being a sum equal to the first year's annuity. When it is remembered that various systems appropriate only an amount equal to the teacher's contribution, it will be evident that a considerable number of systems are providing funds that will pay pensions for two years only. There is general need, therefore, for further adjustment between the retirement privileges and the funds that the teachers are able, and the public is willing, to provide.[1]

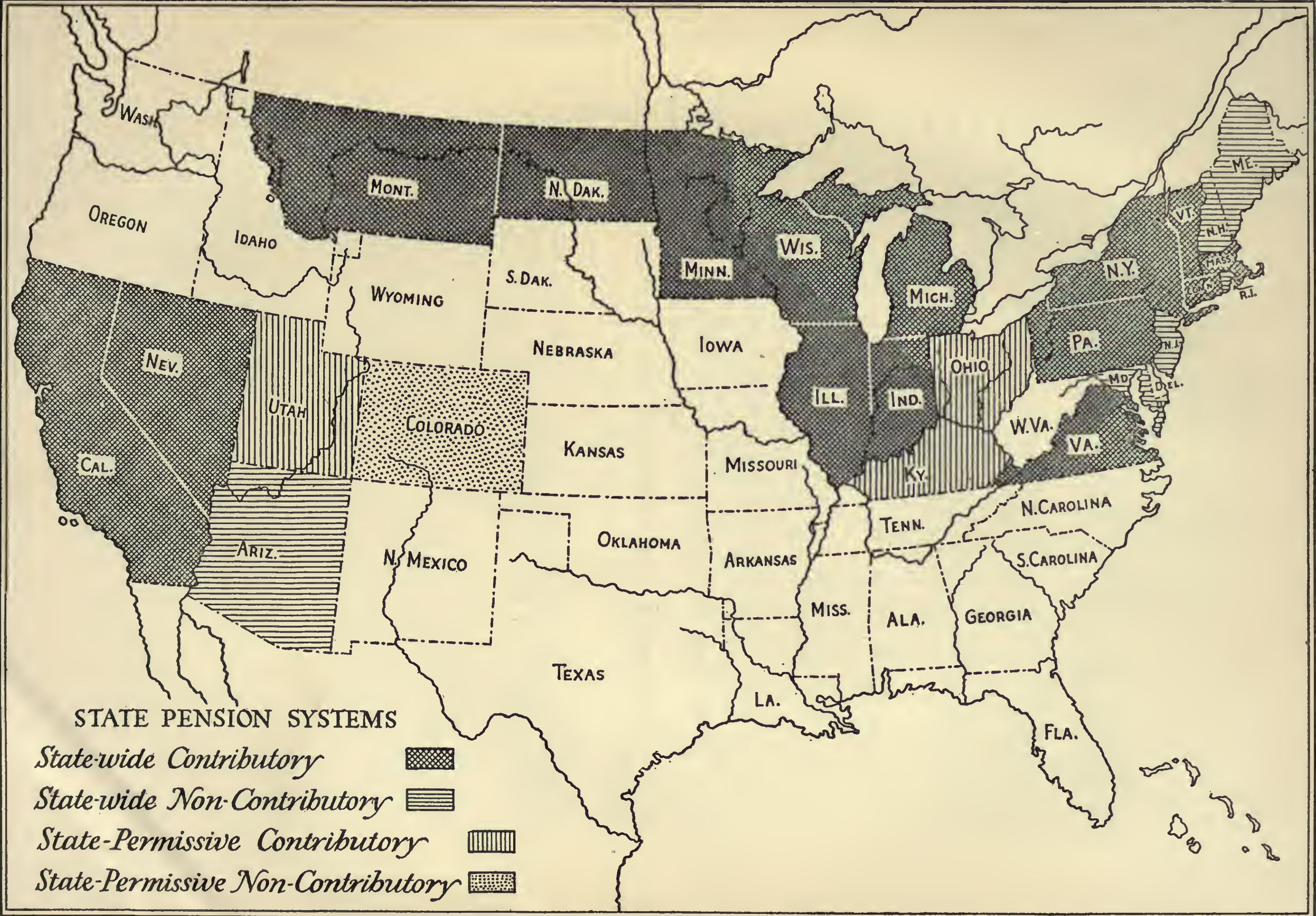
As a matter of actual experience, the disbursements of the former New York City system, which was established in 1894, began to be larger than the receipts in 1910. The Teachers' Retirement Fund of New Jersey, established in 1896, required increased income in 1899, 1903, and 1906, and its solvency is still in question. The system in Porto Rico, established in 1898, was abandoned in 1905. The Boston system, established in 1900, encountered deficiencies in 1914. The Indianapolis fund, established in 1907, almost met financial difficulties in 1914. The Maryland fund, established in 1908, had to increase its resources in 1912 and 1914. The Virginia system, established in 1908, had to reduce its pensions as early as 1912. The Cincinnati fund, established in 1911, had to reduce its pensions in 1914. The Illinois system, established in 1915, encountered a legislative investigation in the same year. Large privileges, small resources, and the lack of adjustment between the two, promise similar difficulties for numerous other systems.

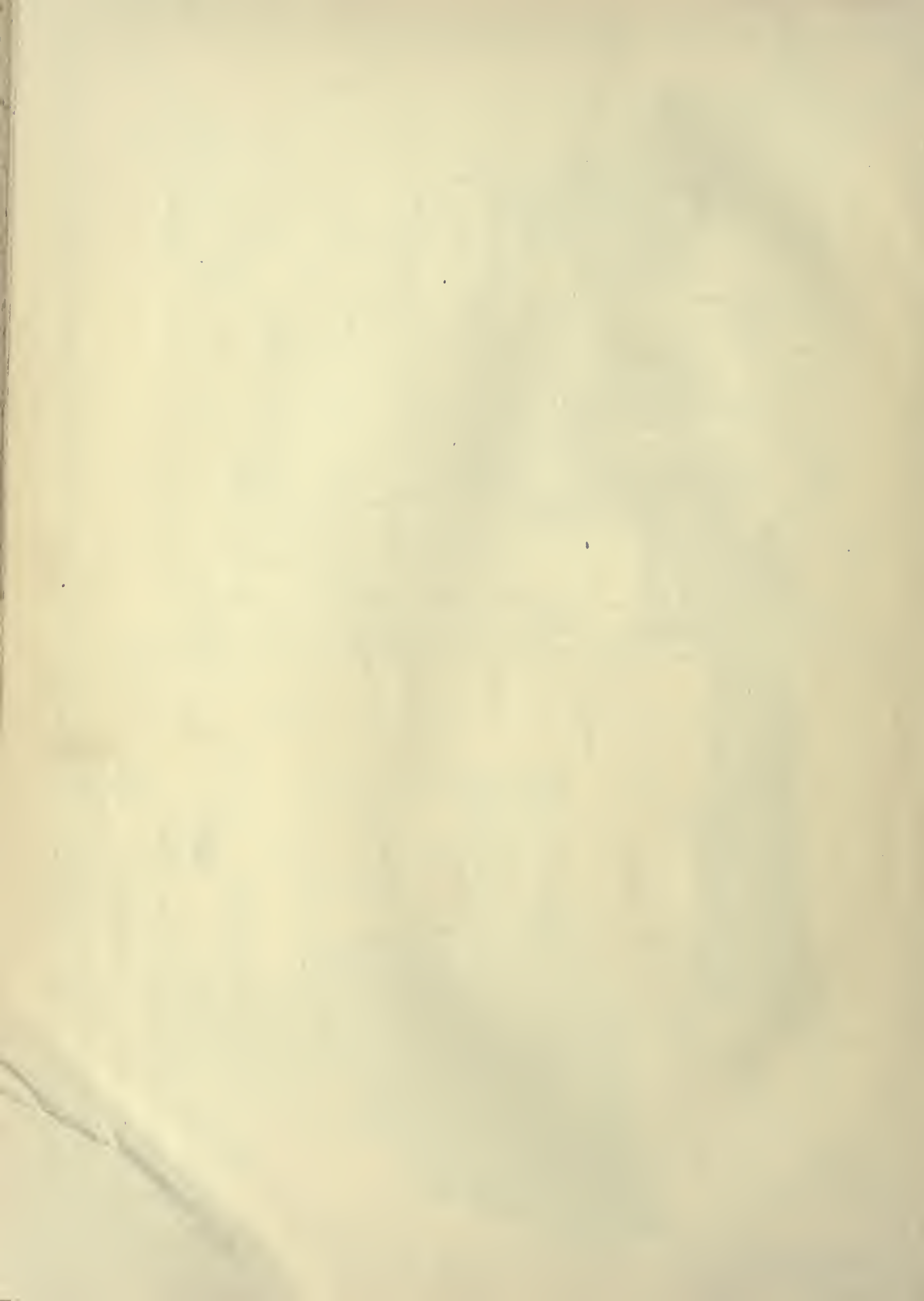
Meanwhile a safer and happier future for pension systems is promised by careful and comprehensive studies like those of the Massachusetts Commissions on Pensions in 1910 and 1914 and the studies made in New York City and Illinois in 1915, 1916, and 1918.

[1] Average salaries, 1915–16: $341, $381, $422, $430, $470, $486 (2), $521, $528, $545, $553, $557, $558, $561, $574, $580 (2), $598, $605, $624, $632, $652, $682 (2), $685, $689, $693, $702, $714, $721, $724, $730, $739, $747, $750, $751, $756, $765, $770, $778, $782, $784, $800, $821, $854, $860, $861, $866 (2), $881, $895, $946, $949, $967, $969, $989, $998, $1081, $1122, $1222, $1261, $1267, $1337.

Representative pensions: $150 to $250, $180, $200, $200 to $400, $200 to $500, $250, $250 to $600, $300, $300 to $600 (2), $300 to $800, $312 to $600, $330, $333 to $500 (2), $350 to $500, $360, $360 to $600, $400 (6), $400 to $480, $400 to $800 (2), $450 (2), $480 (2), $500 (10), $600 (10), $600 to $700, $750, $800 (5).

Average total contributions: $250, $270, $300 (2), $360 (2), $390, $400 (3), $425, $450, $500, $510, $540, $600 (3), $600 to $700, $610, $625, $650 (2), $800, $1000.


STATE PENSION SYSTEMS
State-wide Contributory
State-wide Non-Contributory
State-Permissive Contributory
State-Permissive Non-Contributory
WASH.
OREGON
IDAHO
MONT.
N. DAK.
S. DAK.
WYOMING
NEV.
UTAH
COLORADO
CAL.
ARIZ.
N. MEXICO
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINN.
IOWA
MISSOURI
ARKANSAS
LA.
WIS.
ILL.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GEORGIA
FLA.
S.CAROLINA
N.CAROLINA
W.VA.
VA.
PA.
N.Y.
N.J.
MD.
DEL.
VT.
N.H.
ME.
MASS.
R.I.



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[1] The publications of the Carnegie Foundation are distributed without charge.

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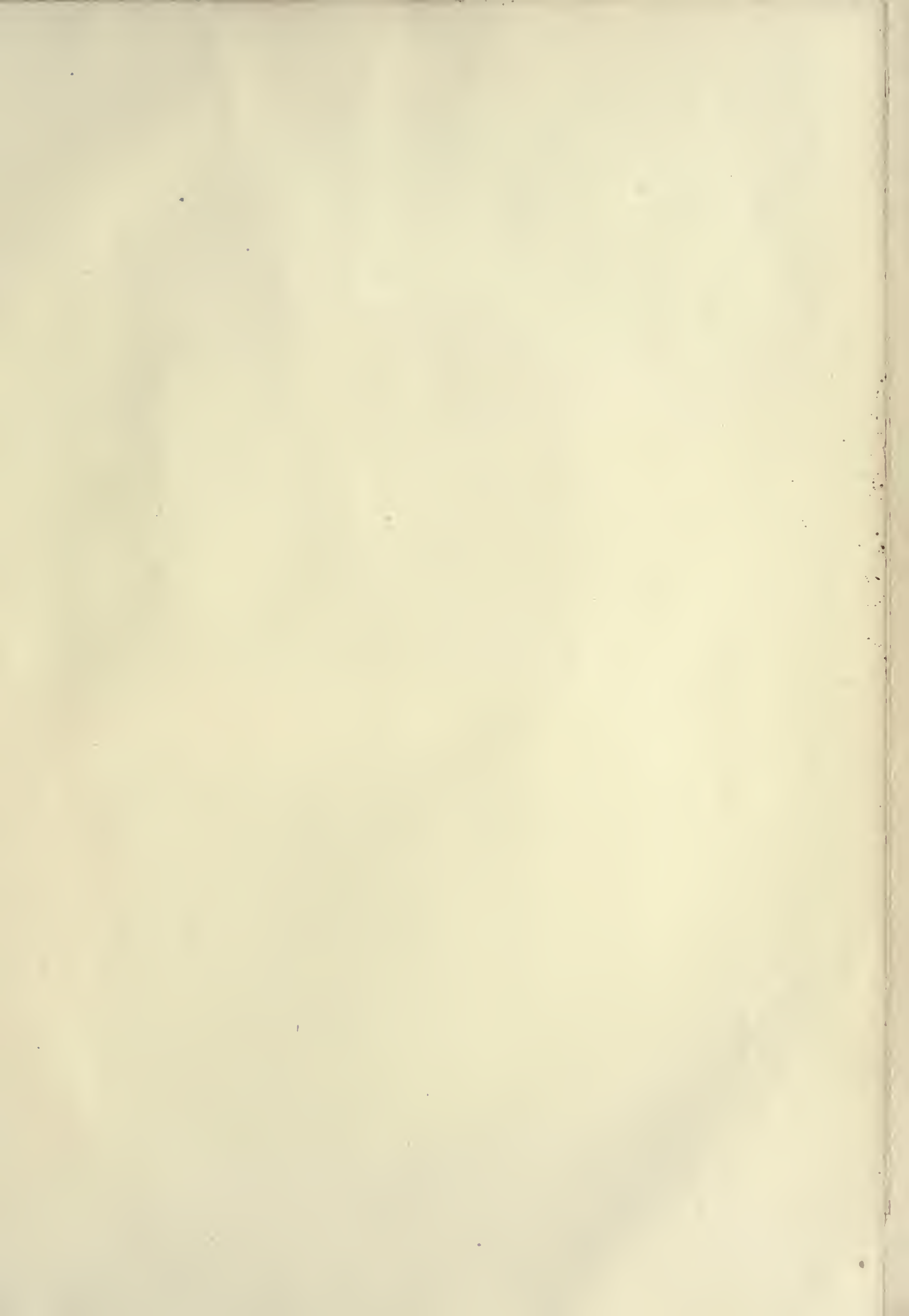

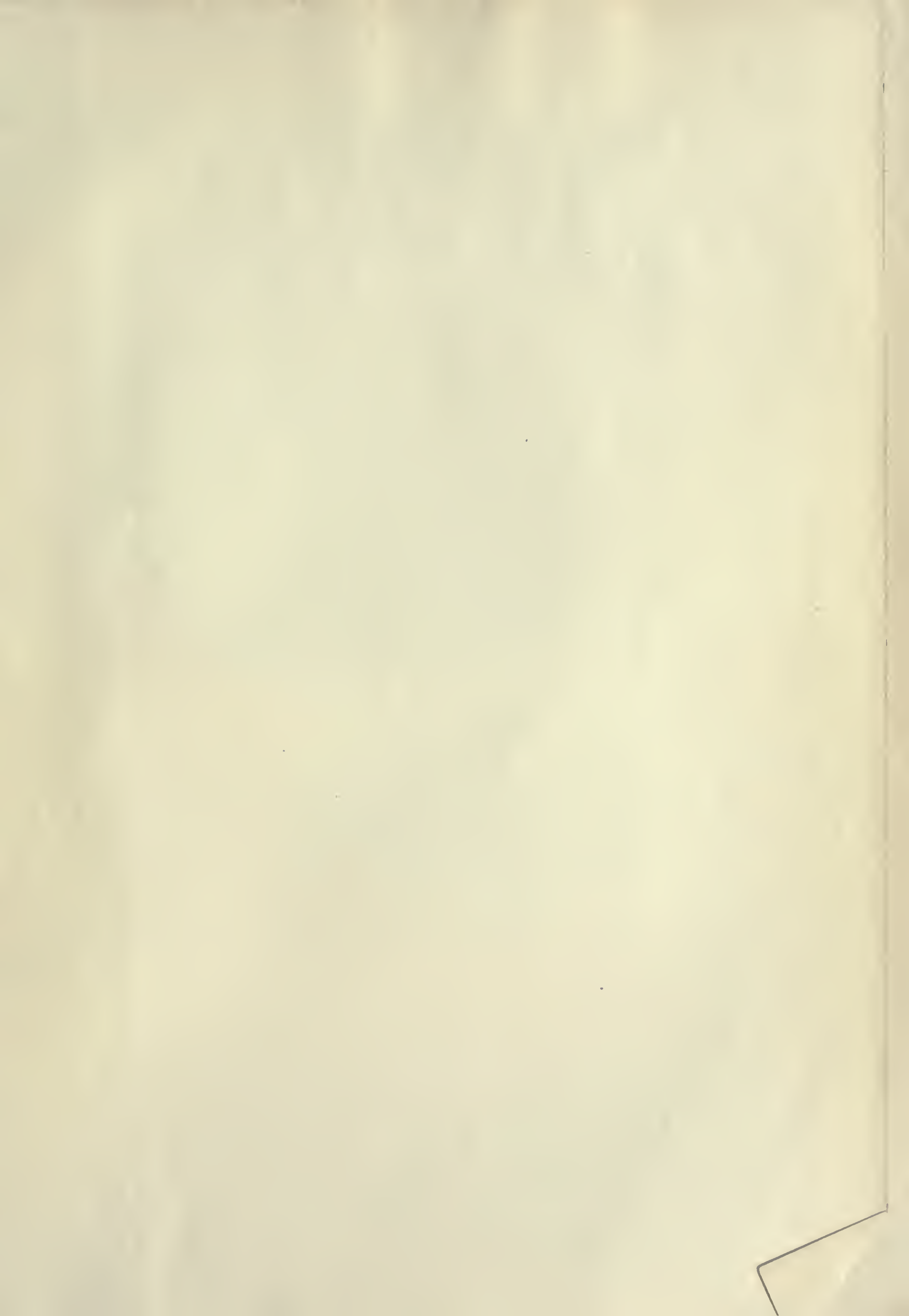

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