THESIS

ON

SENILE INCONTINENCE

by

J. E. McCLEMONT, M.B., Ch.B,

Assistant Medical Officer,

New Cross Hospital,
Wolverhampton.

DEFINITION.

Senile Incontinence may be defined as loss in the elderly of the ability to control the sphincters of the bladder and rectum, in the absence of co-existing organic disease either of the pelvic organs or of the central nervous system. It is distinct from the terminal incontinence which may occur in dying patients and from the feigned incontinence of the malingerer.

The degree of incontinence varies widely from case to case; in one individual, either faecal or urinary incontinence may occur once or twice in a week; in another, both forms may occur up to a dozen times in twenty-four hours.

The condition imposes a severe restriction on the activities of the sufferer, and indeed, all too often, confines him to bed and condemns him to much tribulation, both mental and physical, for the remaining years of his life. Unless he is able to obtain skilled nursing, troublesome and often fatal complications ensue.

Harassing social and economic problems arise in the home. The incontinent must have separate bedding facilities. The amount of laundry needed is many times in excess of normal requirements. Much time and labour must be expended in changing sheets and carrying out the usual nursing duties. In fact the nature of the condition is as much a burden to the members of his household as it is to the sufferer himself. Difficult as these problems are to contend with in any home, in a working class family they are in most cases beyond solution, and there is little alternative but to transfer the patient to a Public Assistance institution, or to the chronic wards of a hospital.

Senile Incontinence thus defined has long been recognised as a valid and by no means infrequent cause for admission to institutions dealing with chronic cases. The condition is often the sole determining factor in sending the patient to hospital, and indeed may be regarded as a clinical entity. Yet the references to it in medical literature are of the slightest. No reference to it was obtained in any standard medical text-book. There is no word of it in the many books consulted on the care and treatment of old age, nor with one possible American exception (1), is there to be found any article on the subject among the many medical periodicals which the British Medical Association includes in its library. There is a similar dearth of information in the several text-books on nursing

to which reference was made.

A number of reasons suggest themselves for this state of affairs. Voluntary hospitals as a rule have not bed space for chronic and senile cases, and it is in such hospitals that the bulk of clinical investigation is carried out. Again, no urgent medical problem is involved, though it is surprising that the economic problems entailed have not drawn more attention to the condition. Doubtless also, in many instances, the matter is not brought to the attention of medical officers on account of its unpleasant nature and has come to be regarded as being more within the province of the sister in charge, or the wardmaster, than of the doctor. Whatever the reason may be, it is an unfortunate fact that the patient suffering from Senile Incontinence has been, and is, regarded as an unpleasant necessity in whom is to be found little clinical interest and for whom there is no prospect of betterment.

Nevertheless, unattractive as the subject appears to superficial observation, a closer study reveals it to be one of very considerable intrinsic interest, with certain features reappearing so constantly as to suggest a syndrome. Moreover, as will emerge, much may be done to ameliorate the condition.

INCIDENCE.

It is difficult to form any estimate of the extent of the disorder. During eighteen months' experience of middle and upper class general practice, I cannot recall seeing any such case. But in these classes, housing and financial difficulties are less obtrusive than in working class homes; extra nursing and laundry expenses can be more easily met, and under these circumstances, a sense of delicacy may prevent the condition being brought to the notice of the medical man.

Unusual, however, as the condition would appear to be in general practice, it figures largely in the practice of Public Assistance Hospitals; New Cross Hospital, Wolverhampton, admits some 40-50 cases of Senile Incontinence annually. If one considers the large number of kindred hospitals throughout the kingdom, many almost three times as large, it will be realised that the annual admission rate for this condition throughout the country must reach thousands. The condition is not a direct cause of death and never finds its way to the Death Certificate. Further, a Senile Incontinent is usually sent to hospital with a diagnosis of chronic bronchitis or emphysema or perhaps senility, but a talk with the relatives leaves little doubt that the paramount reason for seeking admission is Senile Incontinence. In a curiously large number of cases this procedure is repeated in hospital, the

patient continuing to be classified as a chest or a heart case. Undoubtedly some such condition does co-exist in a large proportion of cases, but as has been pointed out, it would not have brought the patient to hospital had there not been a concomitant incontinence. The reason for this inaccurate classification probably resides in the fact that Senile Incontinence is not a recognised disease, and it no doubt seems better to allocate cases to orthodox categories. Thus, hospital and institutional statistics tend to be of less value than one would expect.

To recapitulate, the condition is more common than appears from figures; such statistics as exist are undependable and err a good deal on the side of underestimation, but it is safe to assume that some thousands of cases are admitted each year to hospitals in this country.

SCHEME OF INVESTIGATION.

In order to investigate the subject and to obtain precise data, twenty-two patients falling within the terms of the definition were selected. It so happened that eleven were females and eleven males. These figures are not to be taken as indicative of the relative frequency of occurrence in the sexes; actually it occurs about twice as commonly in men as in women. A complete systemic examination was carried out, special attention being paid to the central nervous system. Any patient suffering from a disease to which his or her incontinence might be directly attributed was rejected. Thus, one or two cases of enlargement of the prostate were excluded. Similarly, two cases hitherto regarded as of Senile Incontinence, were found to have extensor plantar reflexes and were not included.

The examination was conducted in the following manner:-

(1) A brief description of the incontinence in each patient was obtained, with details as to time and circumstances of onset; whether urinary or faecal incontinence commenced first, and the patient's mental reaction to the condition.

(2) A general impression of the physical condition.

(3) Cardio Vascular System.

(4) Respiratory System.

(5) Gastro Intestinal System.

(6) Rectal Examination.

(7) Urinary Examination - chemical and bacteriological.

(8) Wasserman Reaction.

(9) Observations and simple tests of the mental condition.

(10) Examination of the Central Nervous System.

The details of this examination are to be found in the protocols at the end of the paper.

SYMPTOMATOLOGY.

On the whole, it appeared that an act of incontinence followed a sudden urgency of micturition or of defaecation, with inability to control the sphincters. Pain was not associated with either act. In most cases the condition had been present for months prior to examination; in some cases for years. Little information was gained as to whether the disorder commenced with urinary or faecal incontinence. In a number of instances it was observed that the onset took place when the patient was confined to bed for some other reason such as debility or chronic bronchitis. As a rule the patients showed evidence of self-consciousness when their condition was discussed with them.

The general physical condition varied widely. Some patients were well preserved for their years, but were for the most part confined to bed on account of their incontinence. A minority were feeble and bedridden.

Mentally there was a similar variation. Fourteen of the patients co-operated well; some could read newspapers and discuss the news in a reasonably intelligent way, but the remaining eight experienced a certain amount of difficulty in carrying out the tests satisfactorily. They found trouble, for example, in grasping what was required of them in some of the eye tests, and in the heel-knee test. But in nearly every case the exercise of patience elicited an answer.

It is notoriously difficult to assess mentality. At best, only an impression of the mental capacity can be gleaned. In the examination this impression was attained by conversation with the patient, by observing the facility with which he obeyed instructions during the systemic examination and by applying recent memory retention tests.

For example, the patient was questioned as to what he had had for his last meal. He was also given a simple address to remember, and asked to repeat it some fifteen minutes later. In no case was this address ever remembered quite correctly. The conclusion reached was that in all patients, even in those who co-operated best and appeared most intelligent, there was a varying degree of slowing of cerebration, of senility of manner, or, in other words, evidence of cerebral arteriosclerosis. It was slight and almost imperceptible in some cases; in others it was clearly apparent.

On scrutinising the results of examination of the cardio-vascular systems, the most striking point was that twenty-one out of twenty-two cases suffered from arteriosclerosis, as evidenced by hardening, palpability and tortuosity of the arteries. In six cases there was evidence from the position of the apex beat or on percussion, of cardiac enlargement. In two of these cases, the enlargement could be attributed to organic heart disease. In six the borders were not defined, generally on account of senile emphysema, and in ten the heart appeared to be within normal limits. Blood pressure readings were on the whole surprisingly low, but it must be remembered that the patients were in bed. The average was taken of three sphygmomanometer readings. Examination of the respiratory and gastro-intestinal systems revealed little that was unexpected. Senile emphysema was present in seven instances, chronic or secondary bronchitis in eight, and no abnormalities were observed in the remaining seven. In fifteen cases, the rectum was loaded with a soft faecal mass, in four, scybala were present and in three the rectum was empty. A definite lack of tonus of the rectal sphincter was present in all cases.

Urinary specimens were taken by catheter with full aseptic precautions. Albumin was present in eleven out of twenty-two cases. Sugar and acetone were absent in all specimens, and casts were seen in one specimen only. Slides were made and cultures set up. In fifteen out of twenty-two cases, definite evidence of urinary infection was obtained. Albumimuria when present was always accompanied by evidence of infection. Wasserman reactions were taken and with only one exception were negative. Analysis of the central nervous system likewise revealed little that was unexpected. Absence of superficial abdominal reflexes was noted in fifteen

out of twenty-two cases. Plantar reflexes were flexor in twenty-one cases and indeterminate in the twenty-second. Any possibility of co-existing pelvic or organic nervous disease either as a concomitant or casual factor of Senile Incontinence was thus eliminated.

INVESTIGATION.

The cases having been selected and examined, it was now necessary to obtain accurate data pertaining to the condition. Since the patient suffering from Senile Incontinence is in general confined to bed, all observations were made thus. This, it was felt, permitted of a more accurate picture of the condition as it is generally encountered, and allowed a better comparison being made of the various cases, since they were observed under similar circumstances.

For various reasons, a period of five weeks elapsed between the physical examination and the period of observation. During that time cases 1F.E.N. and 2F.M.W. died of senility. 20M.A.S. died of cardiac failure, and 14M.S.K. was removed from hospital by his relatives.

A report sheet was placed at the head of each bed and note was made of each act of incontinence, whether faecal or urinary, the date and the time. Since the observations were purely to obtain information on the incontinence, occasions on which the bedpan or bottle were used by the patient were not noted. In the last six cases of the series, a check was made on the number of sheets and other items of laundry used per patient per day. A period of eight days was thought to be enough to give an accurate picture of the condition.

The results thus obtained are shown in the protocols.

It will be observed that there was great variation in the degree of incontinence, from one case in which it occurred only on two occasions in eight days to the other extreme of over one hundred times. Urinary incontinence was nearly always more frequent than faecal. Needless to say, each act of incontinence involved a change of one or more sheets, a nightdress, and often other articles of bedclothing and in some cases, pillow covers.

The high degree of incontinence in Case 6F.S.R. will be observed. She must have been changed, owing to misunderstanding of instructions by a nurse, every ninety minutes

on an average throughout her period of observation. Naturally this frequent changing, with the exposure to cold and disturbance of rest which it involved, could not have been good for the patient, and in fact, was not her normal routine. She was, as a rule, changed at two to three hourly intervals, or even less frequently by night; a compromise being made between the necessity of keeping her clean and dry and the need for adequate rest. The result is of considerable interest and demonstrates what an incredible degree Senile Incontinence may reach.

The condition itself, the sufferers therefrom, and some of the attendant circumstances having been described, it is convenient at this point to review the problem and its implications.

Typically the condition occurs in elderly persons of either sex and is present for many months or even years before admission to hospital is sought. Arteriosclerosis is always present with cerebral vascular degeneration. In some cases this is manifested only by slight senility of manner or difficulty in recalling recent events; in others, by definite childishness. There is double incontinence by day and by night. On account, usually, of the social and financial difficulties which arise at home, entrance to a hospital which accepts chronic cases is obtained, and the individual is forced to relinquish his normal existence, in which he might otherwise have been reasonably happy and moderately useful. Once in hospital, he is as a general rule confined to bed. On the face of it, it appears to be most expeditious to deal with incontinent patients thus. Soiled sheets are more easily removed and cleansed than articles of clothing. Under these circumstances, the incontinence is usually progressive and gradually gets worse over a period of years until the patient reaches a stage where hs is confined to bed, often with the consequent disabilities of urine rashes, bed-sores and contractures. His physical and mental faculties undergo a general deterioration.

ECONOMIC ASPECTS.

In this hospital there is a male and female chronic ward each containing thirty patients. On an average, forty of the patients suffer from incontinence, and of these, about twenty from Senile Incontinence. In the remaining twenty, the incontinence is due to such conditions as cerebral haemorrhage and organic nervous disease. The expense entailed in the maintenance of these patients is surprisingly high. It is a fact that the annual

laundry bill for a chronic ward is treble that of either the acute surgical or medical wards which are of similar size. Thus, during a period of investigation extending over several weeks, three hundred and fifty articles on an average were sent to the laundry each week from an acute medical or surgical ward of thirty patients. A ward dealing with chronic but not incontinent patients sent much the same amount. But in a ward where some twenty out of the thirty patients were incontinent, one thousand and fifty articles were sent each week to the laundry.

Where there are incontinent patients in any number laundry facilities must of necessity be out of all proportion to the size of the hospital and stocks of linen and bed attire must be treble those of an ordinary ward.

It is to the incontinent patients of the two specified groups that the extra expense is mainly due. Thus, during the eight-day observation period, the patient 9F.A.C. required twenty-eight sheets and twenty-six nightdresses; 9F.B.M., twenty-one sheets and nineteen nightdresses; 8F.L.L., thirty-nine sheets and thirty-four nightdresses; 4F.M.A., twenty-nine sheets and twenty-seven nightdresses; and 5F.M.A., twenty-seven sheets and twenty-six nightdresses, a total of one hundred and forty-four sheets for five patients, and one hundred and thirty-two nightdresses, in addition to a considerable number of items such as pillowcases, blankets, and bedsocks which had to be changed much more often then would otherwise have been necessary. A really severe case, such as 6F.S.R., requires up to threetimes as much bedlinen as any of those mentioned.

These items, however, do not by any means constitute the whole of the extra expense involved. Extra nursing staff must be on duty night and day to cope with the changing of beds, attention to pressure points, and the numerous other tasks entailed in the nursing of such cases. It is difficult at the present time to obtain nursing staff for a general hospital; in a hospital devoted to chronic cases, the matter is infinitely more troublesome. In this hospital the problem is dealt with by the employment of untrained nurses and male attendants, working in eight hour shifts, and supervised by a trained sister and staff nurse. About one-third more nurses are employed than in acute surgical wards of similar size. Their wage bill amounts to £2357 per annum, this being exclusive of administrative staff such as ward orderlies,

night sisters and porters. The corresponding wage bill for two acute wards is £1610. It will thus be seen that it is less costly to nurse a case of pneumonia than one of senile incontinence over a given period.

WARD ROUTINE

In this hospital it is a routine to change Senile Incontinent patients as often as is necessary, but as explained before, a compromise has often to be made between keeping the patient clean and dry, and allowing for adequate periods of rest and sleep. Special attention must be devoted to backs and pressure points.

An attempt is always made to train male patients to keep a bed bottle in position. Simple as this procedure appears to be, in practice it is of surprisingly little value. For one reason or another, whether it be that the patient falls asleep, or that he forgets about the bottle, or perhaps that he finds it uncomfortable, it is generally misplaced when required.

Bedpans are supplied at regular and frequent intervals, and the desirability of calling for and using these facilities when required is impressed on the patient. Again, this apparently simple plan is of more theoretical than practical value and difficulties are encountered very similar to those mentioned above. The patients seem to experience too great an urgency to await the arrival of the utensils, or, as they express it themselves, are "taken unawares." Nevertheless the measure is of some value. Case 7F.A.C. was frequently incontinent before admission, but only on two occasions during the period of observation in bed. This appeared to be due to regular and frequent nursing attention.

A triangular napkin as used in infants may be applied and is sometimes of value. Frequent enemeta, astringents and purgatives have been tried with scant success; moreover these measures could have no effect on the urinary incontinence.

TREATMENT.

An impression existed amongst the nursing staff that although incontinent patients could most conveniently be dealt with in bed, a number showed some improvement when they were up and about the ward. This

was confirmed in Case 21M.G.H., and it was decided to obtain exact information on the matter. Whenever possible, patients were got out of bed and allowed to sit up in armchairs. Those who could, were encouraged to move about the wards, and they were permitted to stay out of bed as long as they wished - generally from ten o'clock in the morning till the evening.

It was possible to get thirteen patients up; the remaining five could not be got out of bed on account of general debility or contractures. As explained above, four of the original cases for various reasons were no longer available.

It was a matter of comment how well an apparently bedridden patient could adapt him or herself to the changed conditions. Toilet facilities were provided for those who could not go to the lavatories. As before, an observation period of eight days was decided upon, and similar records were kept. These were started after the patient had been up for a few days and had become accustomed to the changed environment.

The results are shown in the protocols at the endof the paper and are contrasted in the graphs with the records taken when the patient was in bed.

It will be seen that the improvement out of bed in eleven cases is marked, and in two, slight. Incontinence, which occurred altogether on four hundred and forty -nine occasions during the eight-day observation period with the patients in bed, only occurred one hundred and sixty-nine times with the patients up and about, a reduction amounting to two-thirds. In no instance during this second period was the condition cured, but in some cases it was almost so. It is noticeable that only fourteen out of one hundred and sixty-nine of the occasions on which incontinence now occurred were between 10 a.m. and 6 p.m., periods when the patients were up and about; the remaining one hundred and fifty-five acts of incontinence or 90%, occurred between 6 p.m. and 10 a.m., when the patients were in bed. The sudden drop in the incidence of the condition is thus mainly by day; but there is also a vast improvement in the 6 p.m. - 10 a.m. figures over the corresponding ones of the bed observation period.

With this improvement in the incontinence, the ancillary problems of nursing and laundry were simplified. For example the five patients 9F.A.O., 3F.B.M., 8F.L.L.,

4F.M.A. and 5F.M.A., who required two hundred and seventy-six sheets and nightdresses in the bed observation period, only required twenty-six articles of laundry during the second observation period. This was a reduction of 90% and represented a saving of no fewer than two hundred and fifty articles. There was a corresponding saving in other items of laundry such as pillowslips, blankets and bedsocks. It is certain that had these thirteen patients not received the treatment described and been got out of bed for as long periods as possible, there would have been no amelioration of their condition, but on the contrary there would have been a steady deterioration until they were hopelessly bedridden.

In patients who have been wholly or partly confined to bed on account of Senile Incontinence, it is evident that the condition can almost always be greatly improved by the adoption of the methods outlined above.

Some three weeks after the second set of observations was completed, 21 M.G.H. and 7 F.A.C. had ceased to be incontinent and were discharged from hospital. This was gratifying both from the patients' and from a medical point of view. It also meant that beds were released for new patients; otherwise they would have been occupied indefinitely by two patients becoming progressively more costly to the hospital, who, as time went on would have made increasing demands on the attention of the nursing staff.

AETIOLOGY.

It remains to advance an explanation of the cause or causes of Senile Incontinence. A general impression exists among those who have to deal with the condition that it is largely due to slothfulness. This view is not in agreement with the clinical findings. As has been seen, the patients were questioned in an endeavour to ascertain their mental reactions to the incontinence. A majority showed embarrassment; a defiant attitude or a denial was interpreted as a reaction of self-consciousness. A number of those questioned had a clear insight into their condition, and their distress at the state of affairs was genuine. Again, if laziness be the (causal) casual factor, the condition ought surely to be exhibited from time to time in young or middle-aged persons, but so far as is known, no such patients have been admitted to this hospital. When a man or woman has led a busy and useful life, as had many of the cases described, and has had the misfortune

to become incontinent, a diagnosis of slothfulness is inconsistent, and an obvious faute de mieux.

Freud and his followers have expressed their views on the psychological significance of the excretory activities of the aged and the youthful alike, but Senile Incontinence as met with in the cases described, seems to have no such element in its aetiology.

The high incidence of urinary infection will have been observed. It occurred in fifteen out of twenty-two patients. Of these, ten were females and five males. It is probable that in both sexes it followed the incontinence as an ascending infection arising from the sodden tissues at the distal end of the urethra. This is recognized as the commonest mode of passage of infection into the female bladder, and this accounts for the higher incidence of infection observed in the female patients. Cystitis is thus an incidental rather than a casual factor. In any case, it has the demerit of being applicable to half the symptoms only.

Dodd (2) has pointed out that faecal incontinence sometimes occurs in acute illness when a patient is constipated, and a large scybalous mass collects in the rectum. This sets up an irritative condition of the rectal wall with discharge of mucus, and by its bulk causes impairment of the action of the rectum and its sphincter. This no doubt does happen from time to time, but does not apply to the cases which have been described. Rectal examination revealed scybala to be present in only four cases, and even then not in sufficient amount to cause distension or mechanical interference with the rectum or sphincter, nor was any mucoid discharge observed. Again the explanation would apply to one aspect of the incontinence only.

It has been suggested that the erect posture favours a more efficient action of the abdominal and pelvic musculature with improved control of bowel and bladder. It is doubtful if this could account for the relatively sudden improvement which takes place on getting the patient up, and even if it did rapidly improve the tonus of the muscles of the pelvic floor, it is difficult to see how it could affect the sphincters which, after all, are the muscles chiefly involved.

It then remains to find an explanation of the condition which takes into account the following salient factors:-

1. The presence of generalised arteriosclerosis in twenty-one out of twenty-two cases.

2. Presumptive evidence of cerebral arteriosclerosis in all cases.

3. The dramatic improvement on getting the patient up.

The following hypothesis takes cognisance of these facts and is consistent with the clinical findings.

Control over the functions of micturition and defaecation is carried out through reflex loops, afferent and efferent, running to the spinal centres of bladder and rectum from cortical areas from which emanate voluntary or meditated impulses. It is recognised that one result of disturbance of cortico-efferent bladder control may be a state in which the patient, although completely conscious of all events occurring in his bladder, loses to a greater or less extent, voluntary control of micturition. He cannot hold his water at will; no sooner does the desire come on than he must respond immediately (3). In the cases here described, it is suggested that such a disturbance of the cortico-efferent control mechanism is present.

Individuals who come to suffer from Senile Incontinence are subjects of a pre-existing condition of generalised arteriosclerosis, in which the higher control centres of bladder and bowel are possibly, though not necessarily, more affected than other areas of the cortex. These individuals may lead a normal and even active existence, but should they be confined to bed by ill-health, for example, or take to the semi-invalid life adopted by so many aged people, a fall in blood pressure results and continues while the individual remains thus. Owing to the state of relative hypopiesis, there is insufficient pressure of blood to maintain an efficient circulation in the sclerosed vessels of the cerebral cortex. The cortical cells receive an inadequate supply of nutrition and oxygen, and disturbance of function occurs. In the case of the areas regulating micturition and defaecation, the result is a state of incontinence. When the patient again becomes ambulant, a rise in blood pressure at once takes place. This is a well recognised physiological fact and its occurrence has been confirmed in the present cases. The readings are given in the protocols. It was not demonstrated in all instances, but the general principle holds good. The raised pressure is now sufficient to cope with the increased resistance offered by the sclerosed vessels, and results in an improved supply of oxygen and nourishment to the cortex. The cortical cells can function more efficiently and in particular, the voluntary centres of

bladder and rectum can re-assert their control over the involuntary or reflex centres with resulting improvement in the symptoms.

This explanation takes into account all the clinical findings and is based on a well recognised physiological phenomenon. The blood pressure is the only factor demonstrably altered by the change from the recumbent to the erect posture. Thus, case 21M.G.H. could be rendered incontinent or practically free from symptoms in turn, three of four times a week, simply by being put to bed or by being got up; his degree of incontinence varied as his blood pressure. Similarly during the second observation period, 90% of the occasions on which incontinence occurred were between 6 p.m. and 10 a.m., when the patients were in bed. The remaining 10% were between 10 a.m. and 6 p.m., when the patients were up and about. As in many instances in medicine, a vicious circle is established which must be broken before improvement can be brought about.

The objection might be raised that when the patients were out of bed they could attend to their toilet requirements more easily, and that the improvement could be attributed to this simple fact. The objection is not valid since, with the patient up and about, there is a marked improvement, not only in the diurnal, but also in the nocturnal figures for the corresponding records with the patient wholly confined to bed. Moreover the chronic wards in this hospital are exceptionally well staffed and all patients receive close and individual attention. As has been pointed out, the main obstacle to completely efficient nursing is the feeling of urgency, or of being "caught unawares", which precludes successful attention to the patients' toilet no matter how numerous or assiduous the nurses.

The question arises as to whether Senile Incontinence is not a new entity which has appeared in consequence of the great increase in recent years of institutional facilities for the care of the aged. Traditionally the gaffer or grammer is pictured sitting in the ingle neuk and not passing the declining years in bed. Moreover, in the past, for lack of nursing at home, bed sores and intercurrent infections may have brought the condition in many cases to a speedy termination.

In discussing the dearth of literature on Senile Incontinence reference has been made to the article by Langworthy, Jarvis and Lewis, bearing on the subject.

It deals with twenty-one cases of urinary incontinence in a chronic hospital, for the most part due to well-known brain or cord lesions. A group of six cases of "diffuse cerebral damage" is mentioned and two illustrative cases are described. The first is a neuro-syphiltic. The description of the second is as follows:-

> "The patient W.G. coughed constantly and was incontinent of urine and feces during the examination. There was moderate mental deterioration. Bilateral Hoffman reflexes were present. The knee and ankle jerks were normally active; there were no Babinski reflexes and no ankle clonus. The diagnosis was arterio-sclerosis with diffuse cerebral changes."

This is undoubtedly an example of what has been described above as Senile Incontinence and is the only reference to the condition which we have been able to find in the literature. It seems remarkable that so common, so distressing, and so costly a disorder should so long have escaped careful study and description.

SUMMARY AND CONCLUSIONS.

Cases of incontinence of urine and faeces have been studied in male and female patients admitted to the "chronic" wards of a Public Assistance hospital on account of this disability.

A plea is made for the recognition of Senile Incontinence as a clinical entity.

It is demonstrated that manifestations of Senile Incontinence are worse when the patient is confined to bed and that they improve when he or she becomes ambulant.

All the patients studied showed evidence of arteriosclerosis. It is suggested that the symptoms of Senile Incontinence are attributable to interference with the function of the cortical centres controlling the acts of defaecation and micturition and that this is due to impairment of the cerebral circulation by the arteriosclerosis. Confinement to bed lowers the blood pressure and brings about a further diminution of the flow of blood in the sclerotic vessels. Ambulant treatment raises the blood pressure and thus improves the cerebral circulation.

Patients suffering from Senile Incontinence should therefore not be nursed in bed, but should be given every

encouragement to become ambulant.

REFERENCES.

1. Langworthy, Jarvis & Lewis, Southern Medical Journal, October 1937.

2. Dodd, H.J. British Medical Journal, Sept. 12th 1938.

3. Wright, Samson. Applied Physiology 1937.

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P R O T O C O L S.

GROUP I. General systemic examination and observations on the incontinence in each patient. The examinations of the urine and of the central nervous system have been tabulated for purposes of clarity and brevity.

GROUP II. Records of incontinence with the patients in bed.

GROUP III. Records of incontinence with the patients up and about.

GROUP IV. Graphs contrasting the degree of incontinence in each patient as recorded in II and III. One tenth of an inch in a vertical direction represents one act of incontinence.

GROUP V. Table showing the blood pressures with the patient in bed and ambulant.

G R O U P I.

General Systemic Examination.

Observations as to onset of incontinence and the patient's reaction to it.

Tables showing results of examination of urine and of central nervous system.

Case I. F.T.N. Aet 86. Admitted on account of senility and myocarditis. Unable to give any history as to onset of incontinence.

Examination: a frail old lady.

Cardiovascular System:	apex beat in sixth left interspace $4\frac{1}{2}$" from mid sternal line. Sounds almost inaudible, but regular. Blood pressure $\frac{110}{70}$. Arteriosclerosis well marked.
Respiratory System:	senile emphysema only.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces and a few small scybalous masses.
Wassermann Reaction:	negative.
Cerebration:	poor, childish in manner. Co-operated poorly.

Died before accurate records of incontinence could be taken, but was regularly changed six times in twenty-four hours.

Case 2. F.M.W. Aet. 74. Admitted on account of senility. Confined to bed many months prior to admission. Could give no history as to onset of her incontinence and refused to discuss it.

Examination: a frail old lady.

Cardiovascular System:	apex beat $4\frac{1}{2}$" from mid sternal line in sixth left interspace. Sounds of poor quality, but regular. Blood pressure $\frac{150}{80}$. Arteriosclerosis well marked.
Respiratory System:	crepitations at both bases.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum full of soft faeces.
Wassermann Reaction:	negative.
Cerebration:	fair; co-operation in examination not good.

Case 3. F.B.M. Aet. 80. Admitted on account of senility and emphysema. Had been confined to bed for some months prior to admission, during which time incontinence commenced. Did not know whether faecal or urinary incontinence commenced first. Questioned on the subject, she heatedly denied that she was incontinent.

Examination: a frail old lady.

Cardiovascular System:	cardiac borders not defined. Sounds of poor quality, but regular. Ventricular systolic murmur, best heard at apex. Blood pressure $\frac{145}{80}$. Arteriosclerosis well marked.
Respiratory System:	senile emphysema.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum empty.
Wassermann Reaction:	negative.
Cerebration:	somewhat confused mentally, but co-operated well enough in examination.

Case 4. F.M.A. Aet.81. Admitted because she could not be nursed at home on account of her incontinence. Unable to state how long she had been thus, or whether urinary or faecal incontinence commenced first. Questioned, she said she did not know why she could not control herself and was worried about the trouble it gave the nurses.

Examination: a frail old lady.

Cardiovascular System:	heart within normal limits. Sounds of fair tone; occasional extra systoles. Blood pressure $\frac{195}{100}$. Arteriosclerosis well marked.
Respiratory System:	occasional rhonci only.
Alimentary System:	nil abnormal detected.
Rectal Examination:	soft faecal mass in upper rectum.
Wassermann Reaction:	negative.
Cerebration:	fairly good; co-operated well.

Case 5. F.M.A. Aet 78. Admitted on account of mental confusion. Unable to state how long she had been incontinent and whether urinary or faecal incontinence had commenced first. Questioned on the subject, she assumed a defiant attitude, and said she did not intend to be so; that there was no need to be ashamed as her sister allowed it at home.

Examination: a frail old lady.

Cardiovascular System:	left cardiac border $4\frac{1}{2}$" from mid sternal line right border at mid sternal line. Sounds of fair tone and regular; short aortic diastolic murmur. Blood pressure $\frac{100}{5}$. Arteriosclerosis well marked.
Respiratory and Alimentary Systems:	nil abnormal detected.
Rectal Examination:	small amount of soft faeces present.
Wassermann Reaction:	positive.
Cerebration:	poor, confused in manner.

Case 6. F.S.R. Admitted on account of senility. Became incontinent three months prior to examination, and fourteen days after admission. Not known which form of incontinence commenced first. Questioned on her incontinence she stated she did not know why it occurred. She did not appear concerned about the matter.

Examination: a feeble old lady.

Cardiovascular System:	heart within normal limits. Blood pressure 160/85. Arteriosclerosis well marked.
Respiratory System:	occasional rals at bases.
Rectal Examination:	rectum loaded with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	rather poor, but co-operation satisfactory.

Case 7. F.A.C. Aet. 78. Admitted on account of increasing incontinence. Had been incontinent for years. Did not know which form had commenced first. Questioned, she wished she could stop it and that it came on her before she could prevent it. She appeared selfconscious on the subject.

Examination: an old lady, fairly well preserved.

Cardiovascular System:	heart within normal limits; sounds regular and of fair tone. Blood pressure 160/90. Arteriosclerosis well marked.
Respiratory and Alimentary Systems:	nil abnormal detected.
Rectal Examination:	small scybalous mass size of walnut.
Wassermann Reaction:	negative.
Cerebration:	quite good; co-operation satisfactory.

Case 8. F.I.L. Aet. 80. Admitted on account of general debility. Had been incontinent for years, but getting worse prior to admission. Did not know which form of incontinence commenced first. Questioned, she said she was unable to help it. Did not appear selfconscious.

Examination: an old lady quite well preserved for her years.

Cardiovascular System:	heart within normal limits. Sounds regular and of fair tone. Blood pressure 154/90. Arteriosclerosis well marked.
Respiratory and Alimentary Systems:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	rather poor; senile in manner.

Aet 80.

Case 9. F.A.O./ Admitted on account of increasing incontinence. Had been incontinent for eighteen months. Notascertained which form commenced first. Questioned, she vigorously denied being incontinent.

Examination: a frail old lady.

Cardiovascular System:	cardiac borders not defined. Sounds inaudible. Blood pressure 145/90. Arteriosclerosis well marked.
Respiratory System:	senile emphysema.
Alimentary System:	nil abnormal detected.
Wassermann Reaction:	negative.
Cerebration:	quite good, but slightly senile in manner.

Case 10. F M.M. Aet. 85. Admitted on account of senility. Had been incontinent for some months prior to admission. It was not ascertained which form of incontinence commenced first. Questioned on the subject she said she could not help it, and appeared selfconscious.

Examination: a frail old lady.

Cardiovascular System:	heart within normal limits. Tone poor; sounds regular. Blood pressure 130/100. Arteriosclerosis not detected.
Respiratory System:	rals and rhonci throughout chest.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	poor. Senile in manner.

This patient died shortly after the systemic examination and no exact records of the incontinence were obtained. But she was normally changed about six times in twenty-four hours.

Aet 60.

Case 11. F J.C. / Admitted on account of increasing incontinence which had been present for several months. Not ascertained which form of incontinence commenced first. Questioned, she said she never knew when she was going to soil the bed and that she felt ashamed.

Examination: a frail old lady.

Cardiovascular System:	heart within normal limits. Sounds of poor quality, but regular. Blood pressure 130/78. Arteriosclerosis well marked.
Respiratory System:	Chronic Bronchitis.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	poor.

Case 12. M R.M. Aet 65. Admitted on account of bronchitis and senility. Incontinence commenced six months prior to admission. It was not ascertained whether urinary or faecal incontinence commenced first. On being questioned, he showed considerable embarrassment and stated he got no warning and could not help it.

Examination: a frail old man.

Cardiovascular System:	Cardiac borders not defined. Sounds of poor quality but regular. Blood pressure 115/60. Arteriosclerosis well marked.
Respiratory System:	senile emphysema only.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum filled by soft faecal mass.
Wassermann Reaction:	negative.
Cerebration:	poor. Senility of manner.

Case 13. M H.I. Aet 76. Admitted on account of increasing incontinence which first commenced some years prior to admission. It was not ascertained which form of incontinence commenced first. Questioned on the matter, he stated he could not help it and was not apparently selfconscious.

Examination: a well preserved man.

Cardiovascular System:	heart within normal limits. Sounds of good quality and regular. Blood pressure 130/80. Arteriosclerosis well marked.
Respiratory and Alimentary Systems:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces.
Cerebration:	fairly good. Co-operation satisfactory.

Case 14. M S.K. Aet 80. Admitted on account of incontinence which had commenced a few months previously. It was not ascertained whether urinary or faecal incontinence began first. Questioned he stated he was "caught unawares" and appeared rather selfconscious.

Examination: a fairly well preserved man.

Cardiovascular System:	left cardiac border four inches to left of midsternal line. Right border at left sternal margin. Sounds of fair quality and regular, Blood pressure 132/84. Arteriosclerosis well marked.
Respiratory and Alimentary Systems:	nil abnormal detected.
Rectal Examination:	a few small scybalus masses.
Wassermann Reaction:	negative.
Cerebration:	fair. Slight senility of manner.

Withdrawn from Hospital by relatives before records were made. An estimate of the degree of incontinence may be had from the fact that he was changed about five to six times each twenty-four hours.

Case 15. M J.T. Aet 78. Admitted on account of senility. Incontinence commenced some four months prior to admission. Urinary incontinence commenced first. Questioned, he stated he was quite unable to hold his water as his nerves were weak. He appeared somewhat selfconscious.

Cardiovascular System:	heart within normal limits. Sounds of fair quality and regular. Blood pressure 130/80. Arteriosclerosis well marked.
Respiratory and Alimentary Systems:	nil abnormal detected.
Rectal Examination:	a few small scybalous masses.
Wassermann Reaction:	negative.
Cerebration:	fair; co-operation satisfactory.

Case 16. M J.S. Aet 66. Admitted on account of increasing incontinence which commenced some eighteen months prior to admission. It could not be ascertained whether urinary or faecal incontinence commenced first. Questioned on the subject he at first denied being incontinent, but later adopted a defiant attitude and said he could not help it as he did not know when it was coming.

Examination: a fairly well preserved man.

Cardiovascular System:	heart within normal limits. Sounds of good quality and regular. Blood pressure 130/100. Arteriosclerosis well marked.
Respiratory System:	occasional fine rhonci only.
Alimentary System:	nil abnormal detected.
Rectal Examination:	numerous scybalous masses.
Wassermann Reaction:	negative.
Cerebration:	fair; co-operation satisfactory.

Case 17. M H.A. Aet 84. Admitted on account of senility. Had been incontinent six months prior to admission. It could not be ascertained whether urinary or faecal incontinence commenced first. Questioned, he said the matter was a mystery which he could not understand. He was definitely embarrassed.

Examination: a fairly well preserved man.

Cardiovascular System:	cardiac borders not defined. Sounds of poor quality but regular. Blood pressure 140/80. Arteriosclerosis well marked.
Respiratory System:	senile emphysema only.
Alimentary System:	nil abnormal detected.
Wassermann Reaction:	negative.
Cerebration:	good; co-operated well.
Rectal Examination:	rectum full of soft faeces.

Case 18. M J.R. Aet 79. Admitted on account of senility and incontinence. Incontinence of urine commenced first, some two years prior to admission. Questioned, he said he experienced a feeling of urgency which gave him no time to obtain a bed bottle, and that he could not help it as he was "taken unawares." He was rather self-conscious.

Examination: a fairly well preserved man.

Cardiovascular System:	cardiac borders not defined. Sounds of poor quality but regular. Blood pressure 150/90. Arteriosclerosis well marked.
Respiratory System:	senile emphysema.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum empty.
Wassermann Reaction:	negative.
Cerebration:	good; co-operation satisfactory.

Case 19. M. J.F. Aet 69. Admitted on account of incontinence and general debility. Confined to bed for some weeks prior to admission and became incontinent during that time. Had been incontinent three months at time of examination. Stated that he became incontinent of faeces first. Questioned, he stated that he was incontinent in response to a feeling of urgency. Did not appear embarrassed.

Examination: a frail emaciated man.

Cardiovascular System:	cardiac borders within normal limits. Sounds of moderate quality and regular. Blood pressure 130/85. Arteriosclerosis well marked.
Respiratory System:	a few rals at bases and occasional rhonci.
Alimentary System:	nil abnormal detected.
Rectal System:	soft faecal mass.
Wassermann Reaction:	negative.
Cerebration:	good; co-operation satisfactory.

Case 20. M A.S. Aet 62. Admitted on account of cardiac failure. Urinary and faecal incontinence commenced at the same time, two months prior to systemic examination, when patient was confined to bed in hospital. Stated that his incontinence was due to a feeling of urgency and when this was present, could not wait the arrival of a bedpan or bottle.

Examination: congestive cardiac failure.

Cardiovascular System:	left cardiac border four inches from the midsternal line. Right border at midsternal line. Sounds of poor quality, but regular. Short systolic murmur, best heard over the mitral area. Blood pressure 155/96. Arteriosclerosis well marked.
Respiratory System:	slightly impaired resonance at both bases, respiratory murmur vesicular; numerous râls at both bases.
Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	good; co-operation satisfactory.

Case 21. M G.G. Aet 71. Admitted on account of cellulitis of foot. Became incontinent a few days after admission. Urinary and faecal incontinence commenced simultaneously. Questioned, he stated " it comes on unawares," or "comes on all of a sudden and gives me no chance." He did not appear worried about the matter.

Examination: a well preserved man.

Cardiovascular System:	left cardiac border four inches from midsternal line. Right border not defined; sounds regular, but of poor quality. Short systolic murmur audible over mitral area. Blood pressure 140/74. Arteriosclerosis well-marked.
Respiratory System:	senile emphysema and occasional fine rhonci.

Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum filled with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	good; co-operation satisfactory.

Case 22. M J.B. Aet 64. Admitted on account of incontinence. It was not ascertained when this commenced, but urinary incontinence commenced first. Questioned, he stated it took him unawares and he could not wait. He did not appear embarrassed.

Examination: a frail old man.

Cardiovascular System:	cardiac borders not defined. Sounds of poor quality, but regular. Blood pressure 140/100. Arteriosclerosis well marked.
Respiratory and Alimentary System:	nil abnormal detected.
Rectal Examination:	rectum loaded with soft faeces.
Wassermann Reaction:	negative.
Cerebration:	good; co-operation satisfactory.

URINARY EXAMINATION.

Case No.			Culture.	Film.	Reaction.	Albumin.	Sugar.	Acetone.
1	F	E.N.	No growth	Numerous pus cells	Alkaline	Fair amount.	Nil	Nil
2	F	M.W.	No growth	Scanty pus cells	Acid	Nil	Nil	Nil
3	F	B.M.	No growth	Scanty coliform bacilli	Alkaline	Trace	Nil	Nil
4	F	M.A.	No growth	Nil	Acid	Nil	Nil	Nil
5	F	M.A.	No growth	Few red cells and scanty pus cells.	Acid	Trace	Nil	Nil
6	F	S.R.	Numerous b. coli	Scanty pus cells numerous coliform bacilli.	Acid	Nil	Nil	Nil
7	F	A.C.	Numerous b. coli	Few pus cells and many coliform bacilli.	Acid	Nil	Nil	Nil
8	F	L.L.	Scanty b. coli	Scanty pus cells and few coliform bacilli.	Acid	Nil	Nil	Nil
9	F	A.O.	Numerous b. coli	Fair numbers of pus cells and many coliform bacilli.	Acid	Fair amount	Nil	Nil
10	F	M.M.	No growth.	Nil	Acid	Nil	Nil	Nil
11	F	J.C.	No growth	Few pus cells only.	Acid	Trace	Nil	Nil
12	M.	R.M.	Scanty b. coli	Numerous pus cells and scanty b. coli.	Acid	Large amount.	Nil	Nil
13	M	H.I.	Scanty b.coli	Scanty pus cells and coliform bacilli.	Neutral	Trace	Nil	Nil
14	M	S.K.	No growth	Scanty pus and epithelial cells.	Acid	Nil	Nil	Nil
15	M	J.T.	No growth	Nil	Acid	Nil	Nil	Nil
16	M	J.S.	No growth	Nil	Acid	Nil	Nil	Nil
17	M	H.A.	No growth	Very scanty red cells.	Acid	Nil	Nil	Nil
18	M	J.R.	No growth	Numerous pus cells.	Acid	Trace	Nil	Nil
19	M	J.F.	No growth	Scanty pus cells.	Acid	Trace	Nil	Nil
20	M	A.S.	Scanty b coli	Many pus and red cells. Scanty coliform bacilli.	Acid	Fair amount	Nil	Nil
21	M	G.H.	No growth	Nil	Acid	Nil	Nil	Nil
22	M	J.B.	No growth	Scanty pus cells Hyaline casts.	Acid	Trace	Nil	Nil

THE EXAMINATION OF CENTRAL NERVOUS SYSTEM

		Case No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		M = Male F = Female	F	F	F	F	F	F	F	F	F	F	F	M	M	M	M	M	M	M	M	M	M	M
			E.N.	M.W.	B.M.	M.A.1	M.A.2	S.R.	A.C.	L.L.	A.O.	M.M.	J.C.	R.M.	H.I.	S.K.	J.T.	J.S.	H.A.	J.R.	J.F.	A.S.	G.H.	J.B.
NERVES CRANIAL	PUPILS EYE MOVEMENTS	Right	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Left	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Up	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Down	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Reaction on Convergence	+	A	+	+	Not Observed	?	+	Not Observed	Not Observed	+	Right Present Left Absent	+	+	+	+	+	+	?	+	+	+	+
		Nystagmus	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
		Size	M	M	S	S	S	S	S	S	S	S	S	S	S	M	M	M	M	S	S	S	M	M
		Shape	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
		Reaction to Light	+	Sluggish	+	+	+	+	+	+	+	+	Right + Left Absent	+	+	+	+	+	+	+	+	+	+	+
		Visual Acuity	Very Poor	Fair	Fair	+	+	+	+	+	Poor	Poor	Poor	Poor	Poor	Poor	Poor	+	+	+	+	Poor	+	+
		Visual Fields	A	A	+	+	+	+	+	+	Left + Right B	+	Left B Right +	+	+	+	Left B Right +	+	+	+	+	+	+	+
		Ocular Fundi	Right C Left D	Left + Right D	+	Silver Wire Arteries	S W A	+	+	S W A	Left Retinal Haemorrhage Right D	E	Left D Right S W A	S W A	E	E	Left D Right D Small Patches of Degeneration	S W A	S W A	S W A	+	Retinal Degeneration of Both fundi	+	+
	TRIGEMINAL	Muscles of Mastication	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Corneal Reflexes	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Sensation of Face	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	FACIAL	Movements Upper	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		(a) Voluntary Lower	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		(b) Emotional Lower	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	8TH	Hearing	A ? Poor	Poor Both ears	+	+	+	+	+	+	+	+	+	Poor F	+	+	+	+	+	+	+	+	+	+
	10TH	Palate Movements	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	12TH	Tongue Movements	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Posture of limbs Outstretched	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
UPPER LIMB		Paralysis	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
		Wasting	Yes	No	Slight	Yes	Slight	No	No	No	Yes	No	Slight	No	No	No	No	No	No	No	No	Yes	Yes	No	No
	INVOLUNTARY MOVEMENTS	Swaying	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
		Chorea	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
		Tremor	No	Yes	No	Coarse	No	No	No	No	No	Coarse	No	Coarse	No	No	Coarse	No	No	No	Coarse	Yes	No	No
		Voluntary Power	+	+	+	+	+	+	+	+	+	+	+	Poor	+	+	+	+	+	+	Poor	+	+	+
		Muscular Tone	+	+	Poor	Poor	+	Moderate	+	+	+	+	+	Poor	+	+	+	+	+	+	Poor	Poor	+	+
		Passive Movements	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	TENDON REFLEXES CO-ORDINATION	Eyes Open	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Eyes Closed	A	+ Tremor	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Flexor Jerks	+	+	+	+	+	+	+	+	Absent	+	+	+	+	+	+	+	+	+	+	Absent	+	+
		Extensor Jerks	+	+	+	+	+	+	+	Absent	Absent	Absent	Absent	+	+	Absent	Absent	+	+	Absent	Absent	Absent	+	+
	SENSATION	Pin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Touch	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Poor
		Stereognosis	A	Poor	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Abdominal Reflexes	Absent	Absent	Absent	+	Absent	Absent	Absent	Absent	+	Absent	Absent	Absent	Absent	Absent	Absent	Absent	+	+	+	+	Absent	+
	SENSATION SPINAL COLUMN	Pin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Touch	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Poor
		Deformity	No	Scoliosis	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
		Tenderness	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
		Rigidity	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LOWER LIMB TRUNK		Wasting	Yes	Bilateral Contraction and Arthritis of Knees	Slight	Slight	No	Yes	No	No	No	Yes	No	Slight	No	No	No	No	No	No	Yes	Yes	No	No
		Voluntary Power	Poor	Poor	Fair	Fair	Fair	Poor	Fair	Fair	Fair	Poor	Fair	Poor	Fair	+	Poor	Fair	Fair	Fair	Poor	Poor	+	+
		Muscular Tone	Poor	Poor	Fair	Fair	+	Poor	+	+	+	Poor	+	Poor	+	+	Poor	+	+	+	Poor	Poor	+	+
	SENSATION TENDON REFLEXES CO-ORDINATION	Eyes Open	A	Impossible owing to Arthritis	+	+	+	A	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+
		Eyes Closed	A		+	+	+	A	+	+	+	+	+	A	+	+	+	+	+	+	+	+	+	+
		Knee Jerks	+	+	+	+	+	+	+	+	+	++	+	+	+	+	Slight	+	+	+	Slight	Absent	Right + Left ? +	+
		Ankle Jerks	+	+	+	+	+	+	+	Absent	+	Absent	Absent	+	+	+	Absent	+	+	Absent	Absent	Absent	+	+
		Plantar Reflexes	↘	↘	↘	↘	↘	G	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
		Pin	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		Touch	No	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

A = Non-co-operation ↘ = Flexor G = Indeterminate F = Senile Degeneration ▱ = Equal in size M = Medium
B = Limited or absent on account of cataract D = Not seen on account of cataract + = Normal S = Small
C = Vitreous opacities and old retinal haemorrhage E = Not seen on account of early cataract O = Circular ++ = Exaggerated

G R O U P II.

Records of incontinence with

the patients in bed.

2 F.I.W.

Date	Time	Urine	Faces
22.8.40	6 a.m	1	+
	10	1	
	12	1	
	1 p.m	1	1
	3	1	
	4	1	1
	6	1	
	9	1	
	10		1
	11		1
23.8.40	10 a.m	1	
	7	1	1
	9	1	
	10	1	
	11	1	1
	1 p.m	1	
	3	1	
	4	-	1
	5.15	1	1
	6	1	1
	10	1	
24.8.40	2 a.m	1	
	5	1	
	7	1	
	8	1	1
25.8.40	8 a.m	1	1
	9	1	
	10	1	
	12		
	3 p.m		1
	6		1
	7	1	
	12	1	
27.8.40	2 a.m	1	
	3	1	
	4	1	
	5.15	1	
	6	1	1
	7	1	
	9	1	
	12	1	
	1 p.m	1	
	2		1
	3		1
	4		1
	5	1	
	6		1

Date	Time	Urine	Faeces
27.8.40	7 p.m	1	-
	8	1	
28.8.40	7 a.m	1	
	8	1	1
	9	1	
	10	1	1
	11	1	
	12	1	
	1p.m	1	1
	7	1	
	9	1	1
	10	1	
	12	1	1
29.8.40	2 a.m	1	1
	5	1	
	7	1	1
	8	1	
	9	1	1
	10	1	
	12	1	
	2 p.m	1	1
	4		1
	6	1	1
	8	1	
	10	1	
30.8.40	2 a.m	1	
	5	1	
	6	1	1
	9	1	1
	10	1	1
	11.30	1	
	12.30	1	1
	2 p.m	1	
	3		1
	6	1	1
	8	1	
	9	1	
	10	1	
IN BED		73	35

3 F.I.M

Date	Time	Urine	Faeces
13.9.40	4.45 a.m	1	
	4.30 p.m	1	
14.9.40	3.15 a.m	1	1
	6.30 p.m	1	
15.9.40	5.15 a.m	1	
	8.45	1	
	12.30 p.m	1	
	6 p.m	1	
	10.50	1	
16.9.40	4.15 a.m	1	
	6 p.m	1	
17.9.40	4.45 a.m		
	12.40 p.m	1	
	8.0	1	
18.9.40	3.50 a.m	1	
	6 p.m	1	
	11 p.m	1	
19.9.40	4.50 a.m	1	
20.9.40	9.15 a.m	1	
	7.45 p.m	1	-
IN BED		19	1

21 sheets

19 nightdresses

4 F.M.A.

Date	Time	Urine	Faeces
13.9.40	5 a.m	1	-
	10.45	1	1
	12.45	1	
	6.15	1	
14.9.40	1.30 p.m	1	1
	6.30	1	
15.9.40	12.15a.m	1	
	4.15 p.m	1	
	8 a.m	1	
	9.30	1	
	7 p.m	1	
16.9.40	4.45 a.m	1	
	3.10 p.m	1	1
	9.30	1	
17.9.40	11.45 a.m	1	
	4.20 p.m	1	
	7 p.m	1	
	11	1	
18.9.40	3.30 a.m	1	
	9.0	1	1
	12.45 p.m	1	1
	6.30	1	
19.9.40	10.45	1	
20.9.40	6.30 a.m	1	
	10.50	1	
	1.30 p.m	1	
	4	1	
	5.30	1	
IN BED		28	5

29 sheets

27 nightdresses

5 F.M.A.

Date	Time	Urine	Faeces
13.9.40	4.40 a.m	1	1
	5.45	1	
	8	1	
	12.45 p.m	1	1
	5.20	1	
14.9.40	8.0 a.m	1	
	11.20 p.m	1	1
15.9.40	11.20 a.m	1	
	4.15 p.m	1	
	10.45	1	
16.9.40	4.15 a.m	1	
	3.15 p.m	1	
	5.10	1	
	10.20	1	1
	10.30	1	
17.9.40	3.30 a.m	1	
	11.10 p.m	1	
18.9.40	8.15 a.m	1	
	10.45 p.m	1	
19.9.40	4.50 a.m	1	
	10.45	1	
	4.20 p.m	1	
	9.30	1	
20.9.40	5 p.m	1	
	7 15	1	
		25	4

27 sheets

26 nightdresses

Date	Time	Urine	Faeces
22.8.40	1 a.m	-	1
	2		1
	3	1	
	6	1	
	8		1
	10	1	1
	12 noon		1
	1 p.m	1	1
	2	1	
	3	1	1
	5	1	1
	6	1	1
	8	1	1
	9	1	1
	10	1	1
	11		1
	12		1
23.8.40	1 a.m		1
	3	1	1
	5	1	
	6	1	1
	7	1	1
	8	1	1
	9	1	1
	10	1	1
	11	1	
	1 p.m	1	1
	4		1
	5		1
	6		1
	7		1
	8		1
	10	1	-
24.8.40	2 a.m		1
	3	1	1
	4	1	1
	5	1	
	7	1	1
	8	1	1
	9	1	1
	10	1	1
	12	1	1
	1 p.m	1	1
	3	1	
	5		1
	6	1	
	8	1	1
	9	1	1
	10	1	

Date	Time	Urine	Faeces
24.8.40	11 p.m	-	-
	12	-	1
25.8.40	2 a.m	1	1
	5	1	
	6	1	1
	7	1	
	9	1	1
	10		1
	11	1	1
	1 p.m	1	1
	2	1	1
	3		1
	4		1
	5	1	-
	6	1	1
	8	1	1
	11	1	
26.8.40	2 a.m		1
	5	1	
	7	1	1
	9	1	1
	10	1	1
	11		1
	12		1
	1 p.m		1
	4		1
	6		1
	7	1	1
	9	1	1
	10	1	1
	12	1	1
27.8.40	1 a.m		1
	2	1	1
	4	1	
	5	1	
	7	1	
	8	1	1
	9	1	
	12	1	
	2 p.m		1
	5	1	1
	7	1	1
	8	1	1
	9	1	
	11	1	
	12	1	1
28.8.40	1 a.m	1	1
	2		1
	4	1	1

Date	Time	Urine	Faeces
28.8.40	5 a.m	-	1
	6	1	1
	7		1
	8	1	
	9	1	1
	10		1
	2 p.m	1	1
	4	1	
	5	1	1
	6	1	
	9	1	1
	10	1	1
	12		1
29.8.40	1 a.m		1
	2	1	1
	3		1
	4		1
	6	1	1
	8	1	1
	9	1	1
	10	1	1
	2 p.m	1	1
	3	1	
	5	1	1
	6	1	1
	7		1
	9	1	1
	10	1	1
	11	1	1
	12	1	1
		92	100

7 F.A.C.

Date	Time	Urine	Faeces
22.8.40	8 p.m	1	-
23.8.40	2 p.m	1	
		2	0

No further incontinence to 30.8.40

8 F.L.L.

Date	Time	Urine	Faeces
8.9.40	4.15 a.m	1	-
	8	1	
	10 a.m	1	1
	4 p.m	1	
	8 p.m	1	
9.9.40	5.20 a.m	1	
	9	1	1
	12.30 p.m	1	
	6.30	1	1
	10 p.m	1	
10.9.40	12.45 a.m	1	1
	8. a.m	1	
	6.30 p.m		1
	10. p.m	1	
11.9.40	1 a.m	1	
	1 p.m	1	
	3.30	1	
	7.40	1	
12.9.40	1.30	1	
	5.30		
	8. a.m	1	
	1. p.m	1	
	6	1	1
	9 p.m	1	
12.9.40	4.50 a.m	1	
	10.15 a.m	1	
	12.30 p.m	1	
	10 p.m.	1	
14.9.40	2.30 a.m	1	
	12.15 p.m	1	
	5.20	1	
	11.15 p.m	1	
15.9.40	5 a.m	1	
	9.15 a.m	1	
	9.15 p.m	1	
	11.20 p.m	1	
		34	6

39 sheets
34 nightdresses

9.F.A.O.

Date	Time	Urine	Faeces
1.9.40	3.32	1	-
	8.40	1	1
	6 pm	1	
	10.5	1	
2.9.40	4 a.m	1	
	10.30	1	
	5.50 p.m	1	
	10 p.m	1	1
3.9.40	3 a.m	1	
	4.30 p.m	1	
	8.40 p.m	1	
	11.30 p.m	1	
4.9.40	2 a.m	1	
	5.10	1	
	11.30	1	
	6.50 p.m	1	
5.9.40	3.30 a	1	
	1.40 p	1	
	9.40	1	
6.9.40	2.30 a.m	1	1
	11 a.m	1	
	9 p.m	1	1
7.9.40	3.30 a.m	1	
	9.30 p.m	1	
8.9.40	2.30 a.m	1	1
	8. a.m	1	1
	3.50 p.m	1	
	10.40 p.m	1	
		28	6

28 sheets
26 nightdresses

11 F J C.

Date	Time	Urine	Faeces
30 8 40	2 a.m	1	-
	6	1	
	8 p.m	1	
	10	1	
31 8 40	6 a.m	1	
	8	1	1
	10	-	-
	2	1	-
1 9 40	10	1	-
	6 p.m	1	1
	10	1	
2 9 40	10 a.m	1	
	2 a.m	1	1
	6 p.m	1	
	9.45	1	
3 9 40	2.30	1	
	10 a.m	1	1
	2 p.m	1	
	6	1	
	10	1	
4 9 40	2.45 am	1	1
	2.15 pm	1	1
	6.30	1	
5 9 40	2.30 am	1	
	6 a.m	1	
6 9 40	6	1	
	10	1	
	6 p.m	1	
	7.30	1	1
	10	1	
	12 m.n	1	
IN BED		30	7

13 M.H.I.

Date	Time	Urine	Faeces
16 8 40	2 a.m	1	1
	10	1	1
17 8 40	6	1	1
	10 a.m	1	
11 8 40	2	1	1
	6	1	
	11	1	1
	2 p.m	1	
	6	1	
19 8 40	2 a.m	1	
	6	1	
	10	1	1
	2 p.m	1	
	6	1	1
20 8 40	6 a.m	1	
	10	1	1
	2 p.m	1	
	6	1	
	10	1	
21 8 40	3 a.m	1	1
	5	1	1
	6 p.m	1	1
	10	1	1
22 8 40	3 a.m	1	1
	7	1	
	10	1	
	3 p.m	1	1
	6	1	
23 8 40	2 a.m	1	1
	6 p.m	1	1
	10	1	
IN BED		31	16

15 M.J.T.

Date	Time	U.	F.
2.8.40	2.0 a.m	1	1
	6.0	1	
	10.0	1	
	12.0.	1	
	6.0 p.m	1	
	10.0	1	
3.8.40	2.0 a.m	1	1
	4.0	1	
	6.0	1	
	7.0	1	
	10.0	1	1
	1.0 p.m	1	
	6.0	1	
	10.0	1	
4.8.40	1.0 a.m	1	
	3.0	1	1
	6.0	1	
	2.0 p.m	1	
	6.0	1	
	10.0	1	
5.8.40	2.0 a.m	1	1
	10.0	1	
	6.0	1	
	2.0 p.m	1	
	5.0	1	
	10.0	1	
6.8.40	2.0 a.m	1	
	5.0	1	
	10.0	1	1
	2.0 p.m	1	
	3.0	1	
	6.0	1	
	10.0	1	1
7.8.40	2.0 a.m	1	1
	5.0	1	
	7.0	1	
	9.0	1	
	11.0	1	
	2.0 p.m	1	
	10.0	1	1
8.8.40	2.0 a.m	1	
	6.0	1	
	10.0	1	1
	3.0 p.m	1	
	6.0	1	
9.8.40	2.0 a.m	1	1
	5.0	1	
	9.0	1	
	12.0	1	
	2.0 p.m	1	
	10.0	1	-
	IN BED.	51	11

16 M.J.S.

Date	Time	U.	F.
12.8.40	2.0 a.m	1	
	10.0	1	1
	2.0 p.m	1	
	6.0	1	
	10.0	1	
13.8.40	6.0 a.m	1	1
	9.0	1	
	10.0 p.m	1	
14.8.40	2.0 a.m	1	
	6.0	1	1
	10.0	1	
	10.0 p.m	1	1
15.8.40	2.0 a.m	1	
	6.0	1	
	8.30 p.m	1	1
16.8.40	2.0 a.m	1	
	6.0	1	
17.8.40	2.0 a.m	1	
	6.0	1	
18.8.40	6.0 a.m	1	
19.8.40	6.0 a.m	1	1
	4.0 p.m	1	1
	IN BED.	22	7

17 M.H.A

Date	Time	URINE	Faeces
12 8 40	10 a.m	-	1
	6.15p.m		1
13 8 40	8 a.m		1
	6.30 pm	1	1
14 8 40	10 a.m	1	1
	2 p.m	1	1
	6	1	1
15 8 40	2 a.m	1	1
	2 p.m	1	1
	6 p.m	1	1
16 8 40	2 a.m	1	1
	6		1
	12.30 pm		1
	2	1	1
	4	1	1
	6	1	1
17 8 40	2 a.m	1	1
	10	1	1
	12 10	1	1
18 8 40	6 a.m	1	1
	10	1	
	6 p.m	1	1
19 8 40	2 a.m	1	1
	11	1	1
	6 p.m	1	1
	10	1	
IN BED.		21	24

18 M.J.R.

Date	Time	Urine	Faeces
23 8 40	1 a.m	1	-
	2	1	
	8	1	
	5 p.m	1	
24 8 40	8 a.m	1	
	3	1	
	8	1	
	5 p.m	1	
25 8 40	2 a.m	1	
	6 p.m	1	
26 8 40	2 a.m	1	1
	6	1	
	7	1	
	10 p.m	1	
27 8 40	2	1	
	6	1	
	10	1	
28 8 40	10 a.m	1	1
	6 p.m	1	
	10	1	
29 8 40	2 a.m	1	
	6	1	
	8	1	
	10 p.m	1	
30 8 40	2 a.m	1	
	6	1	
	7 p.m	1	
IN BED.		27	2

19. M.J.F.

Date	Time	Urine	Faeces
22.8.40	1.a.m	1	1
	6	1	1
	9	1	
	10	1	
	12	1	1
	4p.m		1
	10	1	1
23 8 40	2		1
	6		1
	10		1
	2 p.m	1	1
	8	1	
24 8 40	4 a.m	1	1
	10		1
	6 p.m	1	1
	10	1	
25 8 40	4 a.m		1
	6		1
	10		1
	4 p.m		1
	6	1	1
	10	1	1
	12 m.d	1	
26 8 40	2	1	1
	4	1	
	4		1
	4.20	1	
	6.30	1	1
	10 a.m	1	1
27 8 40	2	1	1
	9	1	
	1		1
	3		1
	6	1	1
	10	1	
28 8 40	2 a.m	1	1
	9	1	
	3 p.m		1
	6	1	1
	10	1	
29 8 40	6 a.m	1	
	8		1
	10	1	1
	2 p.m	1	
	6	1	1
		31	32

21. M.G.H.

Date	Time	Urine	Faeces
22.8.40.	2.a.m	1	-
	10 a.m	1	-
	4 p.m	1	
	10	1	
23 8 40	1 a.m	1	
	10 a.m	1	
	5 p.m	1	1
24 8 40	6	1	1
	10 p.m	1	1
25 8 40	8 a.m	1	
	10 a.m	1	1
	2 a.m		1
	6 p.m	1	1
	10 p.m	1	
26 8 40	12 m.n	1	
	2 a.m	1	1
	4	1	1
	5 p.m	1	
	6.30 pm	1	1
	9 p.m	1	
	10	1	
	9 a.m		1
27 8 40	5 p.m	1	1
	6 p.m	1	1
	10 p.m	1	1
28 8 40	6 a.m	1	
	10 p.m	1	
29 8 40	2 a.m	1	
	6 a.m	1	
	8 p.m	1	
	10 p.m	1	
		29	13
	IN BED.		

22 M.J.B

Date	Time	Urine	Faeces
22.8.40	2 a.m	1	-
	8	1	
	9	1	1
	6 p.m	-	1
	10	1	1
23 8 40	1 a.m	1	
	2	1	
	8	1	
	10	1	
	2 p.m	1	
	6	-	1
	10	1	
24 8 40	2 a.m	1	
	4	1	
	6	1	1
	10	1	1
	2 p.m	1	1
	6	1	1
	10	1	
25 8 40	2 a.m	1	
	6 a.m	1	
	10	1	
	2 p.m	1	
	3	1	1
	10	1	1
26 8 40	12.30am	1	
	2	1	1
	6	1	
	8	1	
	1 p.m	1	
	7.30	1	1
	10 p.m	1	
27 8 40	2 a.m	1	1
	6	1	
	10	1	1
	3 p.m	1	
	6	1	1
	9	1	
	10	1	
28 8 40	2 a.m	1	
	11	1	
	2 p.m	1	1
	3	1	
	6	1	1
	8	1	
	10	1	

Date	Time	Urine	Faeces
29 8 40	2 a.m	1	1
	6	1	
	8	1	
	4 p.m	1	
	6	1	1
	10	1	
IN BED		50	19

12 M.R.M.

Date	Time	Urine	Faeces
3.9.40	2 a.m.	1	1
	8.30	1	
4.9.40	2.45 a.m	1	
	6.0	1	
	10.0	1	
	6.30 p.m	1	1
	9.40	1	
5.9.40	3.0 a.m	1	
	6.0	1	
	8.15	1	
	2.10 p.m	-	-
	10.0	1	
6.9.40	2 a.m	1	
	6	1	
	9.15	1	1
	2.0 p.m	-	-
	6.10	-	-
	10.0	-	-
7.9.40	2.0 a.m	1	
	6.20	1	
	8.20 p.m	1	1
	10	1	
8.9.40	2.0 a.m	1	
	10.p.m	1	
9.9.40	2.30 a.m	1	1
	6.20.a.m	1	
	8.25	1	
10.9.40	2.0 a.m	1	
	6.40	1	
	9.10	1	
11.9.40	2.0. a.m	1	
	6.35	1	
	8.55	1	
	7.30 p.m	1	1
	9.30	1	
IN BED		31	6

G R O U P III.

Records of incontinence with the patients up and about.

3 F.B.M.

Date	Time	U.	F.
25.9.40	9.30 a.m	1	
	3.50 p.m	1	
26.9.40	2.30 a.m	1	
27.9.40		-	
28.9.40		-	
29.9.40		-	
30.9.40	3.0 a.m	1	-
1.10.40		-	
2.10.40		-	
Up and about		4.	0.

3 sheets and 1 outfit used.

An outfit comprises three garments.

5 F.M.A.

Date	Time	U.	F
25.9.40	2.30 a.m	1	-
	7. p.m	1	
26.9.40	1.30 a.m	1	
27.9.40		-	
28.9.40		-	
29.9.40		-	
30.9.40		-	
1.10.30	3.0 a.m	1	
2.10.40	10.0 a.m	1	-
		5.	-

3 sheets
2 outfits

4. F.M.A.

Date	Time	U.	F.
25.9.40	2.40 a.m	1	-
26.9.40	3.0 a.m	1	
27.9.40		-	
28.9.40		-	
28.9.40		-	
30.9.40		-	
1.10.40	6.0 a.m	-	1
2.10.40		-	-
Up and about		2	1

3 sheets used.

7 F.A.C

Date	Time	U	F
	8 days observation up and about No incontinences 19th 30th		
		-	-

8 F.L.L.

Date	Time	U	F
25.9.40	2 a.m.	1	-
26.9.40	3 a.m.	1	
27.9.40		-	
28.9.40		-	
29.9.40		-	
30.9.40		-	
1.10.40		-	
2.10.40	4 a.m.	1	-
Up and about		3	-

3 Draw sheets used

9 F.A.O.

Date	Time	U	F
19.9.40		-	-
20.9.40		-	-
21.9.40		-	-
22.9.40		-	-
23.9.40		-	-
24.9.40	3.40 p.m.	1	-
25.9.40	6. 0 p.m.	1	
26.9.40	12.50 p.m.	-	1
Up and about		2	1

2 sheets
1 outfit soiled

11 F.J.C.

Date	Time	U	F
12.9.40	2.15 a.m.	1	1
	5.35	1	1
	9.40 p.m.	1	
13.9.40	2.10 a.m.	1	1
	6.0 a.m.	1	
	10.0	1	
	2. 0 p.m.	1	
	5.45 p.m.	1	
	9.30	1	
14.9.40	2.0 a.m.	1	1
	5.0 p.m.	1	
	9.30	1	
15.9.40	2.0 a.m.	1	1
16.9.40	9.30 p.m.	1	1
17.9.40	2.15 a.m.	1	
	4.0	1	
	6.0 p.m.	1	
	8.0	1	
18.9.40	2.30 a.m.	1	
19.9.40	3.0 a.m.	1	1
	8.0	1	
	3.0 p.m.	1	
	10.0 p.m.	1	
Up and about		23	7

13 M.H.I

Date	Time	U	F
6.9.40	2.0 a.m	1	1
	6.0	1	
	10.0	1	
	6.0 p.m	1	
	10.0	1	1
7.9.40	2.0 a.m	1	1
	6.15	1	
	9.25	1	
	10.0 p.m	1	
8.9.40	2.0 a.m	1	1
	6.0	1	
	9.0	1	
	2.0 p.m	1	
	5.0	1	
	9.0	1	
9.9.40	2.45 a.m	1	1
	6.5	1	
	9.35	1	
10.9.40	2.0 a.m	1	
	6.30	1	
	7.45 p.m	1	1
	10.0 p.m	1	
11.9.40	2.0. a.m	1	
	6.40	1	1
	9.30	1	
	7.30 p.m	1	
	9.30	1	
12.9.40	2.15 a.m	1	
	9.30	1	
	6.40	1	1
	10.30 p.m	1	
13.9.40	2.30 a.m	1	
	6.20	1	
	8.45	1	
	10.0 p.m	1	
		35	8

15. M.J.T.

Date	Time	U	F
6.9.40	6.10 a.m	1	-
	10.15	1	
	6.15 p.m	1	1
	10.0	1	
7.9.40	2.0 a.m	1	
	6.30	1	
	7.0	1	
	3.0 p.m	1	1
	6.15 p.m	1	
	10.0	1	
8.9.40	2.0 a.m		1
	6.0	1	
	8.50	1	
	7.30 p.m	1	
	10.0	1	
9.9.40	2.45 a.m	1	1
	6.30	1	
	8.50 p.m	1	
	9.30	1	
10.9.40	6.45 a.m	1	
	9.0	1	
	7.45 p.m	1	
	10.0 p.m	1	
11.9.40	2.0 a.m	1	
	6.20	1	
	9.15	1	
	10.0 p.m	1	
12.9.40	2.0 a.m	1	
	6.0 a.m	1	
	8.45	1	
	6.20 p.m	1	
	10.30	1	
13.9.40	2.30 a.m	1	
	6.20	1	
	8.45	1	
	4.0 p.m	1	
	8.0	1	
Up and about		36	4

16 M.JS.

Date	Time	U	F
5.9.40	2.0 a.m	-	-
	6.10	1	
	11.47		1
	1.15 p.m	1	
6.9.40	2.0 a.m	1	1
	6.15	1	
	8.15	1	
7.9.40	8.30 a.m	1	
8.9.40	2.0 a.m	1	
	8.45	1	
9.9.40	8.30 a.m	1	
10.9.40		-	-
11.9.40	2.0 a.m	1	
	6.25 a.m	1	
12.9.40	2.0 a.m	1	1
	8.30 a.m	1	
Up and about		13	3

17 M.H.A.

Date	Time	U	F
8.9.40	2.0 a.m	1	1
	6.0	1	
9.9.40		-	-
10.9.40		-	-
11.9.40		-	-
12.9.40	2.0 a.m	1	
13.9.40	10 p.m		1
14.9.40	6.25 a.m	1	
	8.50	1	1
	10.5 p.m		1
15.9.40	2.45 a.m	1	
Up and about		6	4

18 M.J.R.

Date	Time	U	F
5.9.40	2.15 a.m	-	-
	6.15 p.m	1	
6.9.40	2.15 a.m	-	
	6.0 a.m	1	1
	7.15 p.m	1	
	10.0 p.m	-	-
7.9.40	6.0 a.m	1	
	8.50	1	
	3.0 p.m	-	
	9.0	-	-
8.9.40	6.0 a.m	-	-
	4.30 p.m	-	-
9.9.40	5.30 a.m	-	-
	4.0 p.m	-	-
10.9.40	2.0 a.m	-	-
	9.20 p.m	1	
11.9.40	5.20 a.m	-	-
	8.50 a.m	1	
12.9.40	5.10 a.m	-	-
	9.15 a.m	1	
	6.5 p.m	-	-
	10.25	-	-
Up and about		8	1

Date	Time	U	F

21 M.G.H.

Date	Time	U	F
3.9.40		-	-
4.9.40	10.0 a.m	1	
5.9.40		-	-
6.9.40		-	-
7.9.40	6.0 a.m	1	
8.9.40		-	-
9.9.40		-	-
10.9.40	6.0 a.m	1	
Up and about		3	-

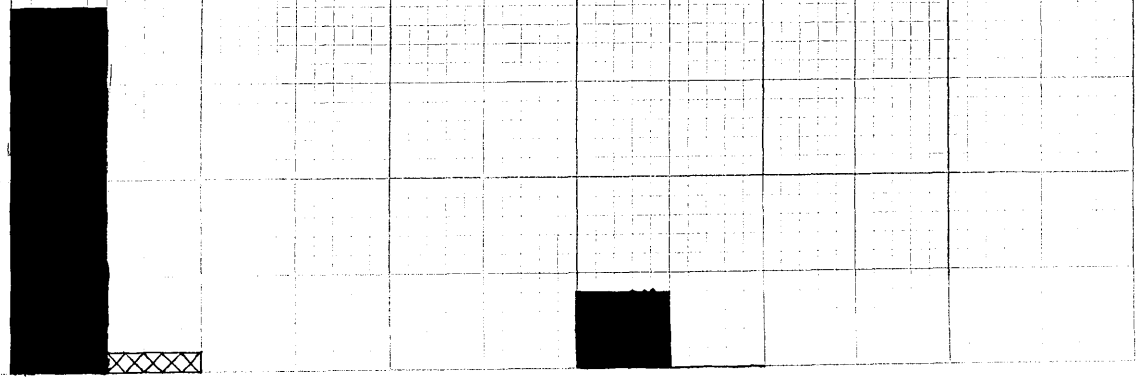
G R O U P IV.

Graphs contrasting the degree of incontinence in each patient as recorded in II and III. One tenth of an inch in a vertical direction represents one act of incontinence.

Case 3F. B.M.

■ Urinary Incontinence.

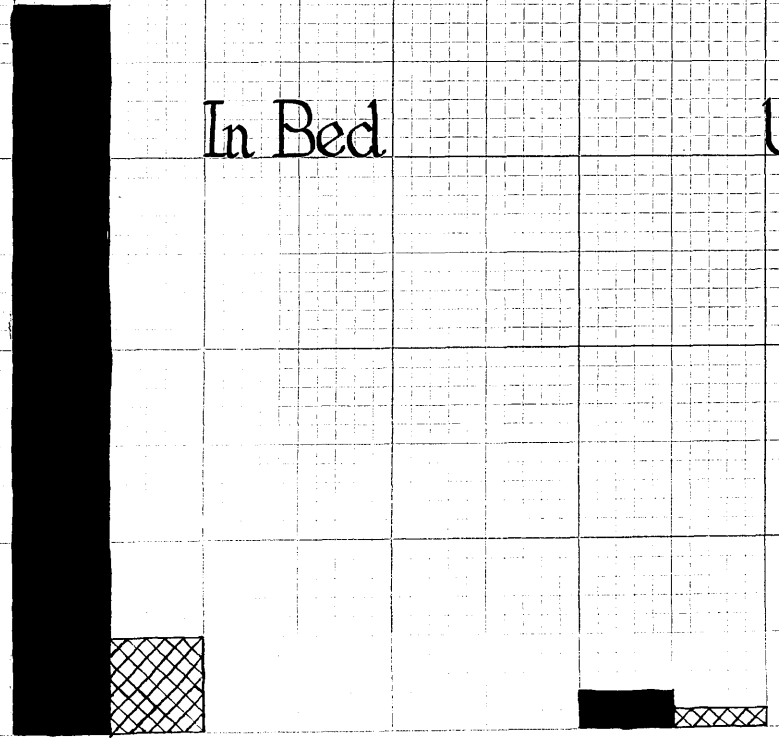
▩ Faecal Incontinence.



Case 4F. M.A.D.

■ Urinary Incontinence.

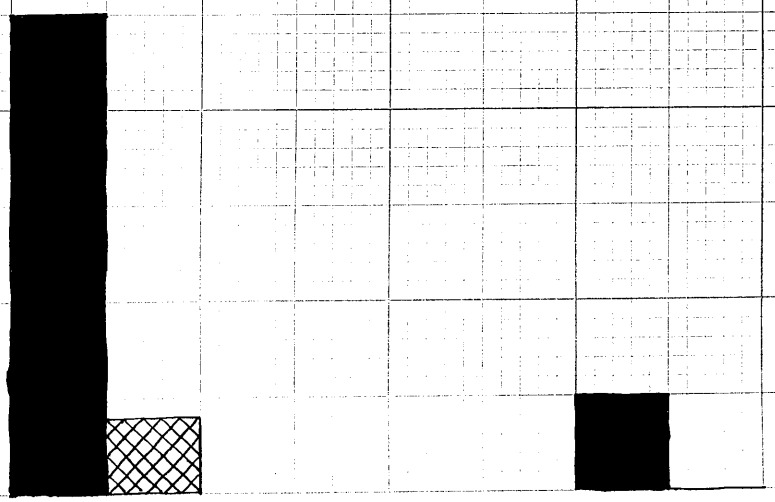
▨ Faecal Incontinence.



Case 5F. M.A(2)

■ Urinary Incontinence.

▩ Faecal Incontinence.



Case 7 F.A.C.

■ Urinary Incontinence.

▨ Faecal Incontinence.

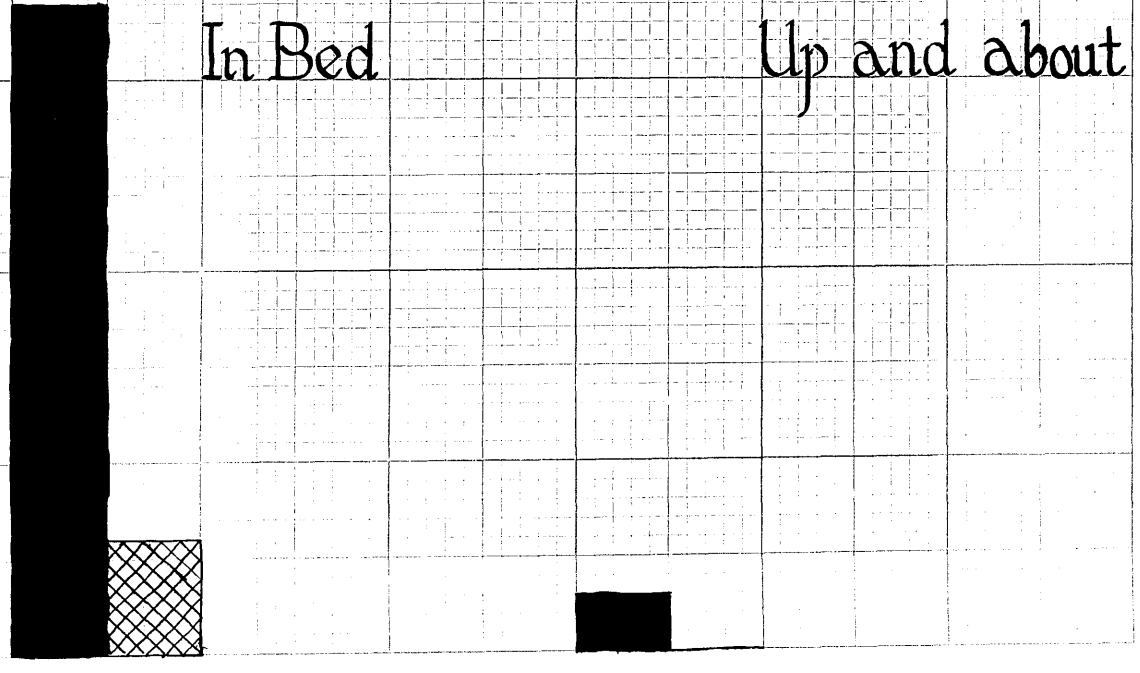
In Bed

Up and about

Case 8F. L.L.

■ Urinary Incontinence.

▨ Faecal Incontinence.



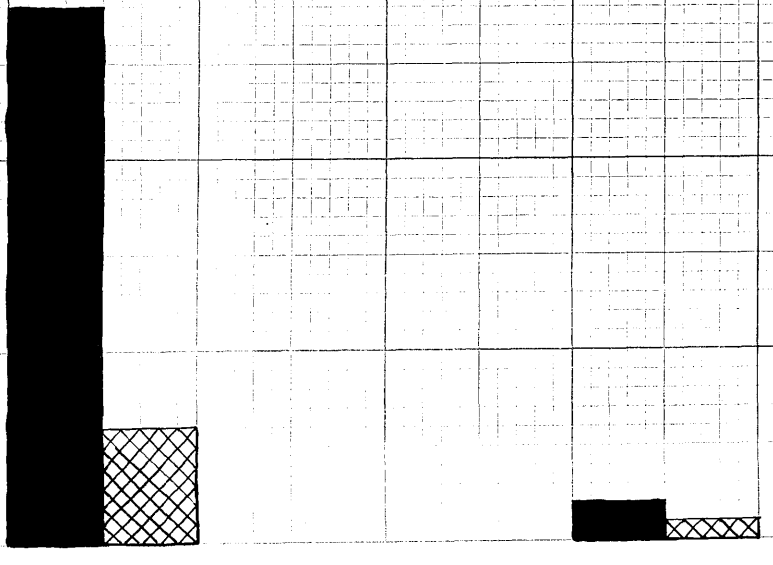
Case 9 F. A.O.

■ Urinary Incontinence.

▩ Faecal Incontinence.

In Bed

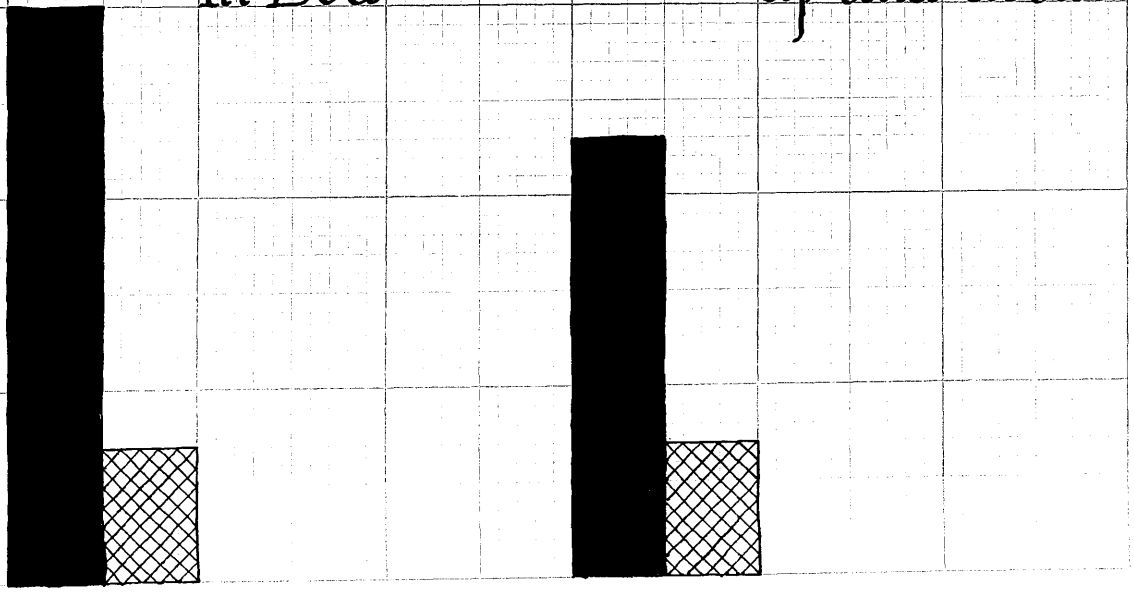
Up and about



Case 11 F. J.C.

■ Urinary Incontinence.

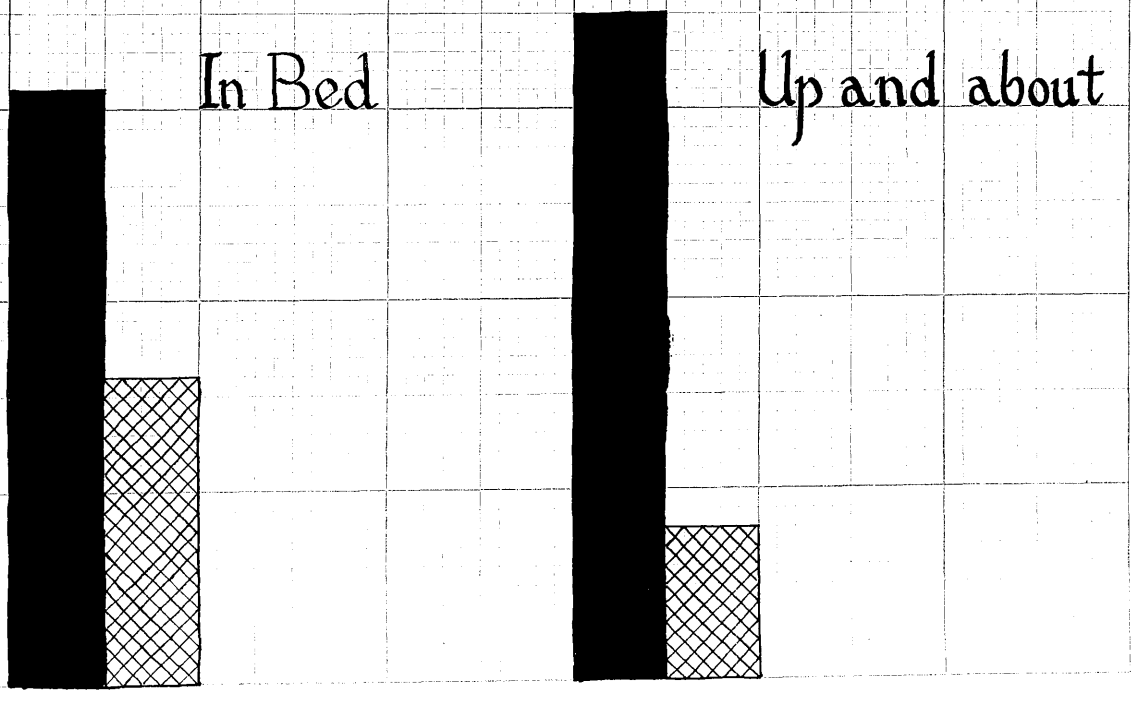
▩ Faecal Incontinence.



Case 13 M.H.I.

■ Urinary Incontinence.

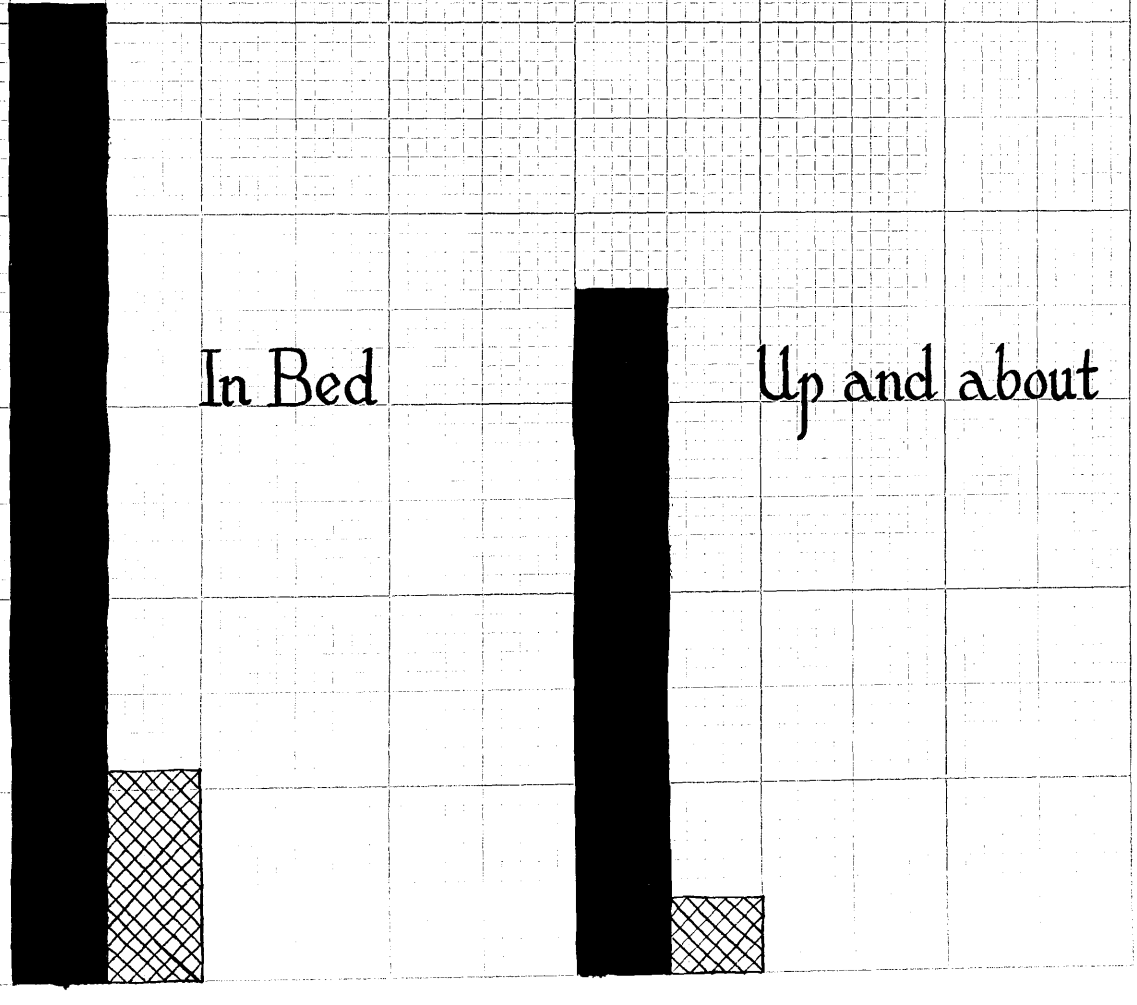
▩ Faecal Incontinence.



Case 15 M.M.J.

■ Urinary Incontinence.

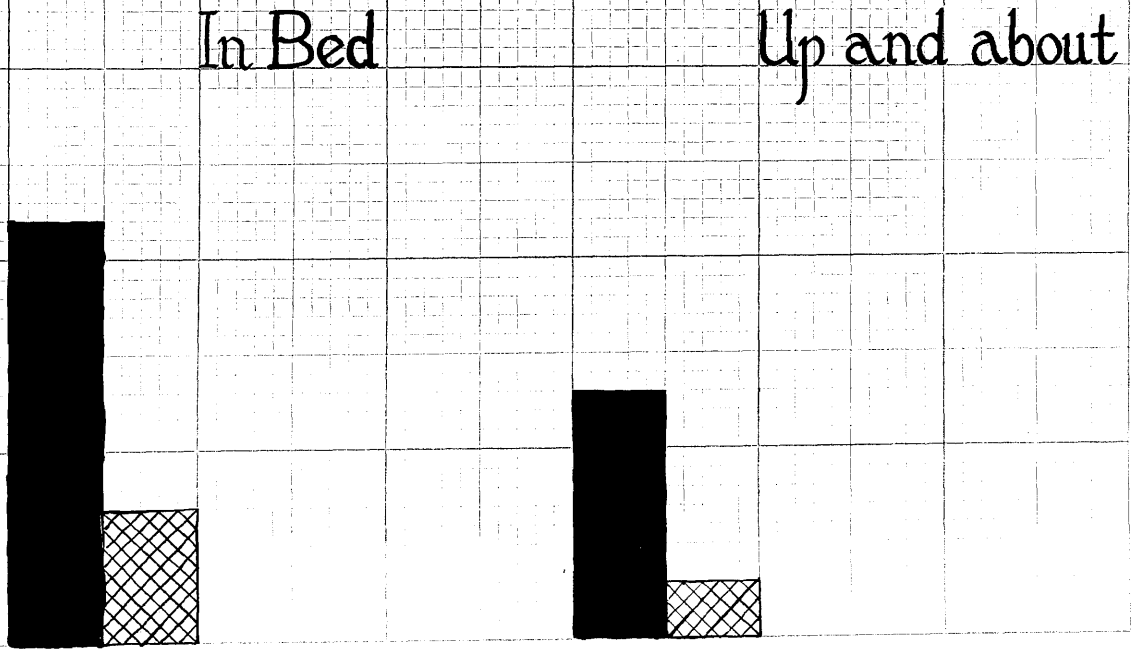
▩ Faecal Incontinence.



Case 16 M.J.S.

■ Urinary Incontinence.

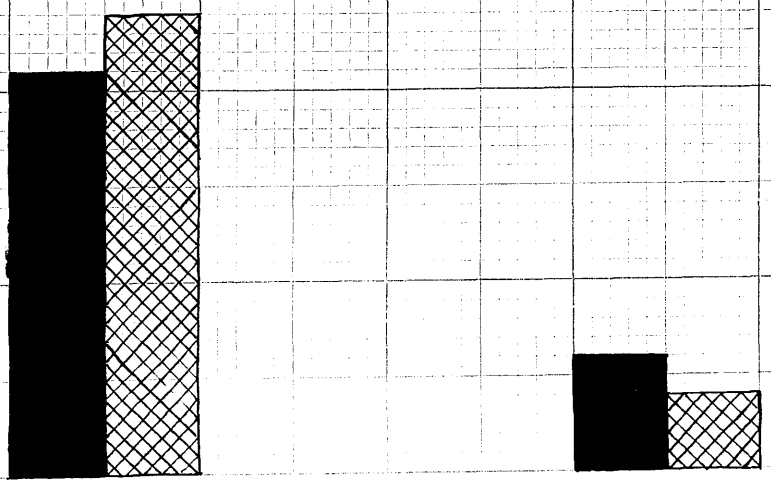
▩ Faecal Incontinence.



Case 17 M.H.A.

■ Urinary Incontinence.

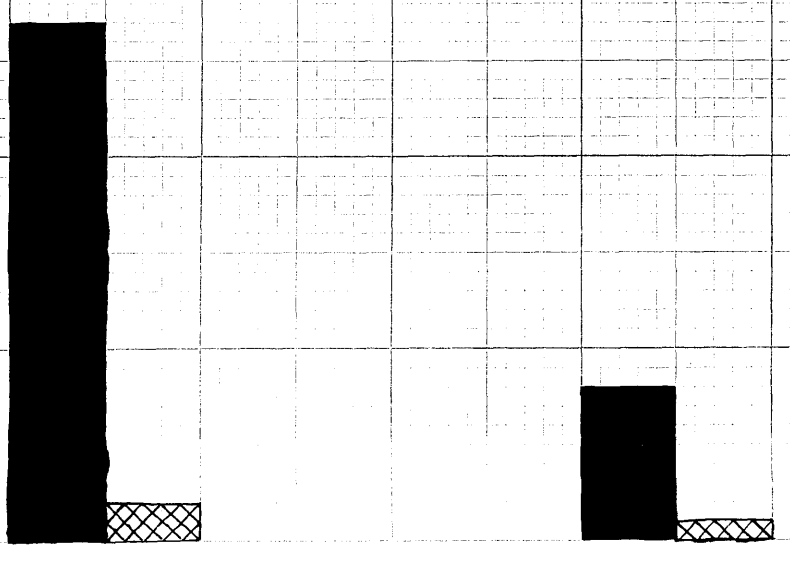
▨ Faecal Incontinence.



Case 18 M. J.R.

■ Urinary Incontinence.

▩ Faecal Incontinence.



Case 21 M.G.H

■ Urinary Incontinence.

▩ Faecal Incontinence.

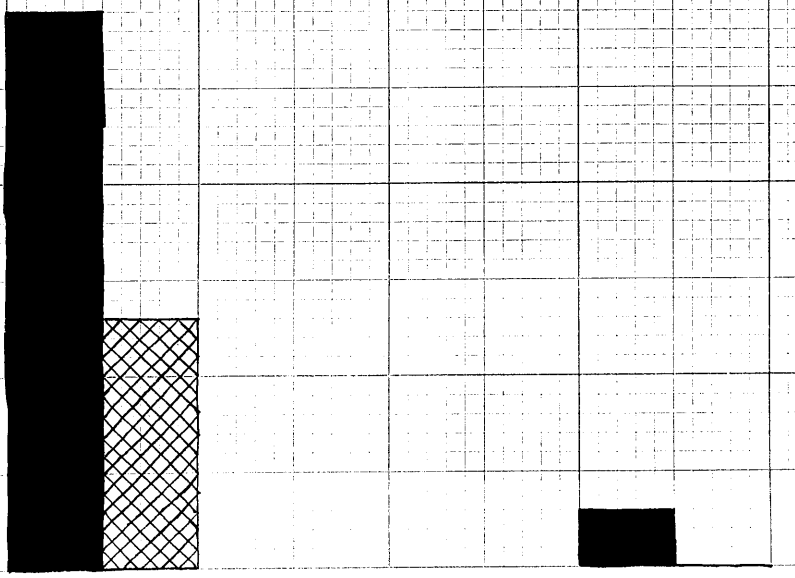


Table shewing relative blood pressure with patients in bed and up and about.

Case.	In Bed.	Up and about.
3 F BM	145/80	140/75
4 F MA	195/100	178/95
5 F MA	100/5	135/70
7 F AC	160/90	168/84
8 F LL	154/96	180/90
9 F AO	145/90	160/100
11 F JC	130/78	180/86
13 M HI	130/80	125/78
15 M JT	130/80	192/90
16 M JS	180/100	180/110
17 M HP	140/80	165/75
18 M JR	150/90	160/82
21 M GH	140/74	180/86