AMERICAN METHODS OF COMPENSATING PERMANENT PARTIAL DISABILITIES.

BY

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In one of my addresses before this Society, I had occasion to point out the difficulty of defining the province of actuarial science and my own preference for as broad a definition as possible, which would cover the entire domain of insurance science. There is a certain tendency in the casualty business to relegate to the actuary only such problems as require computations, whether arithmetical or more highly technical, and then only when the question involved is that of the rate—or broadly speaking the cost and price of insurance. Fortunately for the profession, however, even during its very short life, the Casualty Actuarial and Statistical Society found itself obliged to extend the sphere of its inquiries beyond mere computation and beyond the question of rates, and has begun to study scientifically various problems created in the interrelation between the casualty business and the entire economic and social body politic in which we live and work. Especially significant were the few efforts to extend our line of inquiry into the very substance of insurance—in the case of compensation, into a scientific analysis of the laws themselves, the benefits they grant, and other features of their application. It must be admitted that there was comparatively little accurate information on compensation theory when most of the American compensation laws were passed. A priori then, it would appear very probable that they would be full of shortcomings.

Anyone who has taken the time and trouble necessary to study the thirty-three acts in detail, will at once admit that the probability becomes a certainty, and that a very large book may be written about errors more or less obvious which all of these acts contain, beginning with bad spelling or faulty grammar, and up to provisions which are often economically unsound, and socially harmful. I know of no one organization in this country which is better able to subject these many acts, and the prodigious variety of these

provisions, to a careful, impartial, scientific analytic study, than is the Casualty Actuarial and Statistical Society of America. Studies like those of Mr. Michelbacher must therefore, it seems to me, be welcomed and encouraged on our programs.

One may readily recognize that on embarking upon this undertaking, an actuary may easily find himself on thin ice, and that a certain amount of tact will be necessary lest one run the chance of breaking through. A good many problems which must arise from the study of compensation legislation, are highly controversial; not only among the members of the Society, but also, and even more, among the various insurance organizations they are professionally connected with, a wide divergence of opinion exists, often accompanied by a certain bitterness or tension, because, underlying the clash of opinions held, there may be a very material divergence of economic interests concerned. These factors, however, influence the discussion of all such problems anywhere, and it is well to remember that if the Society is not responsible for statements made or opinions expressed in these meetings, neither are the particular types of insurance organizations or individual insurance carriers, with which the author of any paper may be connected. There is a very healthy attitude assumed by insurance carriers which is well expressed, I believe, in Mr. Cowles' aphorism "Let the state make the law, and the insurance company will make the rate," but that should manifestly not interfere with the individual insurance expert discussing or criticizing the law.

Since the final purpose of workmen's compensation is not to create business for casualty companies, not to stimulate mutual or state insurance, but to relieve certain causes of destitution among wageworkers, the final test of compensation must necessarily be not the provision concerning insurance, not administrative regulations, not the absence or presence of public rate control, but the compensation scale and its correspondence to the economic distress caused by injuries; and if the actuary be assumed to deal primarily in quantitative relations, the proper judgment of a compensation scale becomes largely an actuarial problem. If the proper solution of this problem depends upon statistical data, this again offers a point of contact with other actuarial problems.

It is a fact well known to all students of compensation matters, that in the thirty-three compensation acts in force in this country, no two are exactly alike. The same is true even if only the com-

pensation scales of the acts are compared, and all other legal and administrative provisions are disregarded. The comparative study of any one feature of the law becomes, therefore, a matter of great technical difficulty, and any problem must be divided and subdivided before such a comparative study is undertaken.

In this paper I intend to make but a brief review of the general principles underlying the compensation of only one class of industrial injuries—those known as permanent partial disabilities.

It will be readily admitted that these constitute the most important class of injuries from a social point of view, the most difficult to handle from an administrative point of view, and on the whole, perhaps the least satisfactorily handled in American legislation.

Individually, cases of permanent partial disability in the severity of economic consequences occupy a middle ground between fatal cases or cases of permanent total disability on one hand, and those of total temporary disability on the other. The latter is very much the more numerous group, but the effect of the injury being temporary, and the final result complete restoration of health and working capacity, the economic problems created are perhaps serious, but not necessarily grave and their solution, at least theoretically, does not offer any great obstacles.

On the other hand, permanent total disability is a very distressing condition, but fortunately one of great rarity. My assumption of about one tenth of one per cent. in the Standard Accident Table has already been criticized as excessive, and though I am not ready to admit it, it is nevertheless evident that in the total volume of industrial accidents, the cases of permanent total disability are destined to remain as isolated, rare cases. Moreover, a healthy tendency is already noticeable to provide life pensions for such cases in an increasing number of states.

Fatal cases, to be sure, present many distressing economic features, which are not always met by an arbitrarily limited number of weeks of compensation. But after all, in many fatal cases, this limited number of weeks may be sufficient to bring children to the age of self-dependence.

Permanent partial disabilities are much more frequent than fatal cases (according to the standard accident table, five times as frequent, and according to the statistical data of some foreign countries, even much more numerous). They create families of semi-dependents, they must depress the standard of living of thousands

of families, and blight the hope of advance for thousands of children. If the estimate of some 30,000 fatal accidents per annum is at all correct, and if the assumption of the Standard Accident Table is at all correct, then from 100,000 to 150,000 permanent partial disabilities must be incurred in this country. The workmen who do suffer them are not totally disabled, many of them may retain sufficient earning capacity to remain economically self-sufficient; others, however, may become partially dependent upon charitable or other outside relief, a consequence of industrial injuries which it is the direct duty of compensation laws to prevent.

If we turn to Europe, where most countries possess a rich experience in workmen's compensation, and where, after all, our own compensation movement has arisen, we find well-defined methods of compensating permanent partial disability, or at least one fundamental principle underlying it—and that is the principle of partial benefits for partial loss, to last as long as the disability lasts. The equity of such an arrangement is apparent. The fundamental provisions of the act determine how the economic loss sustained through the disability to earn wages should be apportioned between employer and employee, or perhaps more accurately, between industry and employee, or still more precisely, between society at large and the injured person himself. If the answer is "an equal share" we have a 50 per cent. compensation standard; if it seems fairer to decrease the injured person's share of the burden, the compensation rises to 60 per cent., 66⅔ per cent., 70 per cent., or even 80 per cent. of the loss. Be that as it may, this standard, once established, is applied to partial disability If the loss sustained is only 50 per cent. of the earning capacity, that loss serves as the basis for compensation, which thus supplements instead of entirely substituting wages.

As to the duration of these partial benefits, the same rule as to the total benefits at least theoretically applies: if the partial disability is truly permanent, *i. e.*, lasts for the remainder of life of the injured, the need of the compensation is evidently just as permanent.

It is true that in some countries commutations of benefits to lump sums are permitted and extensively practiced. That, however, raises an independent problem of lump sum settlements, their wisdom or desirability, methods of safeguarding necessary, etc., which had better be kept outside of the scope of this paper. It is suffi-

cient to state here that when the reduction of the earning capacity is slight, and the resulting compensation therefore, when expressed in weekly amounts, becomes almost nominal, so that it does not affect the budget substantially one way or the other, commutation of the provision becomes desirable for all parties concerned. But even, then, it must not be forgotten that the compensation becomes largely a psychologic balm to injured feelings—something compensation was not at all intended for, or at least something which is not the primary social function of compensation. It becomes a bonus for suffering and perhaps it may be argued that such bonuses are on the whole desirable. But evidently they are not important.

There is no doubt that the European method of partial compensation for partial disability presents its practical difficulties. The determination of the amount of compensation depends upon the determination of the degree of disability or loss of earning capacity, and the latter is not as simple as it might appear at first glance. To be sure, the final proof of the pudding is in the eating, and the loss of earning capacity should express itself in the actual earnings. But wage statisticians know that even the answer to the simple question—What is wages?—often presents serious difficulties, and still more difficult at times is the determination of the effect of each one of many conflicting influences upon wages. The normal wage curve of any worker is not a straight line throughout his life. On the contrary, it is a curve whose configuration is subject to dozens of various factors. Any exhaustive discussion of them at this place is quite impossible. But just to enumerate them —there is the influence of advancing age, the acquisition of experience, or loss of speed or dexterity, the effect of general health irrespective of the specific permanent injury, the effect of the season, of general trade conditions, of possible changes in the specific trade, etc., and in addition there are substantial differences between individuals in the power of adjustment, differences temperamental, physical or moral. Logicians have warned us against the general fallacy of the assumption "post hoc ergo utque hoc" and surely it would be dangerous to assume that all wage modifications which come subsequent to the injury sustained, are necessarily due to that injury; perhaps equally misleading would be the assumption that if the wage remains the same, no permanent harm has been done; the natural tendency of the wage to rise may have been destroyed.

Thus the difficulties of accurate determination of the degree of disability have been frankly stated. An additional obvious difficulty is created by the necessity of keeping the case open—in insurance language—for an indefinite period. But while these difficulties are real, they need not be used as evidence of the impossibility, or even impracticability of basing compensation upon degree of disability. At least in Europe, where these difficulties have been very clearly recognized, the method has not been abandoned, but practice has clearly established the following principles:

1st. That it is often impracticable to determine the degree of disability from actual wages only, and that expert opinion of the injury in relation to the industry becomes necessary.

2d. That subject to the right of reconsideration, the determination may often better be made ahead, rather than after the reduced wages have actually been earned.

3d. That in the absence of absolute standards, compromise or arbitration may often become necessary, as in all human controversies, and that in themselves such compromises do not represent any distressing condition, provided there is a common-sense system of procedure.

The application of these methods in Germany and other countries has often been criticized as cumbersome, complex, and difficult. But while all efforts towards simplicity and speed are legitimate, why should we expect the adjudication of these cases to be so simple? The social problems involved are complex. The purpose of compensation is not arithmetical simplicity or actuarial accuracy, but "social justice," much as this term has been abused. A wage worker, with a family of dependents, and with a definite standard of living, who suddenly, through an injury, finds himself a cripple for life, and with his earning capacity permanently reduced, represents a serious social problem. He must receive reasonable compensation, yet he must be encouraged in reasonable effort toward a complete adjustment, so as not to remain a charge upon society any longer than necessary. There must be no aristocracy of the crippled; malingering and valetudinarianism must not be stimulated and encouraged. It does not seem possible—at any rate, it did not seem possible to European theory and practice—to accomplish these results by ironclad rules and scales of benefits, in which individual idiosyncrasies are entirely neglected.

The peculiarity of the American methods of handling these cases

is just this, that we have assumed to be able to do what the European could not do; we thought we could solve or at least simplify this problem by a few legislative standards, and the appraisement of these standards represents an important social duty of casualty statisticians and actuaries.

The most destructive feature of the American methods is the so-called dismemberment schedule, perhaps more accurately designated as the specific benefit schedule.

It is scarcely necessary before an audience of this character to explain at great length what this term means. The essential feature common to all the schedules is a definite amount of benefits for certain specified permanent injuries, namely losses of extremities and parts of extremities, and also other injuries, to be referred to presently.

Introduced at first in the first state act to stand the test of the courts, namely the New Jersey Act of 1911, the dismemberment schedule has acquired almost universal application. Of the thirty-three acts at present in force, only six—those of California, Kansas, New Hampshire, Washington, and West Virginia—contain at present no dismemberment schedule. As far as California is concerned, the statement may need to be modified, because such a schedule (though with certain important modifications) was established by administrative authority. It is pointed out that in several cases, the original act contained no dismemberment schedule, but that it was introduced during a subsequent revision of the act. This is used as an additional argument in favor of such schedule.

One distinct feature of such a schedule was already referred to. The character of the dismembern[illegible] determines the compensation. In one or two acts (Alaska and Wyoming) this amount is altogether uniform—in lump sums. In Oregon it is absolutely uniform, because the amount of periodical payment is uniform. But in the remaining twenty-four acts, or thereabouts, the dismemberment schedule has another uniform feature: though the injury is admittedly permanent, and by presumption the disability equally so (and in fact though some minor dismemberments do not necessarily result in any permanent loss of earning power, most laws speak of all dismemberments as cases of permanent disability) and furthermore the disability in most cases only partial, the basis of compensation just the reverse of what the conditions call for—the full compensation for a limited time.

Into the details of the various dismemberment schedules, I have no time to go now, nor is it necessary, since all casualty statisticians are familiar with them in a general way, and a detailed knowledge is almost impossible. Suffice it to say that there never has been any scientific study made to justify these specific valuations, and there is no harmony or reason in the different valuations made of the same injury by different states, nor of the proportions which the valuations of different injuries bear to each other in the different acts. Everything is sheer guesswork, or rather the result of crude bargaining between the interests of the wageworkers demanding more, and the employing interests willing to give less.

But with all these numerous valuations, there remains the uniform principle—a limited benefit (often excessive at its weekly amount) for a permanent disability. At least subconsciously there must have been some theory underlying this unique method, discovered by New Jersey and adopted by almost all the other states. Of course, the student of the history of casualty insurance will recognize in this method the influence of personal accident and even workmen's collective insurance. But this historical explanation will hardly seem sufficient as a justification.

The theoretical basis of this method has been stated in the report of the U. S. Employees Liability and Workmen's Compensation Commission as the theory of adjustment or rehabilitation.

The theory claims that from every permanent partial disability, there is an eventual recovery (a statement, when literally taken, contradictory in terms, if not altogether nonsensical), or at least some readjustment, which makes the discontinuance of further compensation possible, and that the period of readjustment varies with the severity of the injury. The specific dismemberment schedule is intended to cover this period of readjustment.

Of this plausible theory, there is only one criticism to offer—that it isn't so. Of course, it is obvious that in many cases, especially of minor dismemberments, such an adjustment will sooner or later take place, with complete re-establishment of full earning capacity. But it is equally obvious—and our compensation acts are almost all guilty in not recognizing it—that in grave dismemberments, or any grave injuries, this rehabilitation never takes place, and the readjustment is from comparative comfort to a lower standard, to destitution or to pauperism and dependency—the sort of readjustment that it is the direct function of compensation acts to prevent.

And though the denial of the underlying theory is sufficient criticism, the American method of compensating dismemberments is equally faulty in other directions.

Assuming for a moment that readjustment or rehabilitation takes place, what reason is there to believe that it will take place in all cases with equal rapidity, depending only upon the surgical description of the injury? The answer is—no reason at all.

In European statistics we have a large volume of experience to base our conclusions upon. It is sufficient to glance at the detailed Austrian data of nature of injury and their degrees of disability as digested in the 24th Annual Report of the U. S. Commissioner of Labor. The data have often been criticized on the plea that the awards in Austria are very much more liberal than awards for similar injuries in this country are likely to be. That may well be so, whether the criticism implied in this comparison should properly be directed against Austria or our own country. What is clearly indicated by the study of those figures is the wide margin of variation in the economic results of the same surgical injury, or rather of injuries described in the same surgical terms. Not only that, but the effect of at least one factor, that of age, is statistically demonstrated beyond any shadow of doubt, while as to the strong effect of the factor of occupation there can be no doubt in the mind of any man at all familiar with productive processes.

The disregard of these factors in our dismemberment schedules would be sufficient to condemn them even if their essential principle had not been in entire variance with the facts in the case.

But even within the limits of the same age and occupation, a definite margin of fluctuations should have been provided for. After all, the classification of the dismemberment has in view only the ultimate surgical result of the injury, but not its course, character and gravity. An arm amputation may heal in two weeks, another may take months and months in healing, meanwhile creating total temporary disability. In almost every case, the partial disability resulting from dismemberment must be preceded by some period of total disability. In some cases, however, this preliminary period may be so prolonged as to encroach in a substantial way upon the so-called period of adaptation or rehabilitation, and leave very little compensation for the partial disability itself.

Again the situation is so obvious that its disregard in most acts is another evidence of the glaring incompetency of our compensa-

tion legislation. Only in five acts (New Jersey, Illinois, Massachusetts, Rhode Island, and Texas) is a special provision made for additional benefits for the total temporary disability preceding the partial disability. In fact, it is not difficult to conceive the situation when because of the existence of complication, such as infection, even the total disability period may exceed the period of compensation established in the law; and in such cases the "easy and convenient" dismemberment schedule simply serves as a limitation of the benefits; for only in two states (Colorado and Wisconsin) do we find the specific provision that total temporary disability payments may continue beyond the limit established in the law.*

Finally the Louisiana Act goes the limit, as it were, because the dismemberment schedule is simply the maximum limit of compensation, which stops as soon as the injured workman returns to work, no matter at what wage.

Of course, all these statements do not apply to Massachusetts, Rhode Island, and Texas, where the small dismemberment benefit schedule is simply a bonus payable in addition to compensation for total or partial disability.

In explanation of these peculiar methods of compensation, ignorance of compensation experience must be largely held accountable, yet ignorance is not the entire explanation. Back of it is the desire not so much for easy and simple methods, as for low cost of compensation. An actuarial comparison will readily demonstrate that the payment of full benefits for a limited number of weeks amounts to very much less than a life pension for the proportionate amount of compensation. But even if it were agreed that the cost must not be increased beyond the present standards, the wasteful, incompetent, socially undesirable way of paying the limited amount is altogether indefensible. Since the weekly amount of compensation remains the same, though the disability is partial only, the situation must necessarily arise when the combined benefit and earning equal or exceed the full normal earnings of the time preceding the injury. What social justification is there for the creation of these temporary artificial standards, which in one certain day must be suddenly reduced to the subnormal level based only upon impaired earning capacity? Surely a wage worker who has lost one-half his earning capacity would be much better off, if for

* This seems to be also true in California, though the language of the law is not decisive.

400 weeks he was in receipt of 83 per cent. of his normal earnings than if he gets 116 per cent. of his earnings for 200 weeks, and then only 50 per cent. for the 200 weeks following.

There is thus very little justice, equity, economy or even ordinary common sense in the most lauded dismemberment schedules. How about other cases of permanent partial disability? Many of the members of the Society may remember the acrimonious discussions as to the proportionate number of these so-called "other" permanent cases, and the criticisms to which the Standard Accident Table was and is still being subjected for its assumption of 2,442 out of 100,000 accidents. I shall not carry the discussion over into this meeting. Whether the figure in the table will hold, I have no means of being certain. I am certain, however, of the utter fallacy of those statistics which have emanated from many sources and which seem to claim that no cases of permanent partial disability except dismemberment occur. Out of 257 different kinds of permanent injuries listed in the California schedule, only 105 are cases of dismemberment. Surely the other 152 varieties are not limited to California soil. We shall presently see the reason for the disappearance of all injuries of this kind from the statistical returns of other states.

In almost all the acts, special reference is made to those other cases of permanent partial disability, and in some, also, temporary partial disability. It may be stated in passing that this careful distinction which is found in some acts between temporary and permanent disability is not only misleading but also naïve, considering that though the injury may be permanent, the compensation is only temporary and often the time limit for compensation is the same whether the injury is permanent or temporary. In fact in most acts, though special reference is made of permanent partial and temporary partial disability the provisions for both are identical, and the duplication of the language is evidence that the language and form of the European acts were followed, when the spirit was entirely disregarded.

But when the treatment of dismemberments (or specified injuries) is compared with the treatment of "other" permanent partial disability cases, a very curious contrast is obtained. For this latter group the European principle of reduced or partial weekly benefits is preserved. It is true that with the exception of California, West Virginia, and perhaps New York, and one or two other

acts, either time or money limits are placed upon the compensation for these cases, but outside of this peculiar American limitation (the motive behind which is so simple that it does not need any elucidation) European precedents are followed, at least in theory, or on paper.

Much as we prefer this method, as a more equitable one, it must be admitted that the distinction between the two groups of permanent disability cases, dismemberments and other cases, is a most illogical one. Why then two entirely different principles in application to cases so near each other? If there is anything in the theory of readjustment and rehabilitation, why should its application be limited to dismemberments only? As a matter of common sense, the distinction should perhaps have been the other way: for an unhealed fracture may eventually unite, and a stiff finger may through expert treatment become somewhat more pliable, but nothing is so sure as that a lost arm or leg will never grow again.

As a matter of fact, the distinction exists in theory a good deal more than in practice. The dismemberment schedule is a misnomer, because in many states many other injuries are covered by the same broad phraseology. As already stated, the usual dismemberment schedule covers loss of arms, hands, fingers, legs, feet, or toes, as well as loss of eyes. Most of the acts (16 or 17) also cover loss of vision, 8 acts also loss of hearing in both ears, 4 states even the loss of hearing in one ear. One or two states even cover the loss of nose and external ear, while Nebraska, Hawaii and Pennsylvania only include major dismemberments, and no loss of fingers or toes. But in addition two states (Massachusetts and Minnesota) make permanent loss of use of any member equivalent to its loss, and ten more states contain a similar formula limited to major injuries (loss of use of arms, hands, legs or feet), three more assert that permanent and complete paralysis is equivalent to loss, and two acts insist that ankylosis or contractures which make fingers more than useless (whatever that may mean) is equivalent to loss. Thus some 17 out of 27 acts have some "loss of use" provision, which materially affects the respective spheres of activity of the two systems of compensating for permanent partial disability.

This does not conclude the story of the encroachment of the dismemberment method upon the so-called "other" cases. When we study the provisions in regard to these other cases, we find the following striking situation:

1st. There are at least two acts (Alaska and U. S. Federal Employees Act) which absolutely fail to recognize any cases of permanent partial disability except dismemberments. How these cases will be adjudicated in Alaska, I do not undertake to say. Under the federal act the peculiar situation exists that some partial disabilities are compensated up to the full amount, while others are not compensated at all.

2d. There is another state with a very crude system of lump sum settlements—Washington.

3d. In several states (Iowa, New Jersey, Oregon, Wisconsin and Wyoming) there is an explicit provision directing that all these cases shall be compensated in proportion to dismemberment cases.

Of course, the theoretical basis of such methods is no stronger than that underlying the whole method of specific injuries. The duty which devolves upon administrative or judicial bodies in settling these cases under such a provision is very much different from the duty which European arbitration commissions must fulfill. It is one thing for persons expert in a trade to agree upon the degree of disability caused by a specific injury; and quite another to speculate upon the quantitive relationship between one injury and the other, especially if the injuries do not affect the extremities to which the enumerated specific injuries are usually limited. The result is still more guesswork, and even the opportunities to gain the necessary knowledge from experience have been thrown away.

This method of assimilating all permanent partial disabilities to "fractional dismemberments," as it has been called by some, is specifically prescribed in a few states only, enumerated above. But there is strong reason to believe that the extension of this method is much wider than the mere language of various acts would seem to indicate. Few states as yet publish any compensation statistics, and even from the public reports so far available, little information as to this point can be obtained. But so far as my personal knowledge goes, I have strong reason to think that even in New York, all partial permanent disability cases, not dismemberments are compensated for either as dismemberments (under the "loss of use" clause) or in proportion to dismemberments, as if the New York Act contained a clause similar to that in New Jersey. As a matter of fact, there is no such clause in the New York Act, and there is little justification in the English language for interpreting "loss of

use" as meaning "impairment of usefulness," and one cannot escape the suspicion that on appeal to the higher courts, this method of compensating permanent partial disability may be declared contrary to the spirit of the law.

The objections used against this application of the New Jersey provision to the New York Act are usually met by the argument, that if this had not been done, there would result the anomalous situation of the lighter permanent injuries (not dismemberments) receiving more compensation than the serious dismemberments. That such a situation would appear illogical may be readily admitted, but unfortunately this is just the situation created by the law, and one may question the wisdom of modifying or destroying explicit requirements of the law by administrative action.

Since compensation insurance, and therefore adjustment of compensations claims, is not limited by state laws, it is quite likely that the same practice has developed in other states as well, and when in the adjustment of these permanent partial disabilities, no such assimilation to dismemberments takes place, a common method is a lump sum settlement—not an actuarial commutation of future payments due under the law, but a settlement by mutual agreement, approved (in those states where such approval is required) by the existing administrative board, or commission. If the legal requirements outlined above are often a serious reflection upon the quality of our law-making, the encouragement of lump sum settlements, by many if not most of our accident boards, is no less distressing. The social efficiency of these all too frequent lump sum settlements is a matter of grave doubt and would require careful inquiry.

As against these general types of compensating permanent partial disabilities, two distinct types require special consideration; the California system (followed to some extent in the new West Virginia act) and the Massachusetts system, the latter of which has also been adopted in Rhode Island and Texas. These two systems have also been frequently discussed and compared and both have their enthusiastic supporters.

The California method has already been described in a paper read before this Society by Mr. Michelbacher.* The remarks directed against the California method need not be taken in a spirit of criti-

* Vol. I, page 257 of the *Proceedings*.

cism of that paper, in which the principles of the well-known California Act have been clearly and accurately described.

The California Act ostensively contains no dismemberment, or specific injury schedule. There is, therefore, absent that very illogical method of drawing an artificial distinction between one class of injury and another. In addition the California Act is superior to the other acts in two distinct points; it clearly requires that due consideration be given to the age and occupation of the injured, in determining the degree of permanent disability caused by any injury. Finally it adopts the rehabilitation theory within certain limits only, establishing light pensions for permanent disabilities over 70 per cent. While all this must be quoted to the credit of the California Act, it nevertheless fails to meet the requirements of a scientific method of compensating these cases. While a good deal is said of the degree of disabilities in percentages, nevertheless the compensation is granted, not in the weekly amount, but in duration of the full weekly benefit. At least for injuries up to 70 per cent., by a purely arbitrary standard, four weeks compensation is allowed for each degree of disability. The same childish faith in the universal truth of the rehabilitation theory is evident, and by implication all permanent disabilities under 70 per cent. are announced not to be permanent at all.

It is true that at certain points the rehabilitation theory is abandoned. If the disability is appraised to exceed 70 per cent. a life pension is granted. But the amount of it is ridiculously small. After the first 240 weeks the pension is 40 per cent. if the permanent disability is total, decreasing by 1 per cent. for every degree of disability down to 70 per cent., when the pension is only 10 per cent. of the earnings.

What is the theory underlying these quantities? Why should the compensation suddenly decrease from 65 per cent. to anywhere between 10 per cent. and 40 per cent. in these cases, and the total income from a possible 95 per cent. (65 per cent. compensation plus 30 per cent. earned) to only 40 per cent. (since the pension is made equal to 40 per cent. minus per cent. of remaining earning capacity)? Here another singular hypothesis is encountered, a theory actuarially ingenious, but socially often without any foundation in fact. It is assumed first that a married employee requires for his own personal use only 40 per cent. of his earnings, and his family the remaining 60 per cent., and secondly, that within the 240 weeks

the family may be sufficiently rehabilitated so as not to require any additional social provision. The 240 weeks is assumed to be sufficient for such rehabilitation simply because this is the standard of compensation for fatal injuries. The California legislators may still need to be taught that two wrongs do not make a right. As a matter of fact in quite a number of states, the period of compensation for fatal injuries has been extended to 400 or 500 weeks; life pensions to widows and pensions to children up to age 18 is the standard in New York. With one or two exceptions the California limit of 240 weeks for fatal injuries is the lowest in the country, and just because it happens to be so low is no evidence that family rehabilitation, for some climatic reason, takes place quicker in California than anywhere else in the United States.

Waiving aside this more than doubtful theory, the fact remains that after the expiration of 240 weeks, or only a little over 4½ years the workman, totally permanently injured, received 40 per cent. of compensation, and workmen suffering an injury of 70 to 90 per cent., from 10 to 30 per cent. of their wages, or 14.3 to 33.3 per cent. of the loss of their earning capacity.

All of this is, however, a criticism of the law and not of the the California or the Whitney schedule, which has already been frequently discussed by actuaries. Perhaps, it is as unnecessary, as it is impossible, to go into further careful consideration of this schedule, though the claims made for it rather invite criticism. The schedule aims to carry into effect the provisions of the act mainly as to effect of age and occupation. It is based partly upon much careful thought and study, partly upon certain fundamental assumptions as for instance that the effect of age is a simple arithmetical factor uniform for all ages. There is no way of checking either this fundamental assumption nor the other decisions of judgment, so that it is as difficult to attack them as to defend them. Of course, the entire schedule is somewhat misleading because it speaks of degree of disability when in reality weeks of compensation are meant, and thus a subterfuge is established, perhaps legally necessary, but a subterfuge nevertheless. If we say: this injury will permanently disable a man of 50 by about 50 per cent. but a man of 20 only 30 per cent., that is a statement which has a definite meaning. In Professor Whitney's schedule, these figures are meant to say that the man of 50 will rehabilitate himself from the result of this injury in 200 weeks, and a man of 20 in 120 weeks. That

may or may not be true, but it is a statement of an entirely different meaning. As a matter of fact, what the statement means in real life, and not in academic discussion, is something entirely different —it says: when receiving such an injury the man of 50 shall receive compensation for 200 weeks, and the man of 20 for 120 weeks.

Now the most important objection to the schedule is not the possible error in this or that specific assumption, but the underlying theory that it is possible and desirable to construct such automatic methods of appraisement, especially at this early stage of compensation experience. For it would seem far better that instead of mathematical assumptions, we had numerous observations of facts, instead of actuarial accuracy, some consideration for the idiosyncrasies of life. All schedules, not excluding the California one, remind me strongly of medical treatment by correspondence, or printed recipes in newspapers. Modern social thought has recognized that economic and social diseases, like bodily diseases, require individual treatment.

A striking contrast is presented by the Massachusetts, Rhode Island and Texas systems, and it is no mere coincidence that in a recent report of the Massachusetts Industrial Accident Board, a comparison between the Massachusetts and California systems was made. Of course, in recognizing the necessity of light pensions at least in severe permanent injuries, the California Act is superior to the Massachusetts Act. But outside of that, the Massachusetts type of act (with its imitations in Rhode Island and Texas) deserves the most serious study because of the clear recognition of the principle of partial disability and the necessity for partial compensation.

Of course, it will be recognized that in this brief analysis, only the written word of the law has been covered. The actual application of the law is an entirely different and much more difficult matter. Some idea of the tendencies of actual administration may be obtained from decisions and awards, already available for several states. But after all, the result of such study must be far from decisive—no more than a tendency can be observed. Only through careful statistical reports giving full information as to the manner of claim settlements and amounts of awards, can a complete picture be obtained. And unfortunately such reports are still largely lacking. Furthermore, a critical estimate of such awards and of the benefit scales upon which they are based (or pre-

sumed to be based) will only be feasible if, in addition to awards, the physical conditions underlying them will also be studied statistically. In this direction lies a new opportunity for the compensation actuary and accident statistician; not only for rate purposes must he continue to pursue his investigations, but also for the acid testing of the efficacy of our compensation legislation in the light of social results. Specifically, this opportunity presents itself to actuaries and statisticians connected with supervisory government institutions. The technical outfit of the accident statistician is gradually being perfected. In the skillful and honest hands of the impartial student of social statistics, this outfit may become an instrument of great social weal.