

# THE INSTITUTE OF ACTUARIES

## PERMANENT SICKNESS INSURANCE

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THE subject of sickness insurance does not appear to have been previously discussed before this Institute except in relation to Friendly Societies and the National Health Insurance Act. There is, however, a most comprehensive paper by Mr W. A. Robertson, the present President of the Faculty, in the *Transactions*, Vol. XIV, page 21. Disability in the sense of long-term sickness insurance has been considered on several occasions, but purely as an added benefit to life assurance contracts. The results shown by the American offices, who at one time transacted a large volume of this business, have been anything but encouraging.

Permanent sickness insurance is a class of business based on friendly society principles, but transacted by an insurance company. Although analogous to life assurance it is at present classed as "general" business, but it is at least honoured with an individual status in the draft Insurance Undertakings Bill, which followed the Clauson Report of 1927, but has not yet become law.

The word "permanent" differentiates the contract from the sickness and accident policies issued by very many of our insurance companies on an annual renewal basis, under which are granted death benefits, payments for loss of limb, and a weekly benefit for a limited period during incapacity. Such contracts can, however, be terminated by the issuing company at a renewal date, or even more arbitrarily, and thus give a purely temporary protection. The "permanent" policy differs from such an "annual contract", since once it is issued it must continue to a fixed age or until the previous death of the insured. Generally speaking, the only grounds on which the issuing company can cancel the contract are fraud, non-payment of the premium or permanent residence abroad. This feature makes it essential that the premiums should be actuarially sound and that the risks to be insured should be very carefully selected. A bad claim under a life policy involves payment of the

sum assured once only. A bad sickness claim may mean an annuity for perhaps 30 or 40 years, and the limit of the risk is the weekly payment for the whole duration of the contract.

The history of sickness insurance is bound up with the development of friendly societies, and their principles are still followed very closely. There is, however, a great difference between the operation of an insurance company transacting a business, and a local friendly society, which, at any rate in theory, is a compact body whose members are under relatively close observation. Sickness insurance involves a very large moral hazard and must be closely controlled. It is probably on this account that Friendly Societies, although in early days conducted in a haphazard manner, have survived to occupy the very important position which they do to-day.

According to the Registrar-General's Report of 1929 the oldest friendly society still on the Register at 31 December 1928 was the Corporation of Carters in Leith, established in 1555. The oldest sickness insurance company still transacting business is the Century, which was founded as the Sickness and Accident Assurance Association in 1885. It is interesting to know that its associated office, the Friends' Provident, was instituted in 1832 as a friendly society restricted to "Members or persons in profession with the religious society of Friends, commonly known as Quakers".

My own office started in 1884 as a friendly society and did not become a company until 1920. It was originally formed at a meeting of the British Medical Association and still restricts its membership to members of the medical and dental professions. The other companies transacting sickness business have added it to their activities subsequent to their formation.

#### TYPES OF BENEFIT

In referring to sickness insurance I imply the full cover of "All Sickness and Accident". It is neither desirable nor usual to issue a policy for sickness only, since the dividing line is in many cases far too obscure. The complications which may follow an accident—pneumonia, thrombosis, septicaemia and so on—may or may not be covered by a pure sickness policy, but as regards one for sickness and accident there can be no question.

There are two main types of benefit—immediate and deferred. The first gives payment from the commencement of incapacity and the second excludes a certain number of weeks. Deferred benefit is thus similar to the disability benefit associated with life policies.

There is no waiting period for immediate benefit and a claim can be made—and is sometimes made—within a few days of the issue of a policy. Benefit is not payable for less than 7 days' incapacity and is reduced to half-pay after 26 consecutive weeks. This follows the friendly society system, and the original idea of inducing a man to return to work when his benefit drops is still effective. In course of time I feel that irreducible policies will become general, and it will be interesting to see what effect this has on the sickness experience after 6 months. However desirous an office may be of keeping to the reduction of benefit, the element of competition arises just as it does in other types of business. If an insured has £10 per week with office A and this reduces to £5, he will go to office B and take a further policy for £5 per week with no benefit for the first 6 months. The result is that office A must relax its pious endeavours to insist on the deterrent reduction, or lose the business.

It might be said that the solution is to discontinue the issue of deferred policies, but they form a very important part of the business. They are designed primarily for those in salaried positions who will continue to draw their salary for a certain period and do not require sick pay until it ceases. The general periods of deferment are 3 months and 6 months. In some cases policies are issued excluding the first 12 months—in others only the first two or four weeks. The latter are usually taken as a cheaper substitution for the immediate benefit policy, where it is felt that short illnesses will not have a serious effect on the finances. With such short periods of deferment there is usually a reduction to half-pay after 26 weeks' full pay.

In the case of immediate benefit policies with reduction, there is generally a clause linking up claims within a period of, say, 6 months. Thus if there is a claim of 16 weeks' duration, and after 5 months a further claim is made, this is treated as a continuation for the purpose of computing half-pay. Hence only 10 weeks of the second claim are paid at the full rate. This applies irrespective of the nature of the illness and the number of claims, and there may be six

or more different claims linked in this way simply because there is no gap of more than 6 months between any two. Further, if a claimant has been reduced to half-pay, any claim within 6 months continues at half-pay, so that a persistent claimant may wait years before he is eligible again for full pay. In some cases the linking-up period is 12 months, which makes the condition even more stringent. The linking-up process does not apply to deferred benefit policies and if a claimant returns to work and breaks down again he must wait until his full deferred period has elapsed before making a fresh claim.

The previous remarks will clear up the common misunderstanding that only a total of 26 weeks' full pay can be claimed. This is not so, since the policy reverts to full pay at the end of 6 months' freedom from claim, however long the half-pay may have been drawn.

A further point arises from the linking-up clause, viz. that the effect of an irreducible policy cannot exactly be achieved by taking a combination of immediate and deferred benefit. During a long illness our hypothetical policy for £10 per week will reduce to £5 after 26 weeks, and the supplementary policy for £5 will then come into operation. If, however, a previous claim has been made within 6 months the reduction will take place before the deferred benefit starts, since the latter benefit can be claimed only after 26 *consecutive* weeks. Similarly, at the end of a long claim the insured may go back to work for 3 months and then break down again. Immediate benefit can be claimed at the half-rate, but the deferred benefit cannot be claimed until the member has been ill for a complete 26 weeks.

#### DEFINITION OF INCAPACITY

The definition of incapacity varies with different offices but the one essential is that the claimant must be *totally* incapacitated. The most general definition is "such total and complete incapacity by reason of sickness or accident that the assured is able to perform no part whatever of his own or any other occupation". Some offices omit the words "or any other", but stipulate that the insured must not engage in any other occupation. My own office, dealing with a specialized class of life, is able to restrict the incapacity to "own occupation" and allows the insured to take up some other occupa-

tion, provided that it is an entirely fresh one. In this case the sick pay is reduced in the proportion which the loss of income bears to the original income. An actual example of the operation of this clause is that of a member who became completely crippled. He was without doubt totally incapacitated and drew benefit for some years. He was then able to obtain some supervisory work which could be done sitting in a chair and took this up in order to give him some interest in life. With the ordinary definition of incapacity such a course would debar him from benefit, but as a result of the clause the benefit he was able to draw was only slightly reduced. His original income had been £1500 per annum; his new income was £200 and benefit was reduced to  $13/15$ ths of the original amount.

Such a clause is generous, but it has the effect of giving the chronic claimant an incentive to take up some occupation, however slight. With a complete bar in the definition he would probably continue to draw full pay and make no effort.

It might be said that the condition allows payment for partial incapacity, but it is stipulated that the new occupation must be entirely different from the ordinary occupation as stated in the policy. Partial incapacity cannot be covered in a permanent contract because it is impossible to distinguish between total and partial incapacity. The point is raised time and again in dealing both with new business and with claims. There is no satisfactory solution except that if any attempt were made to cover partial incapacity the premiums would have to be greatly increased. It may seem unfair that a man capable of earning £4000 per annum is reduced to an earning capacity of only £1000, but the policy is not one of indemnity, and secures a fixed weekly payment during total incapacity.

This exactly negatives the remarks made in the last paper on disability insurance read to the Institute—that of Mr E. E. Rhodes entitled, “Is disability insurance practicable?” (*J.I.A.* Vol. LXIII, page 115). His first suggestion for a practicable contract is that it should be one of indemnity, and his proposed incapacity clause reads “The insured will be regarded as totally disabled when... his average monthly earned income for a period of 4 months has not exceeded one-fourth of his former earned income...” This would be looked upon as partial incapacity in this country and no benefit at all would be paid.

Following on Mr Rhodes I give these suggestions for success in writing permanent sickness insurance:

(1) The contract must cease entirely at age 65 at the latest.

I have little doubt that the losses suffered by the American Offices through disability insurance are due to continuing benefit so long as incapacity lasts, if it commenced prior to age 60 or 65. Very heavy claims were made for incapacity just before the limiting age and the companies are still paying huge sums virtually as pensions to those who became ill just when they were too old for any useful work, even if they had been fit. This is a striking case of the moral hazard which is ever present in this business. There is a rapid increase in the rate of sickness at old ages, and this is naturally accentuated when large benefits are available.

(2) The business must be very carefully underwritten, not only medically but in respect of moral risk and particularly of occupation. I believe that occupation is the vital factor in the selection of sickness risks and that the secret of success in the business is to insure only the man who has an incentive to get back to work. A master man who has others to carry on while he is ill, or one who draws a salary whether he is working or not, is a potentially bad risk for sickness insurance. Without any intention of dishonesty he will take an extra week to convalesce simply because it will probably do him good without affecting his pocket. The man who depends for his living on his own work must get back as soon as possible, and although a reasonable period of convalescence must be allowed, there is not likely to be an unnecessary prolongation of benefit.

Doctors and dentists who are insured by my own office may be considered bad risks medically as they are always in touch with disease and infection. As an offset to this they cannot be ill and avoid the loss of patients without paying a *locum* to carry on. I may appear to stress this aspect too much, but I am convinced that it is all-important. As a practical illustration, it is our practice to limit those holding salaried appointments to deferred benefit policies. It often happens, however, that a young man may take up a hospital post after some years in general practice, and that he has already taken an immediate benefit policy. If he catches influenza he will often be given a month's sick leave and a certificate will be sent to the office to that effect. It is impossible to refuse

such a certificate, but it is probable that the same man in general practice would be back at work in 2 weeks.

(3) Claims must be administered with the greatest care and with complete co-operation between the executive and the Chief Medical Officer. Claims procedure is described later, but the guiding principle is to control without upsetting the claimant. It is pointless to worry a man who is seriously ill by a demand for reports and examination, which would very soon give the company a bad reputation. On the other hand a claim must never be allowed to continue without absolutely satisfactory evidence of incapacity.

(4) The amount insured must be limited to a fixed proportion of the average total earnings. The usual figure is three-fourths, this including all insurances with every company, but in the case of large proposals it is probably desirable to reduce the limit to one-half. Regard must, of course, be had for the maximum retention of the office and the facilities for reassurance. Although Mr Robertson considers that no policy should be issued for more than £25 per week it must be realized that this is reduced to half-pay and that in the event of a long claim the total payment is only at the rate of £650 per annum. Many of our leading physicians and surgeons have actual expenses considerably above this sum and it is often necessary to issue policies up to as much as 50 guineas per week.

#### UNDERWRITING

The selection of risks follows the same main lines as for life assurance and, generally speaking, a bad risk for life assurance is a bad risk for sickness insurance. The converse does not hold, however, because many of the points to be watched in sickness insurance are of little importance to the life underwriter. Medical examiners are apt to overlook this and to describe an examinee as a "good life" regardless of the nature of the policy.

The heaviest claims for sickness insurance are those for mental and nervous complaints, which do not worry a Life Office except for the risk of suicide (which would be a great relief to the sickness fund). Claims of longest duration are always due to sufferers from these complaints. One claimant received continuous benefit for 30 years until attainment of age 65; his brother also became insane in 1926 and has several more years to claim.

Such cases cannot be prevented by the strictest selection, but any history of "nervous breakdown", or "debility", must be closely investigated. Even a breakdown under the stress of a final examination, which was at one time ignored, has been found to be the prelude to future neurasthenia.

Duodenal ulcers cause long and recurring claims and any history of indigestion is a warning, especially if it has been severe enough to require investigation by X-ray, even with negative results.

Hay fever or asthma, however slight, turn into bronchitis in later life and bring long claims. Such cases would probably be looked on as good life risks, at any rate to age 60.

Affections of hearing or sight may lead to a claim for deafness or blindness, either of which will render a man permanently incapacitated. Similarly a man who has lost one eye may become blind, either naturally or by some accident to the good eye.

Sinus and antrum infections can be very troublesome and the slightest cold may make the condition flare up. A claim of 3 or 4 weeks' benefit every year is a heavy item, and yet the candidate can be accepted for life assurance without question.

Among smaller risks we have recurrent tonsillitis, and a question should be asked in the medical report on the condition of the tonsils. Similarly the condition of any operation scar should be noted in case of a future claim for hernia.

In life assurance there are four possible decisions—declinature, deferment, a special premium (either a loading or a debt), and ordinary rates. Sickness insurance has a fifth—the exclusion—which is a great help in cases where there is some existing condition or a past history. Experience has shown that although the idea of excluding any claim is most undesirable in a life policy, it is quite practicable in sickness insurance.

All the cases referred to above would probably be accepted at ordinary rates, subject to no benefit being paid in respect of incapacity due to or arising from the particular condition or weakness. In practice such exclusions are usually accepted by the proposer because he feels that he is not likely to have any trouble, or recurrence of previous trouble. His attitude is similar to that of the life proposer who takes a lien in preference to an extra premium—he is backing himself against the company.

The wording of exclusions is difficult. They must be compre-



hensive without being too formidable and they must be medically sound. There is now such an extensive nomenclature of diseases that it is quite possible to make a claim which is valid, although it was intended to be excluded. As an example, if you exclude maxillary sinusitis you must pay a claim for ethmoiditis. If tonsillitis is excluded you must pay for pharyngitis. In the main, however, the system works very satisfactorily and it is only rarely that the claims department has problems of this sort to deal with.

Unlike a loading, an exclusion is often removed after a period of years, subject to a fresh examination. This occurs with such cases as tonsillitis after the tonsils have been removed, and also where there has been an exclusion on account of one attack of sciatica a year or two before the policy was effected, or the passing of a small urinary calculus. If there is no recurrence after, say, 5 years it is probably safe to remove the exclusion.

#### POLICY CONDITIONS

It is desirable to keep these as simple as possible, remembering again that, while in a life policy only one claim is made, here we can have many, so that frequent reference may have to be made to the conditions.

The definition of incapacity has already been dealt with and this must be as free as possible from ambiguity. So also must be the conditions for claiming. The normal procedure is that notice of claim must be given within seven days of the commencement of incapacity, when a claim form is sent which must be returned with a certificate of incapacity within a stated period, say, 10 days. If these conditions are not observed the office runs the risk of not being able to confirm a doubtful certificate or to insist on a special medical examination, and it is easy to lose control of claims. Years ago, a company, now extinct, had a regular claimant whose illness was certified by a sympathetic doctor and who always took advantage of the rules to the full. However quickly the office demanded an examination he was always back at work before it could be arranged.

Late claims must naturally be treated on their merits, but it is dangerous to encourage them, and a warning that conditions will be strictly observed in the future usually has a salutary effect.

The seven-day rule cannot apply to deferred benefit policies, but it is desirable to have notification of any illness of over, say, 2 months' duration in order that a certificate may be obtained well in advance of the commencement of benefit.

Foreign residence is usually restricted to a limited period of, say, 3 months in selected European countries. Permission must be obtained for other residence abroad and an extra premium paid if necessary. Considerable difficulty arises over lives resident abroad, not as in life assurance purely from the climatic risk, but from delay in notification and unsatisfactory medical certificates. The position is easier if the office has foreign branches but, even so, certification by foreign doctors is not always satisfactory. As a matter of practice my own office allows visits for research work up to 12 months' duration in the U.S.A., since the insured will always be in touch with some good medical centre. Voyages as ship's surgeon are also allowed subject to benefit being paid only while actually on board a British ship. Substantiation of the claim can be obtained by an extract from the ship's log.

Although a policy is usually cancelled if the insured goes abroad, there are occasions, if the visit is likely to be only for a year or two, when certain concessions are made. One device, though not of actuarial merit, is to keep the policy in force without cover on payment of the premium, or a proportion thereof. Cover then commences on return home, subject to evidence of health.

This method was used in some cases during the Great War, though at least one office paid claims for war injuries, benefit commencing from the date of return to this country. It is difficult to predict what attitude could be taken in the event of another war, though all policies specifically exclude war risks, together with riot, civil commotion, etc.

The other claims excluded are those caused or aggravated by intemperance or immorality—usually very difficult to prove—and those arising from participation in flying and other hazardous pursuits. These exclusions vary according to the practice and opinion of the office.

There is one point which is foreign to the ideas of most of those who are concerned purely with life office work. Whereas a life policy is seldom contested, a sickness policy may at any time during its currency have to be cancelled owing to fraud or mis-

statement of facts. It may happen that a claim is made and it is then revealed that the insured had had a similar incapacity before, which had not been mentioned. It may not have been intentionally withheld, but the office had not known the full facts. The right to cancel the policy must then arise and the company can take such steps as it thinks fit. It is obviously not right to use a trivial oversight as an excuse to get rid of a bad claimant, and the principle that I advocate is to decide what the office would have done if it had been aware of the defect. If it would have declined the case, the policy should be cancelled. If it would have put on an exclusion or a loading, offer to renew only on these conditions. It is difficult to "job backwards" and in some cases the claims record must have some effect on the decision, but this method does give a basis which is reasonably fair to an honest man. If there is a flagrant case of deliberate concealment there is no doubt that the policy must be cancelled.

#### CLAIMS

The schedule completed by the claimant and his medical attendant forms the basis of the claim and the form used by my own office has been inserted after page 280.

Questions 3 and 8 may have different answers since the claimant usually completes his own section and passes it to his doctor for the certificate. The latter may give information to the office in confidence which he is withholding from the claimant—particularly in the case of a malignant condition. Questions 4, 11 and 12 have to be watched for a possible concealment of previous illness and it may be necessary to consult the original proposal and the medical report. It is often necessary to ask for further details and dates arising from these questions. For instance, a claim for duodenal ulcer may have in answer to question 12, "Has suffered from dyspepsia". Unless this has been mentioned in the medical report or a previous claim, the date should be asked and whether any investigation had been made. This must not be construed as a reflection on the claimant's honesty but as a routine matter in this type of business. Usually the condition has only arisen in the last few months, but now and again a case is found which reveals how forgetful a candidate for insurance may be.

Questions 5 and 13(a) determine whether incapacity is total,

6 and 9 fix the commencing date unless the claim is late and the strict policy condition has to be enforced.

Claim procedure varies with offices, but the following method is simple and effective. The Medical Officer sees all claim schedules and a card is attached to each for his use. He makes such notes as he likes, and, on the basis of question 14 and his own judgment, puts the card in a cabinet divided into weekly partitions. Thus if the claim is already a week old, with estimated duration 3 weeks, the card is put in 2 weeks ahead. At the end of 2 weeks that card and all others in the same division come up for scrutiny and unless the claimant has signed off, a special report is issued to be completed by the doctor in attendance. This asks for the latest developments in the illness and for another estimate of future duration. The same procedure is then repeated until the claim ends and the card is removed, and returned to the papers for use when the next claim is made.

In this way the Medical Officer has his own notes on successive claims and is able to watch the duration of every individual claim. If he is not satisfied with a report he can refer the case to the Board or have a special examination by the company's own examiner. The procedure is fair because in the general case everything is based on the opinion of the man's own doctor. It is not often that a special examination is required unless the claim is unduly prolonged without any real reason. Such an examination should not be asked for at once as otherwise it is a reflexion on the certificate of the doctor, and it is advisable to substitute the examination for the next special report at the end of the estimated period.

I do not favour frequent examinations of claimants unless there is a doubt as to the ordinary certificates. The majority of claimants are genuinely ill and it is a waste of time and money to have an examination. Added to this it is bad for the office to get a reputation for worrying claimants. There are neurasthenics, however, who will not go back to work unless they are sent to some specialist. I remember one case of so-called cardiac disease where the claimant was asked to travel to London for an examination. He stated that the noise and bustle would be too much for him, so it was arranged that a car would pick him up and take him from door to door. He went back to work next day. This is an exceptional case, but it can be very expensive to the office. Also it is of the type which makes

necessary the apparent suspicion with which all claims have to be treated.

There is an endless fascination in sickness claims, and many interesting and amusing cases could be recited. There was one man who claimed four times for burns from a hot-water bottle, and another who had enteritis and did not recover until his wife threw away all the aluminium cooking utensils. A third tried to alter the doctor's certificate and later was found to have schizophrenia, the so-called "split mind". In a similar case a claimant had a gap of nearly 2 years in his memory, and yet during that time he bought a practice and ran it successfully.

#### RENEWALS

It is usual to allow 30 days' grace for payment of premiums, but there cannot be non-forfeiture regulations similar to those given with life policies. Renewal after the days of grace must inevitably be subject to evidence of health. Otherwise the man who had decided to drop his policy might be taken ill unexpectedly and find himself in a position to pay his premium out of his benefit and show a profit on the renewal.

Premiums are normally payable throughout the whole duration of the policy, even when benefit is being paid. It is accordingly desirable, if a premium falls due while a claim is being made, to deduct the premium from the benefit in order to avoid the risk of renewal being overlooked.

#### COMBINED BENEFITS

The literature of sickness insurance is so largely confined to the benefit in relation to life assurance that this subject calls for reference. Generally speaking, the American type of policy is not now issued by our own offices and the position appears to be that various companies have at some time or other entered the market and subsequently have not pressed the business. Although reference books quote a substantial list of offices transacting life assurance with disability benefits the actual business appears to be extremely small.

An office undertaking permanent sickness insurance can conveniently combine an endowment assurance with a sickness policy

terminating at the same age, and in this case the insured has the advantage of income tax rebate on the life assurance portion of the premium, though not on the sickness portion. This is a somewhat inequitable position, and as Mr Robertson says "the remission of Income Tax on Life Assurance premiums was granted solely with a view to promoting thrift and surely it may be contended that in no aspect of insurance is thrift better promoted than in providing for an income at a time when through physical incapacity ordinary earnings may cease altogether or be largely diminished".

In the last few years several policies have been brought out for pension purposes which include a normal pension at 60 or 65, a disability pension with waiver of premium in the event of incapacity lasting over 6 months, and a family provision benefit. This gives a very comprehensive cover and may indicate the trend of future insurance. Pension business is very much to the fore and to be really effective it should commence when work can no longer be performed, either on account of age or incapacity. The combination of either a deferred annuity or an endowment assurance with deferred sickness benefit covers this requirement adequately. If an approved pension scheme is being drawn up the deferred annuity will probably be more suitable, but otherwise tax rebate can be obtained on a large part of the premium by giving an endowment assurance with annuity option.

#### FEMALE LIVES

The risk of sickness among women is very much heavier than among men, and I think that only one office, apart from my own, will consider sickness contracts for female lives. Our original experience was very bad, and as a result the rates at present charged are about 75% higher than for males. New entrants are not considered above age 35, and benefits and premiums are suspended during pregnancy. The experience is now reasonable, but claims are apt to be very troublesome. There seems to be an increasing tendency to severe abdominal operations which cause several months' incapacity and subsequently lead to considerable nervous debility. On the whole the offices which discourage the business are probably wise.

## PREMIUMS

The primary actuarial aspect of sickness insurance is the premium to be charged and no more recent tables are available for this purpose than those of the Manchester Unity 1893/7 experience. In 1933 Messrs Burrows and Woodrow produced most valuable monetary tables based on the Manchester Unity A.H.J. 1893/7 Sickness Experience combined with the Central Counties Rural and Eastern Counties Rural mortality experiences of 1920-22. These have the great advantage of using light mortality which is an essential precaution. A heavy mortality makes provision for a smaller proportion of survivors at the older ages, and brings out sickness premiums which are too low.

The net premium for a policy terminating at age  $t$  is  $\frac{K_x - K_t}{N_{x-1} - N_{t-1}}$ , the appropriate  $K$ 's being used according to the type of policy.

The rate of interest used must depend on the circumstances of the office, and although such a statement may sound very stereotyped there have in the past been very considerable differences in net rates earned owing to the application of the income tax laws. In the case of a composite office it is usual for the sickness business to be aggregated with other classes and for the general taxation to be on profits. In the case of a mutual office doing sickness insurance only, the basis of taxation has been the interest income *with no allowance for expenses of management* as is obtained in a life fund. My own office has been subjected to this basis for many years and it is only by virtue of a clause in the 1937 Finance Act that we are enabled to make a repayment claim which will in effect put the society's assessment on a profits basis. The effect of the past basis has been that the net rate earned on the sickness fund has been about 8s. % to 10s. % less than that on the life fund, although the income is derived from identical assets.

The loading for expenses depends also on the experience of the office and account must be taken of the different nature of claims expenses as compared with life claims. During an influenza epidemic I have known several consecutive weeks with over a hundred new claims, compared with the normal of thirty to forty. Each claim requires at the minimum a claim schedule, "Off" form, cheque and two stamps. In more complicated cases, further

reports and information, and special examinations involve additional expense. Although benefit is payable weekly, it is usual to pay short claims on return to work, and long ones at the end of each month. This saves the expense of weekly cheques and at the same time has an effect on the actual sickness experience. This was found to a remarkable extent by my own company many years ago, when this method of payment was introduced instead of the weekly cheque. The rapid improvement in the claims experience showed that a regular payment each week must have been an inducement to remain in benefit.

The basic rates must be those for Class 1 occupations such as accountants, bankers, dentists, doctors, and solicitors. Others have to be graded according to the occupational risk and an extra premium is imposed which may vary from 2s. 6d. to £1 for each £1 per week insured.

The varying basic rates of premium charged by offices are shown in the following tables of specimen rates:

*Annual premiums for £1 per week reducing to 10s. per week after 26 weeks and ceasing at age 60*

Age next birthday	Highest £ s. d.	Lowest £ s. d.
20	1 13 9	1 9 3
30	2 0 6	1 14 3
40	2 10 9	2 2 6
50	3 8 0	2 16 2

*Annual premiums for £1 per week after 26 weeks with no reduction, and ceasing at age 60*

Age next birthday	Highest £ s. d.	Lowest £ s. d.
20	16 0	12 0
30	1 1 4	17 3
40	1 10 1	1 6 0
50	2 5 5	2 0 3

There is a wide range between these figures and it is interesting to find that the average rate is very much nearer the highest figure for the immediate benefit policies and the lowest for deferred benefit. The net premiums by Woodrow's Manchester Unity A.H.J. Eastern Counties Rural Tables at 3% (*J.I.A.* Vol. LXIII, page 383) are set out below as a guide.



Age next birthday	Immediate Benefit to age 60			Deferred Benefit to age 60		
	£	s.	d.	£	s.	d.
20	1	2	4		8	10
30	1	6	7		13	0
40	1	13	8		19	7
50	2	4	11	1	11	5

The loading on the immediate benefit policies is roughly 50% for the highest and 25% for the lowest premiums. For the deferred policies the variation is from 80% to 45% in the highest group and from 36% to 29% in the lowest. The general rate charged by most commission-paying offices appears to approximate to Manchester Unity A.H.J. Eastern Counties Rural 3% premiums with a loading of 50% for immediate benefit and 33% for deferred benefit.

Sickness insurance is an increasing risk which is covered by a level annual premium. The need therefore arises for reserves in the same way as for a life assurance contract. In the early years the premium more than covers the risk, so that the excess has to be accumulated towards the time when the position is reversed. The reserve then meets the excess sickness risk until it is finally reduced to zero at the terminating age of the policy. The reserve is thus similar to that under a term assurance, and for this reason it is apparent that a surrender value should not be paid on the termination of a sickness contract.

I understand that surrender values are occasionally paid after a certain number of premiums have been paid, but the basis is not disclosed and the practice seems open to criticism, both on theoretical and on practical grounds. It was argued many years ago that the Friendly Society practice of "buying out" was extremely dangerous as only the good lives went and left the heavy claimants who could far more easily be spared and would in fact justify payment of a surrender value to remove the risk!

## VALUATION

In describing my own valuation method I will face at once a probable criticism. In every valuation report other than those of my company an item appears under liabilities of "Reserve in respect of claims which are current at the valuation date". Further, in the

draft Schedule of the Insurance Undertakings Bill, reference is made to such a reserve.

I consider that a valuation of liabilities by a table constructed like the Manchester Unity automatically provides a reserve for all future claims, whether they have already arisen or not. I believe it is the practice of some offices to value on an annuity basis all claims of some duration and to add this amount to the normal reserve. This appears to me similar to valuing a life policy at the full sum assured if the member is known to be seriously ill at the valuation date, or has actually died after that date. I am in favour of making substantial additional reserves for possible epidemics or fluctuations in the experience, but I see no justification for a specific reserve for current or chronic claimants, since these are already allowed for in the main valuation.

The mortality experienced in the sickness fund was found to approximate to the Central Counties Rural Experience, and Burrows' Tables, in which this mortality has been combined with the Manchester Unity A.H.J. Tables (*J.I.A.* Vol. LXIII, page 344), have accordingly been used at the last two valuations.

On the first occasion an over-all deduction of 10% was made from gross premiums, this being approximately the same as the total expense ratio including new business expenses, the office paying no commission. A number of negative values arose which were eliminated.

In 1936 there had been a change in the premium rates during the quinquennium and it was decided to make an approximate net premium valuation although no net premiums had been tabulated. Accordingly extensive samples were taken of business at old and new rates in each class of policy and for various groups within each class and a series of factors was obtained which was applied to the total gross premiums of each group. The percentages varied very considerably but the final over-all deduction was 13.3% of total gross premiums.

All benefits terminate at one of the quinquennial ages 65, 60, 55, and 50 and each class of benefit was valued in these groups, policies being scheduled in calendar years of birth. The benefit continues to the actual final birthday and not to the policy anniversary and a final proportional premium is payable up to the birthday. Hence if  $1936 - \text{year of birth} = x$ , the age at the valuation date on 31

December 1936 is  $x + \frac{1}{2}$  assuming an even distribution, and the value of each £1 per week of sickness benefit ceasing at age  $t$  is

$$\frac{K'_{x+\frac{1}{2}:t-(x+\frac{1}{2})}}{D_{x+\frac{1}{2}}} = \frac{K'_{x+\frac{1}{2}} - K'_t}{D_{x+\frac{1}{2}}},$$

where  $K' = K^{26} + \frac{1}{2}K^{26}[\text{All}]$  for the immediate reducing classes. For female lives an increase of 50% was made.

Similarly, the valuation factor for the premiums assuming renewals to be evenly distributed is

$$\bar{a}_{x+\frac{1}{2}:t-(x+\frac{1}{2})} = \frac{N_{x+\frac{1}{2}} - N_{t-\frac{1}{2}}}{D_{x+\frac{1}{2}}} = \frac{N_x - N_{t-1}}{D_{x+\frac{1}{2}}},$$

taking  $N_x = N_{x-\frac{1}{2}}$ .

The valuation factors requiring tabulation thus consisted only of  $K_{x+\frac{1}{2}}$ ,  $K_t$  for values  $t = 50, 55, 60, 65, \frac{1}{D_{x+\frac{1}{2}}}$  and  $N_x - N_{t-1}$ .

In this particular office there is an additional valuation item of reversionary bonus to which reference is made later. This entailed an extra column in the schedules with a valuation factor of

$$\bar{A}_{x+\frac{1}{2}:t-(x+\frac{1}{2})} \text{ or } \bar{A}_{x+\frac{1}{2}} + \frac{D_t}{D_{x+\frac{1}{2}}} (1 - \bar{A}_t).$$

Hence further factors  $\bar{A}_{x+\frac{1}{2}}$  and  $D_t(1 - \bar{A}_t)$  for  $t = 50, 55, 60, 65$  needed calculation. Incidentally the bonus valuation factor  $\times$  amount insured  $\times$  number of premiums paid in the quinquennium gave the cost of a new bonus of £1 p.a. for each guinea per week, which afforded a rapid method of estimating the cost of varying rates of bonus for each class.

Interest at 3% was taken, the average net rate earned over the quinquennium having been 3.80%. The corresponding rate in the life fund was 4.20% showing a difference of 8s. % due to the basis of income tax assessment.

The total value of sickness benefit and bonuses less the value of net premiums gave the total liability of the sickness fund, and a large additional reserve was then made to cover contingencies such as epidemics and possible fluctuations in the experience.

I have previously referred to the terms of the draft Insurance Undertakings Bill and, in addition, to giving to continuous disability business a separate status, the Bill sets out in the 5th and 6th Schedules requirements for statutory returns on the lines of the

ordinary life office returns to the Board of Trade. The actuarial basis of the business is thus recognized and it appears probable that the next insurance legislation will make such returns necessary. Schedule 5 follows closely Schedule 4 of the 1909 Act and as regards Continuous Disability Business requires a Consolidated Revenue Account, a Summary and Valuation, and a Valuation Balance Sheet, each in the prescribed form. The general principles and full details of the method of valuation must then be set out, most of these following the existing form for life business. They include the method of arriving at the net premium, valuation age and premium term, details of tables used, rates of interest and reserve for expenses and profits, treatment of lapsed policies and negative reserves.

The Schedule concludes with the distribution of profits and specimens of bonuses allotted, while Schedule 6 requires specimen premiums, particulars of all the policies in force and total benefits paid, on the lines of the present Schedule 5.

The impression is given that the Schedules were modelled closely on those for life assurance contracts, and that some of the items were put in with little regard to the existing conditions of the business. For example, one question refers to bonuses allotted to policies "for one hundred pounds", a classification which can hardly arise where the benefit is a weekly payment.

The references throughout the Schedules to bonuses are of interest because my own office is the only one which gives an actual reversionary bonus on sickness policies. This bonus operates in exactly the same way as a simple reversionary life bonus and is declared at each valuation as a payment to be made at the terminating age of the policy or at previous death. The amount varies with the class of policy, and depends on the weekly benefit and the number of premiums paid in the valuation period. The present standard rate for immediate benefit policies to age 65 and 60 is 15s. per annum for each guinea per week. For deferred policies the rate is 12s. per guinea (3 months) and 10s. (6 months) and in all classes a lower rate is declared for younger maturity ages.

The method of treatment of bonuses in the valuation has already been referred to and the rate of new bonus is readily assessed from the Valuation Balance Sheet. It must be realised that a sickness experience is liable to very wide fluctuations, and that one or two

influenza epidemics in a quinquennium can have a very serious effect. A sickness bonus can therefore not be expected to achieve the stability which we are accustomed to associate with life bonuses.

It will be noticed that benefit is quoted in guineas per week, whereas previous remarks have referred to benefit of £1 per week. This basis is peculiar to the office under consideration and is convenient as giving an exact payment of 3s. per day per unit of benefit. The rates and formulae I have quoted are all on the basis of £1 per week.

#### SICKNESS EXPERIENCE

In the process of previous valuations, rough sickness experiences have been worked out on the basis of the whole business, and reference is made to these later. Following the 1936 valuation, however, it was decided to make a formal investigation over a period of 5 years and details of this are now given. Owing to a change in the end of the financial year from 30 June to 31 December the valuation period covered only  $4\frac{1}{2}$  years and accordingly the five full calendar years 1933-7 were considered.

As the experience was for the society's own use the financial aspect was of primary importance and the details were prepared for investigation by amounts and by policies. For the present purpose, however, only policies have been dealt with, and only those giving immediate benefit on male lives. The experience of deferred policies is at present too small for consideration, as also is the female experience.

To make a complete investigation it would be necessary to get out tables in both select and ultimate forms, the former for use in calculating premiums and the latter for valuation purposes. To obtain true sickness selection an adjustment would need to be made in respect of all but the early duration sickness. For example, sickness of the second 52 weeks cannot be experienced in any year by a man who was not ill at the commencement.

An ultimate experience would need to exclude all business less than say 3 years in force so that all policies included could have been exposed at every duration of sickness.

It has not at present been possible to produce such tables though it is hoped to do so at a later date. Accordingly, the results shown are unadjusted figures for all policies in force during the five years.

Every sickness claim during the period was entered on a card and sub-divided into periods of sickness, and, with a view to a complete analysis, the first 13 weeks were sub-divided into the first six individual weeks, and the next seven. Thereafter the ordinary classification of "second 13 weeks", "second 26 weeks", "second 52 weeks" and "after 2 years" was employed.

In preparing the cards reference was made to the papers and claim history in each case. This was necessary on account of the linking-up of claims already referred to. Thus a claim for two weeks' benefit occurring within 6 months of a previous similar claim had to be entered under 3rd and 4th weeks, whether or not the previous claim occurred within the 5 years.

Many of the original Friendly Society members have a 12 months' linking-up clause, but to secure homogeneity it was assumed that the 6 months' clause applied in each case. Actually duplicate cards were prepared in these cases, as it is hoped at a later date to investigate the effect of the mixed experience. It is possible that the psychological effect of the longer period may have affected the so-called homogeneity of the present data, but each claim has at any rate been treated uniformly. The sickness claim cards were used to give totals of sickness experienced, on the average, between ages  $x$  and  $x+1$ . The numbers exposed to risk of sickness were obtained by application of the "census" method which has been so prominent in recent years. The numbers of policies in force at age  $x$  last birthday on 31 December of each year from 1932 to 1937 were ascertained by use of the existing valuation system. On the assumption of an even distribution we thus get the number of policies in force at age  $x + \frac{1}{2}$ , and the quotient

$$\frac{\text{Sickness between } x \text{ and } x+1}{\text{Number in force at } x + \frac{1}{2}},$$

gives  $z_x$ , the central rate of sickness for age  $x$ .

Since the exposed to risk have not been adjusted to give select results, and a central rate of sickness has been obtained, a direct comparison can be made with the Manchester Unity (1893-97) Tables. It should be noted, however, that we are using a 6 months' linking-up period instead of 12. It is also probable that a comparison of long-term sickness in the earlier years is of little value since many of the policies are of recent issue. The M.U. Tables start at age 15,

and their members aged 30 are veterans compared with those who do not consider insurance until qualification at say age 25.

I have given in Table 1 the exposed to risk at quinquennial ages and also the proportions of new entrants in each group over the quinquennium. The central ages 22, 27, etc., correspond to groups 20-24, 25-29, etc., last birthday. This was done after an experiment applying the Manchester Unity  $\pi$ 's for the first 13 weeks to the exposed to risk in individual ages. The total expected sickness for each five years grouped as above was then compared with the product of the number in each group and the  $\pi$  for the central age. In no case did the difference exceed  $\frac{1}{2}\%$  and it was considered reasonable, as well as very convenient, to use the group totals and central ages for all purposes.

Table 1

Central age of group	Exposed to risk 5 years 1933-37	Age distribution of new entrants in quinquennium %	Central age of group
22	240	8.0	22
27	3762	34.2	27
32	8042	29.6	32
37	8009	18.0	37
42	5510	7.6	42
47	4540	2.1	47
52	3410	.3	52
57	2899	.2	57
62	2133	—	62
Total	38545	100.0	Total

Table 2 gives the unadjusted sickness rates in the ordinary classifications and Table 3 a comparison with the Manchester Unity A.H.J. rates. Actual comparisons were also made with the Whole Society rates and with the National Health Insurance sample rates of 1921, 1924 and 1927, given by the late Sir Alfred Watson in his paper on "The analysis of a sickness experience" (*J.I.A.* Vol. LXII, p. 18). The Whole Society rates are, of course, inappropriate for comparison with an experience of professional lives in view of the heavy-risk classes E, F and G, and I have not published the figures. Also the National Health Insurance ex-

perience follows the general shape of the A.H.J. curve so closely that no useful additional results were obtained.

Table 2. *M.S.S. Experience 1933-37. Central rates of sickness (unadjusted)*

Central age of group	Period					Central age of group
	First 13 weeks	Second 13 weeks	Second 26 weeks	Second 52 weeks	After 104 weeks	
22	·917	·071	·054	·054	—	22
27	·580	·040	·023	·021	·003	27
32	·694	·054	·032	·023	·005	32
37	·712	·066	·046	·044	·031	37
42	·680	·082	·058	·039	·157	42
47	·840	·113	·060	·059	·225	47
52	·977	·198	·155	·145	·385	52
57	1·060	·204	·206	·232	·567	57
62	1·256	·383	·465	·581	1·798	62

Table 3. *Comparison with Manchester Unity 1893-97, A.H.J. rates. Percentage, Actual/Expected*

Central age of group	Period					Central age of group
	First 13 weeks	Second 13 weeks	Second 26 weeks	Second 52 weeks	After 104 weeks	
22	141	94	118	217	—	22
27	91	47	38	55	7	27
32	105	56	45	43	7	32
37	100	54	50	65	21	37
42	85	52	47	40	60	42
47	93	56	37	43	57	47
52	92	69	63	66	53	52
57	84	50	51	58	44	57
62	82	64	69	77	77	62
All ages	93	57	53	60	55	All ages

The first age group shows a phenomenally high rate, but this is of small importance owing to the paucity of data, the total exposed to risk being only 240.

Apart from this there is only one point at which the A.H.J. experience is exceeded and at almost all ages and durations of sickness the percentage is less than 90.

In view of the considerable fluctuations in individual figures the



"total" percentage has been put in for each period. This figure is of course dependent on the distribution of the business but it shows that the average ratio is 93 % in the first 13 weeks and thereafter never exceeds 60 %.

The most expensive group from the point of view of the Insurer is the first 13 weeks, and considering this we find that the earlier ages are high and the older ones low, as compared with the Manchester Unity. This is a feature which I have always expected on account of the constitution of the Medical Sickness Society. Many of the original members looked upon their premiums as subscriptions to some medical society and probably never troubled to claim. Some members of 35 and 40 years' duration have never drawn benefit and it is the survivors of this type who appear in the older ages of the experience. Since 1920 new entrants have had a proper policy instead of a certificate and have been better aware of the conditions of insurance, both through wider publicity and a general improvement in insurance education. Also the general type of medical practitioner has undergone a considerable change and the advent of large panel practices with a definite buying and selling value has made the profession much more of a commercial undertaking. This point must always be watched when considering the incidence of claims and nothing could be more dangerous than to have a body of heavy claimants grafted on to an existing very light experience which masks the true position. So far there is no indication that any such change is taking place, although the sickness of newer entrants is definitely higher than that of the old.

There is one point which is particularly striking and that is the definite minimum point at age 42 denoting the age group 40-44. Such a feature had appeared in the previous valuation experiences and these are summarized for the first 26 weeks in Table 4. This table is based on the whole of the business as already mentioned, but the main class of Immediate Benefit—Male Lives, amounts to about 95 %. In each of the periods *a*, *b* and *c* there is a drop in the ratio of actual to expected from central ages 37 to 42, though in *a* and *b* the low level continues in succeeding ages. The full experience now available shows that this minimum point—an actual minimum as shown in Table 2 and not merely a comparative one—is a feature of the experience.

Table 4. *Comparison of M.S.S. Experience with Manchester Unity A.H.ŷ.*

(a) 5 years 1 July 1922 to 30 June 1927.

(b) 5 years 1 July 1927 to 30 June 1932.

(c) 4½ years 1 July 1932 to 31 December 1936.

Central age of group	Percentage, actual/expected, first 26 weeks			Central age of group
	(a)	(b)	(c)	
22	72	98	131	22
27	108	99	80	27
32	94	100	98	32
37	85	97	92	37
42	76	77	80	42
47	71	77	88	47
52	72	74	83	52
57	72	62	66	57
62	83	72	75	62
Total	78	81	84	Total

In an attempt to find an explanation the following points have been considered:

(1) *Selection by entry.* The details of new entrants in Table 1 show that only 7·6% came in at ages 40-44 and 18% in the previous group. This rules out the possible presence of a large body of lives recently selected by medical examination.

(2) *Selection by generation.* The group consists of those who were aged 20-24 in 1913-17, the period of the war. It is possible that they have acquired a special immunity from illness as a result of the hardships then experienced. We should, however, expect the feature to appear 5 years earlier in Table 4(b) and 10 years earlier in 4(a), but no such evidence appears. An investigation in another 5 years will show whether the feature has progressed to age 47 or remains stationary.

(3) *Selection by mortality loss.* If the mortality at a particular period is heavy it means that the bad lives are taken out of the experience and those that remain should show a light rate of sickness. Comparative mortality figures by the Central Counties 1921 Table are set out in Table 5 for the last two valuation periods and in both of them a strong maximum appears in the following age group. In fact the mortality at age 42 in the 1932-36 experience is disconcertingly low at 58%.

The high mortality at ages 45-50 has been a noticeable feature for a number of years and on several occasions a complete investigation of individual cases has been made. No definite information has been derived from this, however, and the cause seems as obscure as the minimum in the sickness rate at the previous ages.

Although the other periods of sickness show no minimum at age 42 the comparison with the A.H.J. Rates shows that a similar tendency holds all through except in the "after 2 years" when there is actually a maximum ratio. It is possible then that a medical man attains his prime in the early 40's and works at such high pressure that he has no time to lay up when he is ill. The result is that he finally breaks down seriously and eventually dies in the next quinquennium after wearing himself out at his work.

Table 5. *Mortality compared with Central Counties, 1921.*  
*Percentage, actual/expected*

Central age	1927-32	1932-36	Central age
22	—	—	22
27	34	12	27
32	27	34	32
37	35	98	37
42	73	58	42
47	113	134	47
52	91	96	52
57	64	137	57
62	93	105	62
Total	73	92	Total

I feel that there is some connexion between the two features, as they are both well marked and recurrent. It may be, however, that they are independent and that the comparatively high mortality in 1932-36 in the age group 35-39 (98%) may have a bearing on the problem.

#### SHORT PERIOD RATES

Table 6 gives the split rates for the first 13 weeks and Table 7 the same rates expressed as a percentage of the total.

It will be seen that the rate for the first week of sickness is almost constant throughout and it must be pointed out that this is affected by the method of paying benefit. No claim is admitted for less than one week, so that excepting linked-up claims, the first

*Permanent Sickness Insurance*Table 6. *M.S.S. short period sickness rates*

Central age of group	Period								Central age of group
	1st week	2nd week	3rd week	4th week	5th week	6th week	7th to 13th weeks	Total 1st 13 weeks	
22	·213	·158	·112	·092	·088	·075	·179	·917	22
27	·166	·122	·082	·055	·040	·030	·085	·580	27
32	·191	·140	·094	·068	·051	·038	·112	·694	32
37	·191	·146	·097	·068	·051	·039	·120	·712	37
42	·173	·131	·088	·065	·049	·038	·136	·680	42
47	·199	·152	·109	·080	·061	·050	·189	·840	47
52	·196	·158	·121	·097	·077	·065	·263	·977	52
57	·200	·174	·132	·100	·083	·075	·296	1·060	57
62	·207	·184	·147	·116	·099	·089	·414	1·256	62

Table 7. *M.S.S. short period sickness expressed as percentages of first 13 weeks*

Central age of group	Period								Central age of group
	1st week	2nd week	3rd week	4th week	5th week	6th week	7th to 13th weeks	Total 1st 13 weeks	
22	23	17	13	10	9	8	20	100	22
27	29	21	14	9	7	5	15	100	27
32	27	21	13	10	7	6	16	100	32
37	27	20	14	10	7	5	17	100	37
42	25	20	13	9	7	6	20	100	42
47	24	18	13	9	8	6	22	100	47
52	20	16	13	9	8	7	27	100	52
57	19	16	13	9	8	7	28	100	57
62	16	15	12	9	8	7	33	100	62

week's sickness is the same as the rate of claim. Thus it appears that at every central age except 27 and 42 almost exactly 20% of policies are subject to a claim each year.

The second week's rates are almost exactly 75% of the first week's until the last three age groups when the percentage increases as would be expected at the older ages. The third, fourth, fifth and sixth weeks show an almost constant percentage of the total sickness for the first 13 weeks. The last seven weeks show a steady increase with age, as would be expected.

In the Tables of Rates of Sickness and Disablement and Issue extracted from the Report for 1912-13 on the administration of the

National Insurance Act (Command 6907) there are given rates of sickness for all periods up to the first 12 months based on the Manchester Unity Whole Society. These were arrived at by a process of interpolation from the totals of first 6 weeks, next 7 weeks, next 13 weeks, etc.

In Table 8 the percentages of the first 13 weeks are set out in the same way as the Medical Sickness Society's actual experience.

Table 8. *Manchester Unity (Whole Society). Short period sickness expressed as percentages of first 13 weeks*

Age	Period								Age
	1st week	2nd week	3rd week	4th week	5th week	6th week	7th to 13th weeks	Total 1st 13 weeks	
22	26	20	14	10	8	5	17	100	22
27	26	19	15	10	8	5	17	100	27
32	25	19	14	11	7	6	18	100	32
37	24	18	14	11	7	6	20	100	37
42	23	17	14	11	8	6	21	100	42
47	21	17	14	11	8	6	23	100	47
52	20	16	14	10	8	7	25	100	52
57	18	16	13	10	8	7	28	100	57
62	16	15	12	11	8	7	31	100	62

A comparison of the results of an actual sickness experience with figures arrived at by purely mathematical means is most remarkable. In no case do the percentage figures differ by more than 3 and in many cases the results are identical. It is of great importance at a time when Sickness Insurance is developing to have accurate details of the experience of the early weeks. It is amazing to find that such details agree so closely with those of an experience exactly 40 years earlier, and it is a great tribute to actuarial science that the figures are found to stand the acid test of a practical claims experience.

#### SUMMARY OF EXPERIENCE

(1) The experience is confined to two particular professions subject to a special risk of infection, but qualified to take preventative measures at an early stage and to guard against repetition of a particular condition.

(2) There is a special class selection caused by a necessity to return to work and resume earning power.

(3) The experience shows a favourable comparison with the standard A.H.J. sickness of the Manchester Unity Experience 1893-97.

(4) There is an unexplained minimum sickness rate in age group 40-44.

(5) The short period rates show a remarkable conformity with theoretical apportionments derived from the first 13 weeks of the Manchester Unity (Whole Society) Experience.

The object of this paper is to explain the details of a little known business and to show the practical workings of a particular experience. The possibilities of Sickness Insurance are wide and the business can be both interesting and profitable.

In conclusion I should like to express my appreciation of the advice and assistance given to me by Mr P. N. Harvey, F.I.A., and Mr Bertram Sutton, F.C.I.I. I am also deeply indebted to Mr R. G. Barley, A.I.A., who has been responsible for the whole of the practical work of the sickness experience.

## ABSTRACT OF THE DISCUSSION

**Mr E. A. J. Heath**, in introducing his paper, said that the subject of income tax on sickness benefits had been omitted. That omission had been made deliberately because the whole question was *sub judice*. The practice of the Inland Revenue authorities not to tax sickness benefits had been looked upon as an act of grace on their part related to the absence of any rebate of tax on the premiums. In the last year or so, however, they had inclined to the view that payments which continued for more than twelve months ranked as an "annual payment" within the meaning of the Income Tax Acts and that affected a number of chronic claimants. An appeal had been made in one case but it had not yet been heard.

**Mr H. J. B. Cope**, in opening the discussion, said that the subject of the paper had received little notice at the Institute. There had been, however, several papers dealing with benefits payable nominally on total and permanent disablement, but the introduction of the "ninety days" clause in certain cases had left very little meaning in the word "permanent". Permanent sickness insurance was concerned with total disablement which was either permanent or temporary in the ordinary meaning of those words.

He was glad to notice that the author was of the opinion that partial incapacity could not be covered, though he assumed he was referring only to partial disablement by sickness. Some companies would cover partial disablement by accident up to, say, one-fourth of the weekly benefit, and he could see no objection to that. He agreed that it was undesirable to issue a policy covering sickness only.

In no department was selection so consistently and persistently against the company as in continuous disability insurance. It was necessary in every case to have what might be called an instructed medical opinion. It was of importance that the examiner should know that the proposal was for sickness and accident insurance. In the office with which he was connected the practice was to insert in the medical report form the following note: "*As incapacity by sickness or accident is to be covered by the policy to be based upon this report, the proposer's liability to sickness is of the first importance and the medical examiner is requested to note all illnesses and accidents which the proposer has experienced, and particularly all tendencies to which he may be specially liable.*" The need for special underwriting technique possibly accounted in part for the fact that only a small number of offices invited continuous disability insurance, though the recent experience in America had no doubt been some deterrent to any company which might have been considering commencing it. That experience had clearly shown the dangers of increasing the liberality of policy conditions and it emphasized the value of the author's suggestions for the successful writing of the business. The occupational risk was a vital factor in selection. As Mr Robertson had stated in his paper, proposals should be encouraged only on the lives of persons in steady employment who were in receipt of a regular income and where there was every prospect of the income being

continued on the same basis or on a higher scale. Persons who were engaged in intermittent work might be satisfactory for life assurance but experience had shown that as a rule they were not desirable lives for disability insurance.

While agreeing on the need for a limitation of benefit to a fixed proportion of earnings, he could not help feeling that the suggestion of a maximum benefit of fifty guineas a week indicated a tendency to regard the contract as an indemnity, and he was doubtful whether any insurance company would be well advised to issue policies for such a large amount: there was the difficulty of obtaining average results and also there was no doubt that the rate of disablement increased as the amount of the weekly benefit increased. He assumed, however, that the author would not issue a policy for fifty guineas per week under the deferred non-reducible plan.

The definition of disablement was a matter of great importance. What constituted total disablement could only be determined in each individual case, and sickness insurance was a class of business involving a large measure of trust on the part both of the insurance company and the assured. He had been informed that if the policy contained the most general definition of total disablement and if a company could prove that a person who was disabled could sweep a crossing it need not pay a penny under the policy. That might be true, but it would obviously not be to the advantage of any company to take an unreasonable attitude. The author had made it clear, of course, that the definition of disablement which he had used was justified by the fact that he was dealing with a specialized class of life.

The author had said that in his experience the heaviest claims were those arising from mental and nervous complaints. He (the speaker) had had the same experience but tuberculosis also had caused some very heavy claims. Under-average lives required very careful consideration. If the policyholder agreed to pay an extra premium it might mean in effect that he appreciated that there was an extra risk and it was only to be expected that he would take advantage of the policy to assist him in preserving his health. The author had given several methods of dealing with under-average lives, to which might be added that of cutting down the duration of the assurance—a method particularly applicable to lives which were overweight. Another method, applicable to a proposer who was predisposed to some particular form of ailment, was to exclude the first week or ten days of such disablement: for example, it might be considered suitable to exclude the first week or ten days of disablement due to influenza or feverish colds.

Regarding the valuation of sickness business he recalled the statement made in the discussion of Mr Robertson's paper: "In an expanding business the results shown by any investigation would always be out of date and would be an unsafe guide." Dr Hunter had said that the advancing knowledge of the public with regard to disability benefits probably tended to encourage fraud and malingering, resulting in higher cost to the companies than formerly. Therefore, if only on account of the uncertainties of the business, it was necessary to have ample reserves. On the question of reserves for current claims, he was in agreement with the author to the



extent that if, in the valuation of a group of policies, the proportion of disabled lives were in accordance with that assumed by the table used in the valuation the reserves would in the aggregate be correct; but he assumed that if such a condition were not present, i.e. if there were an excess of disabled lives, he would increase his reserve for fluctuations in the experience because a departure from the expected sickness was actually present. In all probability, that was one of the cases where most actuaries would feel it advisable not to be too theoretical and to keep some additional reserve for all current claims. At the most recent valuation with which he was acquainted the basis used was: Mortality, A 1924-29 Ultimate; Sickness and Accident, Manchester Unity, 1893-97. A.H.J. The rate of interest assumed was 3%. It was, however, decided to increase the stringency as follows; (1) an addition was made to the reserves to provide for rates of sickness and accident in excess of the Manchester Unity 1893-97 experience; (2) an addition was made for other contingencies and for expenses in excess of the margin provided by the difference between the office and net premium; (3) a special reserve was made for those cases which were accepted at other than first class rates.

They were all indebted to the author for the particulars of the sickness experience which he had given. He could not help thinking, however, that on account of the constitution of the Society the experience of the insurance companies would be different from the experience of the Society. It would be of interest if some of the insurance companies would combine to publish their experience, although that would not be an easy matter, if only on account of the differences in the policy conditions and more especially the differences in the definition of total disablement.

**Mr L. Morton Butt** was of the opinion that it would not be so convenient for a life office to undertake permanent and continuous sickness business as it would be for a composite office which already had an existing organization for dealing with claims in connexion with ordinary sickness and workmen's compensation insurance. Nevertheless, he thought that many composite offices were disinclined to issue permanent contracts owing to the difficulties of the business. There was often great difficulty in convincing the claims department that a man was disabled, and still more difficulty in convincing the claimant that he was well. The practical administration of the business often created bad friends, and that point owing to the risk of estranging a good agency connexion was more important to a composite office than to a sickness society.

He was much interested in the comparison of sickness rates given in Table 3, but he felt that there was a fundamental difficulty in comparing period rates of one society with those of another. The sickness rate for each period at any age was ascertained by reference to the same total exposed to risk. A rapidly growing society would have proportionately more exposed to sickness in the early periods (and consequently more early sickness claims) and proportionately fewer exposed to risk in the "after 2 years" period of sickness than would a society which had reached a stationary condition. He did not know the rate of growth of the Man-

chester Unity when that experience was taken out but he assumed that there was not an unusually large proportion of new business, whereas in the author's experience there was a rapid growth over the period with which he dealt. He was informed that the number of exposed in the author's experience at the end of 1937 was 30 % greater than in 1932, and therefore a very considerable proportion of the exposed were under observation for only a year or two and could not (except in extreme cases) be exposed to sickness for any other than the very early periods of sickness. It followed, in his opinion, that the first 13 weeks' sickness rates in the author's experience were bound to appear high as compared with the Manchester Unity.

The author had shown in Table 1 that large numbers of entrants came in at age groups 27, 32 and 37. The combined effect of the rapid growth in the exposed-to-risk and the large numbers who came into the experience at the ages mentioned would naturally result in increasing the early period sickness rates in these age groups. He suspected that, although the author was no doubt right in his suggestion that after age 40 the members were too busy to be ill for longer than was absolutely necessary, the real reason for the apparent minimum sickness rate for the first 13 weeks at age 42 was that the sickness rates in that period at the lower ages were over-stated owing to the recent selection of business. The fact that the aggregate of the actual sickness rates for all periods at central age 42 was higher than at age 37 seemed to add weight to his contention. The effect of the "weighting" of the early period exposed to risk would be set off to some extent by medical selection, but he imagined that medical selection affected chronic sickness rather than temporary sickness. He thought it would be most desirable that an investigation should be made into select sickness rates. It seemed to him that for calculating premium rates the use of an aggregate table such as the Manchester Unity, where the first 26 weeks' sickness rate was found by reference to those exposed to sickness of all durations, must give inaccurate and possibly dangerous results. The effect of medical selection seemed to be rather difficult to ascertain, but he supposed that if the experience of new entrants were traced, and compared with the experience relating to all those members of the society who at the commencement of the period of observation had not been on the funds for the full waiting period, the difference between the rates of sickness in the two investigations would give the measure of medical selection.

**Mr L. W. Collingwood** enquired to what extent it was necessary for life assurance companies to undertake permanent sickness insurance in view of the fact that the needs of the ordinary citizen could be adequately provided for by a number of well-managed friendly societies.

There was of course a considerable difference between a society which gave benefits up to £1000 a year, and a friendly society whose unit was usually about 10s. a week. The selection of risks no doubt called for a slightly different technique. An insurance company would obtain a full medical report, but a friendly society stood in the same relation to such insurance companies as an industrial insurance company stood to an ordinary life assurance company. The friendly society could not afford to

have all applicants examined at a fee of a guinea each; it had to rely on personal contact, usually through a District Committee or a District Secretary. If medical examination were needed, some societies could afford a fee of only 2s. 6d. or 5s. and hence could obtain only an abbreviated form of report. The essential problems of selection, however, remained the same. Neither an insurance company nor a friendly society could afford to accept a man who admitted having had four illnesses of one week's duration during, for instance, the past three years. There might be nothing vitally wrong with him but he would be obviously a bad case to cover for sickness benefits. There was also the type of man who broke a leg, say two years ago, and cut a finger last year and was off work for two weeks. He was apparently prone to accident and therefore could not be accepted.

The definition of incapacity was important. The rule with which he was most familiar provided that sick pay should be available to any member afflicted for more than two consecutive days with illness disabling him from following his calling and not resulting from any disease complaint or weakness that had been concealed at the time of admission to the Society and not resulting from old age. In order to receive sick pay a member had to procure a medical certificate and forward it within 24 hours of obtaining it and he had to produce a certificate every week so long as he was ill. It seemed that friendly societies, with their sick visitors and their District Secretaries, were in a much better position to administer sickness benefits than insurance companies, and that the majority of people, apart from those who needed benefits as large as £1000 a year, could be much better served by a friendly society than by an insurance company. Under friendly society rules it was usually possible to discontinue payment of benefits if a member were reported fit for work after examination by the medical officer. He would like to know whether the policies of an insurance company included any clause permitting the policyholder to appeal to arbitration and what powers insurance companies had to discontinue payment of benefits if a policyholder were considered fit to undertake some sort of work.

While agreeing with the author that it was desirable to insist that a contract of permanent sickness insurance should cease at age 65, it seemed to him that from the point of view of the policyholder it was simply disastrous. Judging from the facts quoted in the paper, none of those policyholders would be entitled to be voluntary contributors to the National Health Insurance and if they were permanently disabled when they arrived at the age of 65 they would be reduced to utter penury. He knew the answer was that they should have effected an endowment assurance at the same time as they took out the permanent sickness policy, but people were not always wise in advance. The author had in part made provision for those unfortunates by the suggestion of a reversionary bonus payable at 65, but he did not know to what extent that would mitigate the defect. He supposed a contract giving a benefit of £1000 a year would have quite a large bonus at 65, but he did not think that it would provide an adequate proportion of that amount for the rest of the man's life.

The importance of occupation in relation to sickness experience could not be too highly stressed. Friendly society members were engaged in all industries and were subject to (a) special diseases, (b) particular types of diseases consequent upon working in a dusty atmosphere, and (c) increased liability owing to accident risks. In the case of friendly societies it was not usually practicable to charge an increased premium and discrimination could be exercised only by declinature. In certain types of friendly society, such as the Holloway, it was possible to form a sub-section of the society in which were placed all the hazardous occupations such as window-cleaners, glass-workers and furnace-hands. That method could also be used in dealing with under-average lives, people who had been ill during the last two years and those who had a family record of tuberculosis.

**Mr E. E. B. Eldridge** said that he had hoped that the author would have dealt with the basis of rates in more detail. He had always doubted whether the aggregate table on which they were formulated was a correct basis. He had felt, judging by his experience, that the select table was the only scientific table on which sickness rates for office use could be based. The deferred benefit, deferred three months or six, was the cover which the average person would take rather than a policy which provided for benefit from the date of disablement. On page 286 it would be noticed that the rate for a benefit of £1 a week terminating at age 60 ranged from 12s. at age 20 to £2 or £2. 5s. at age 50. In considering the case of an applicant at age 20 there was a medical examination but there would be a very limited past experience having a bearing on the future. By the time a person reached the age of 50 there would be a large volume of experience on that particular life. It had been remarked that mental and nervous complaints gave rise to a number of very serious cases. It was obvious that at age 20 such risks had to be allowed for whereas at age 50 in any event there was only a period of ten years during which serious claims could run. He had always felt that if the experience were ascertained on a select basis it would be found there would be very little increase, if any, in the rates of premium as the age at entry increased, and it might result in raising the rates at the lower ages and decreasing them at the higher ages. He knew that he was putting forward views which were contrary to the views held by the majority of people who had dealt with sickness insurance, but those views were based on his experience of underwriting in the way that casualty men underwrote and not on statistics, which unfortunately he had never had an opportunity to compile.

**Mr P. N. Harvey** agreed with Mr Eldridge that the correct method of calculating sickness premiums was on a select basis.

On pages 273-4 of the paper the author had referred to the differing arrangements for linking up periods of sickness for the purpose of assessing benefit payments under ordinary and deferred policies. That might have a material effect on the relative claim rates under the two classes. The point could be illustrated by considering the case of a man who was sick and

then not sick for a number of successive periods of five months. Under an ordinary policy the whole of the periods of incapacity would rank for benefit though benefit would be payable at half-rate after the first six months of linked-up sickness. Under a deferred policy no payment at all would be made, because the waiting period of six months would never have been completed. That was of course an extreme case; it was most unlikely that a person insured under a deferred policy would be so obliging as to arrange his periods of sickness in such a way, but the illustration did bring out the important difference between the two kinds of contract. It suggested that in analysing the experience of a Society those two classes should be kept distinct. It also suggested that the point must be kept in mind in considering the specimen premiums for ordinary and deferred policies set out at the top of page 287, because it would be appreciated that those premiums were based on Manchester Unity sickness rates without adjustment for the circumstances to which he had just referred.

On page 277 the author had referred to the large amount of sickness insurance cover required by some proposers. It would be interesting if he could give some indication of the relation of the claim rate experienced under policies for large amounts to that for the rest of the business.

On pages 283-4 there was a reference to combined benefits which prompted him to remark that the offer of incapacity benefit in the form of the immediate payment of the sum assured in the event of a breakdown in health could be regarded from some points of view as a life assurance with a sickness benefit attached. The cessation of the payment of the premium after the breakdown could be regarded as consisting of a sickness benefit of the amount of the premium for the rest of the duration of the contract, and the immediate payment of the sum assured as a sickness benefit for the amount of the annual discount on the sum which was paid.

The reference at the top of page 288 suggested that the difference between the author and the companies to which he referred was to some extent a matter of form. Each of them made a valuation on the basis of a sickness table which adequately covered the experience. The author had made an additional reserve (page 289) to cover contingencies such as epidemics and possible fluctuations in the experience. The companies also had made an additional reserve but they had called it a reserve for sickness claims outstanding at the valuation date. Whilst an additional reserve was doubtless wholly appropriate, it had the appearance that in part they had made a reserve for part of their liabilities twice. The form of the additional reserve might possibly be connected with a corresponding item "Reserve for outstanding claims" which appeared in the annual accounts for permanent sickness insurance business, which from some points of view might be regarded as a little misleading in that it might be held to suggest that that was the full extent of the reserves required, which of course was not the case.

On page 299 the author, speaking of the subdivision of the Manchester Unity tables into short-period rates in connexion with the National Health Insurance Scheme, had said that a purely mathematical process had been used. It might perhaps be mentioned that in that process material assistance had been derived from the very valuable tables com-

piled by the late Mr William Sutton. In addition, those responsible for the subdivision had had available the proportions of claimants from which they were able to derive the proportions of new claimants.

**Mr C. Rattray, F.F.A.,** said that the feature of the comparatively high sickness rates at the early ages shown in Table 3 was a fairly common one among friendly societies and it was certainly one which he had found in societies with which he was connected. The point had also been brought out in a paper read by Mr Burrows some years ago. The present author had pointed out that it might be due to the panel system. In friendly societies the panel system also appeared to be responsible, but in a different way. It seemed to be much easier for members to produce their medical evidence now that National Health Insurance was open to them.

One speaker had mentioned that societies did not charge an extra for hazardous occupations but in fact some societies did have two tables for sickness benefits, one for members in non-hazardous occupations and another, usually including some such extra as a penny a week for a benefit of 10s. per week, for those who were in hazardous occupations.

The problem presented by a large proportion of members who were permanently ill might be dealt with by excluding them from the examination of the sickness experience, assuming such an examination to be made, so that the experience reflected only the normal cases, and by then valuing the cases of permanent sickness by an annuity which might perhaps be reduced in some way to allow for invalidity.

**Dr A. Hope Gosse** (a visitor) emphasised the value of the permanent contract. When talking to a medical friend he always emphasised how essential it was that he should have a permanent contract and not an annual one. Different types of benefit had been mentioned, immediate and deferred. He thought that everyone in the medical profession should take out an immediate policy but from the point of view of the Society the deferred policy was desirable for a particular class of proposer. In that particular class was the doctor who had a salaried appointment and was entitled to full pay for three or even six months' sickness before his pay was reduced or he was dismissed. It was not desirable for a policy to be issued when a doctor would get a bigger income as long as he remained sick. For those people who were on a salaried basis, and only relatively few of the medical profession were so, the deferred policy was very suitable.

On page 275 the author had referred to partial incapacity. He would view with the greatest regret any attempt by any society which he had to advise to try to decide when partial incapacity ended.

During his twelve or fifteen years as a medical officer he had been pleasantly surprised to find how reliable were the medical reports and what consistently good faith there was on the part of members. One speaker had referred to fraud and malingering. He must have passed and approved from the medical point of view many thousands of policies and he could only recall one case in which he was almost certain that fraud had been deliberately carried out at the time the policy was issued. That was

the case of a man who was accepted on a Wednesday, had paid his cheque on the Thursday and made a claim for six months' benefit for angina pectoris on the Friday. The office enquired when the first attack of angina pectoris had occurred and before replying the policyholder wrote to his medical examiner to enquire the date of his medical examination. He was going to make sure of that date before he answered the question.

It was important that permanent sickness insurance should be confined to persons who would lose their income, probably all their income, as a result of incapacity. Doctors and dentists when totally disabled could not see their patients and therefore their income ceased. That was the incentive to them to get back to work.

On page 277 there was a reference to the medical work on claims procedure. "It is pointless to worry a man who is seriously ill by a demand for reports and examination." It was necessary to exercise a good deal of judgment and perhaps experience of medicine to know when people should be left alone and when it was proper to ask for further particulars. Usually the medical officer's estimate of the duration of the disability could be accepted but now and then there was obviously a very rough estimate. A further report could be required at a time when the policyholder might reasonably be expected to be able to go back to work.

**Mr B. Robertson** found the paper particularly interesting because it confirmed an impression he had had for a good many years, that permanent sickness insurance was quite unsuitable for life assurance companies. For the industrial sections of the population permanent sickness contracts had long been available through the medium of the friendly societies and, in later years, of the Approved Societies under the National Insurance Acts. Control of the claims arising from such contracts was fairly effective owing, in the case of friendly societies, to the zeal of the members generally in seeing that claimants did not remain on the funds unnecessarily long, and, in the case of the Approved Societies, to the system of organised sickness visitation which had been set up. When, however, the issue by insurance companies of individual permanent sickness contracts was considered it could at once be seen that neither of those safeguards was available. It might be said that comparatively little knowledge existed of the rate of sickness, though a volume of information was available as to the rate of sickness claims under certain conditions and in regard to specified occupations. The latter would, however, be of only limited value to an insurance company contemplating undertaking such risks and the difficulty of imposing any effective supervision would be insuperable. The risks would be widely spread geographically, and the fact that a claim for benefit was not automatically linked up with a temporary cessation of income would remove one of the greatest deterrents to unjustifiable demands.

The paper showed the difficulties encountered when dealing with such a special class of lives as was represented by the medical and the dental professions. While it appeared that those difficulties were, in the case of the specialised society, being dealt with satisfactorily, that was no guarantee

that if an ordinary life assurance office undertook such business on a wider scale it would prove practicable or remunerative; and the views he had held on the subject were confirmed by the paper and the debate to which it had given rise.

**Mr H. E. Raynes** said that in addition to the various methods of exit which had been mentioned by the author there was another, which was common with other offices, viz. change of occupation. That had an important effect on the sickness experience, and on any change the consent of the Society should be given to the continuance of the contract. Last week he had noticed a claim under a policy which had been taken out originally by an articled clerk and at the time of the claim it was found that he was receiving benefit from his Trade Union. It was then discovered that he was an engineer earning about £4 a week. The claim was paid but the policy was not renewed. In granting the assurances, offices had primarily in mind the professional classes where there was every inducement to continue in work.

The deferred benefit policy was becoming more and more popular; it was used frequently in connexion with pension schemes where the demand for it was fully justified. The author's normal policy provided six months' full-pay and half-pay thereafter, but probably it would be found that the deferred or disablement experience under such a table would differ from that under the purely deferred benefit. It would be wise to grant deferred benefit policies only to those outside the National Health scheme as there was a tendency when the protection was available to claim for disablement benefit when loss of work was the real cause of loss of income.

The partial incapacity clause which the author had given was, he thought, a little dangerous. It would be noticed that the clause provided for the reduction of the sickness benefit in proportion to the reduction in the income secured by the policyholder on a change of occupation when he found he could undertake some light duties. He thought it was safer to have no such clause in the policy, but to deal with each case on its merits when it arose. In a typical claim a policyholder might say "I can now do light duties. Am I compelled to refrain from them in order to receive benefit under the policy?" In such a case some equitable arrangement could be made with a claimant.

As an instance of the care to be exercised in the underwriting of the business he cited the case of an applicant from a country town in Scotland. The applicant was one of two partners in a firm of accountants. Medical examination had been arranged by the branch without personal contact and it was found subsequently that, there being no other available, the examining doctor was the applicant's own medical attendant. Within six months notice of claim had been given, due to such a degree of myopia as prevented the policyholder from attending to his business. After making further enquiries it was found that the other member of the firm had retired and the business, always small, had almost disappeared. A medical examination of the claimant revealed the fact that at the date of the original examination the extreme nearsightedness of the claimant must have been



obvious from the thick glasses worn. However, it would have been difficult to resist the claim and the Society were now paying under the policy an annuity until age 60. Personal contact with every applicant for individual policies was very desirable.

The author had referred to exclusions of specific diseases. He thought, however, that it was preferable to issue a policy in its ordinary form and if there were any history of a disease which it was desirable to exclude, it was on the whole better to refuse to grant the policy.

On the subject of valuation he found no fault with the ordinary friendly society method for immediate sickness benefits; but for the deferred benefit policies he did not think that the method was altogether satisfactory. The immediate benefit was paid at fairly frequent intervals and even a small society would conform to the expected claims based on its own past experience. The deferred or disablement benefit, however, was a much more remote probability, and when it happened the claim was of long duration and of large amount. A very large experience extending over a long period would be necessary to obtain reliable tables even when conditions were constant. In a small society the divergence from the number of claims expected under such tables and from their expected duration would be large even if the membership, rates and environment conformed to those from which the experience tables were derived. He favoured therefore the American method of the double decrement tables for deferred or disablement benefit policies, existing claims being specifically valued by a disablement annuity factor.

**The President (Colonel H. J. P. Oakley)** said that he was sure that the members would wish him to move, and he knew they would endorse, a hearty vote of thanks to Mr Heath for what was a very practical and workmanlike paper.

Obviously the author had been dealing with professional men. People in receipt of lower incomes were dealt with to a large extent by the friendly societies and by National Health Insurance. There was no doubt that the greatest asset of a professional man was his earning power, and insurance men would agree that assets should be covered by insurance. That earning power would cease at death and therefore life assurance was provided. It would often cease on retirement and so endowment assurance was provided. To the professional man there was the fear of untimely death, there was the hope of retirement but only a vague uncertainty in regard to sickness. It was that vague uncertainty which most actuaries hesitated to incorporate in a life assurance contract which was the clearest of all insurance contracts.

He remembered in his early days that there was some discussion between the directors as to the cause of death, and the actuary had settled the matter by saying "Gentlemen, if he is dead, he is dead." He was not sure that the actuary would have sounded so conclusive about a sickness policy by saying "Gentlemen, if he is sick, he is sick." Death was death, but what was sickness?

Whatever their views, he was quite sure that Mr Heath in his paper had

carried the study of sickness insurance a stage further and they were grateful to him for his contribution.

**Mr E. A. J. Heath**, in reply, said that he still maintained that policies should be issued for 50 guineas a week, if necessary, but he would not issue a policy for that amount without being very well satisfied as to the proposer's earnings. Proposals for as much as 30 guineas a week were frequent and the office had gone so far as to ask for accounts of the practice for the past three years to make sure that the earnings justified the amount. It was a very big problem, but in dealing with professional men whose establishment cost them in the neighbourhood of £1000 a year it was necessary to provide them with sufficient insurance to meet their requirements.

A point had been raised as to arbitration. The general run of the policies made provision for arbitration to be sought, but arbitration was an expensive matter, and a substitute for it had been employed with great success in a number of cases. Arbitration was likely to arise only in the case of exclusions or where it was not certain whether a claimant was incapacitated. The opinion of the claimant's own doctor was first obtained in every case. If there were any doubt the Company then asked for a special examination by its own appointed doctor and the case might have to be considered by the Board. If the evidence were found to be conflicting, an entirely independent examination was suggested, the names of several well-known specialists being submitted to the claimant for him to choose. If both parties were prepared to accept the specialist's report the matter was then finally settled.

The third point was with regard to valuation and he was interested to hear from Mr Raynes the reason for the special reserve for current and chronic claims. He had not related that reserve to the expected heavier rate of sickness from deferred benefit policies and in fact his opinion of such policies was that the experience was generally good.

He agreed that select rates were desirable for the calculation of premiums and he hoped, at a later date, to obtain such rates from the data at his disposal.

**Mr Heath** wrote subsequently as follows:

Two references in my closing remarks may have been looked on as rather casual and I have thought it advisable to amplify them.

With regard to large policies I have investigated all cases where the weekly benefit exceeds 25 guineas. I find that there were 20 such cases at 1 January 1933 and 32 at 31 December 1937, the total number of years of life exposed being 129. There were 23 claims in the quinquennium, totalling 65 weeks' benefit of which 18 weeks were in respect of one policy which has since lapsed. All these claims were in the first 26 weeks and the ratio Actual/Expected by Manchester Unity (A.H.J.) was 45 % as compared with 86 % for the whole immediate business. The deferred benefit experience again confirmed my impressions and the over-all ratio was only 36 %. Admittedly the number of policies in the two main groups of three

and six months' deferment increased from 423 to 893 and the effect of selection is very strong. Even making the extreme assumption, however, that all the sickness was attributable to the original 423 policies, the ratio becomes only 58 %.

With regard to Mr Butt's remarks concerning the minimum point at age 42, I quite agree that the "after 2 years" figures are distorted by the rapid increase in business. I do not, however, see that the "1st 3 months" sickness can be affected to any appreciable extent since the majority of members, except chronic claimants, can be exposed to such sickness. Even a man in the "after 2 years" group can return to work and revert to full pay after six months and so get a certain period of exposure in the first three months. Mr Butt makes the point that persons sick for protracted periods should not be included in short period sickness and I have attempted to correct for this point. My experience is, of course, immature on account of the increase in new business and to measure the effect I have referred to the Manchester Unity experience which presumably can be looked on as an ultimate experience. A rough estimate of the proportion sick for any period is obtained by dividing the sickness rate by 52 and my first experiment with sickness "over 6 months" showed an extremely small percentage. In order to get the maximum effect I then took the whole sickness of the Manchester Unity (A.H.J.) and found that the proportion sick in any period ran from 1.56 % at 22 by steady progression to 2.77 % at age 42. Hence the adjustment to the exposed-to-risk and the corresponding change in the sickness rate does not appear to affect the results to the extent visualized by Mr Butt.