Notes, Short Comments, and Answers to Correspondents.

SENESCENCE AND SENILITY.

BY R. J. C. THOMPSON, M.D. DURH., M.R.C.P. LOND.,

MAJOR, R.A.M.C.;

AND

R. E. TODD, M.B., B.S. LOND., M.R.C.S.,

MAJOR, R.A.M.C.

PROBLEMS connected with old age have interested all generations. From perusal of the literature on the subject, it would seem that certain general principles in dealing with the aged are well recognised, but in actual practice they are often forgotten or ignored. This paper, based on two years' collaboration at the Royal Hospital, Chelsea, is not intended to be a full scientific treatise, but a simple expression of what we believe to be the basic principles underlying old age and rational methods of retarding premature decay. We have been in medical charge of a population of 500 veterans, averaging 73.3 years of age, with 22 per cent. aged 80 years and over.

We have very few reliable data bearing on the factors which conduce to longevity.

Heredity.—Long-lived parents, particularly the mother, would seem to have long-living children, as a rule, but we have not sufficient evidence as to the causes of early death in the parents. It may be taken for granted that, under anything like favourable conditions, good stock begets good stock.

Hardship.—We are doubtless dealing at Chelsea with the survival of the fittest. But hardship, per se, appears to have no deleterious effect. In fact, the medals of the older campaigns, Crimea and Mutiny, are badges of the "sturdy independent" who plays his innings to the end.

Syphilis.—Previous history is often quite unreliable, but amongst the oldest men we have found no signs of syphilitic infection.

Alcohol and Tobacco.—Apart from idiosyncrasy, we have no reason to think that either has a specific deleterious effect on the normally sound constitution. A Crimean veteran, aged 85, recently developed subacute delirium tremens on return from furlough, and made an excellent recovery.

Diet.—The old men eat enormously as a rule. Lack of teeth does not spell indigestion at the Royal Hospital. We are frequently amazed at the quantity of solid food which an old man will comfortably dispose of.

Unnecessary Invalidism.

At an early stage in our service at the Royal Hospital we were impressed by, and deplored, the amount of unnecessary invalidism among in-pensioners and the even greater amount among admissions from out-pension to the Royal Hospital. Some who had had a wound, injury, or illness—often with insufficient or inefficient treatment—had lost their elementary stimuli and given themselves up to a life of invalidism, of premature and preventable decay. They had lost self-reliance, the instinct of self-preservation, and—all too often—self-respect. Such men become an intolerable nuisance in their homes, and drift into institutions as chronic "incurable" invalids. We have found that, in many cases, the physical condition as described by the patient and his friends is not supported by clinical findings, and that it is possible to do a great deal for this type of case. Much time and patience are required and it is thankless work; more often than not the patient resents curative treatment and prefers to be left to "rot" in his own way.

A pensioner, aged 41, who had been wounded in the South African War by a bullet through the frontal lobes, had been practically bedridden since 1902. He became so tyrannical in his home, and so great a nuisance to his mother, that application was made for his admission to the Royal Hospital. He was admitted in a profoundly neurasthenic state, alleging that he was practically unable to walk. After two months in the infirmary of the Royal Hospital he became physically fit to earn his own living. He deserted from Chelsea, and walked to Newbury!

Definition of Old Age.

It is very difficult to give a clear definition of old age. Some men are old by the time they reach 60, others are physically and mentally active at 80; old age cannot be assessed by the sum total of man's years. The Psalmist's "three score years and ten" has been too literally accepted; the "too old at forty" gospel has not helped to dispel the fallacy, and there is too great a tendency for men reaching a certain age to persuade themselves that, ipso facto, they

have reached the last page of the book. They seem to think that they have attained an age at which a man should relinquish his activities, both physical and mental. Old age, as we see it, is not mere physical deterioration, but may be expressed by the equations: (1) Physical deterioration = senescence; (2) physical deterioration + lowered mentality = senility.

During two years 169 deaths have occurred among the in-pensioners. The average age at death was 77.2 years; the causes are tabulated at the end of this article. We have held autopsies on the majority of these cases, both to check diagnosis and to satisfy ourselves that clinical treatment had been reasonably complete. Constant pathological changes have been found in the cardio-vascular system, degeneration of heart muscle and arterial lesions, general or localised. We have particularly remarked cases of localised arterial degeneration, as some men who have exhibited "pipe-stem" radial arteries have not shown comparable arterial changes in other parts. It is easy to understand that general vascular degeneration leads to malnutrition and consequent deterioration of all the tissues of the body. It is equally logical that some localised lesions have their effect in determining the reactions of the body to hormonal influences. To blame any one or all of the endocrine glands as being the primary cause of old age seems to us to be placing the cart before the horse. Cardio-vascular degeneration, the failure of the mechanical factor, on which the constant strain has been exerted through life seems, a priori, a sufficient and simpler explanation in the absence of direct proof to the contrary.

Psychic Factors Determining Senility.

Apart from the physical and mechanical side, the factors which, in our view, determine senility are the subtle, psychic changes which are evidenced by gradually lapsing sympathetic control, and the loss of balance between the sympathetic and para-sympathetic systems. Para-sympathetic activity is the first to develop, the last to lapse. It is maintenance of the equilibrium between the "vagal" and sympathetic systems which determines the normality of the adult, and our aim has been, in dealing with the problems connected with old age, to help to maintain this balance as long as the mechanical factor can reasonably fulfil its function.

Normal old age should be a physiological change of a not unpleasant nature. It is the wilful-woeful, helpless-hopeless attitude of the individual which makes old age hideous, culminating only too often in premature senile dementia. A slight accident or illness may be magnified by suggestion or auto-suggestion into being the final crisis; the patient and his friends appear to regard it as almost unseemly that he should "get better at his age!" Many old people are easily persuaded to take a morbid interest in being helpless, and soon learn to enjoy being the coddled centre of attraction, a subject for commiseration and mistaken sympathy which finally produce the self-centred abstraction so common among the aged.

Hysteria, the condition induced by suggestion, and curable by persuasion, is, we find, unexpectedly common among the old men. For instance, an ancient watching another who cannot walk easily suggests to himself that he also cannot walk. After examining petechial patches on the dorsum of the foot of a patient, aged 83, we found, the following morning, that the old man was holding his foot in the equino-varus position and insisting that he had lost the use of the leg. The treatment of such functional cases is simple and successful; the patient's dinner is placed at the other end of the ward, and the man can only reach it by walking to the table. It is, of course, as necessary to eliminate any organic basis in these cases as it is important not to humour the "functional lesion." As long as a man, whatever the number of his years, responds to the "elementary stimuli"—self-reliance, the instinct of self-preservation, and self-respect—he does not suffer from old age. A man whose sympathetic nervous system remains tuned to the above "stimuli," is, whatever his age, not out of harmony with his surroundings. A man whose sympathetic nervous system has lost tone, or is exhausted, suffers from what we describe as "lowered mentality" in our old age equation.

Hospital surroundings undoubtedly have a tendency to induce moral and physical deterioration in the aged; do anything for an old man which he can do for himself, and he will very soon persuade himself that he can no longer do it.

Dangers and Uses of Bed.

We have no doubt that the aged should be kept out of bed as far as possible. An old man, kept in bed unnecessarily, often becomes dirty in his habits, and is in danger of hypostatic pneumonia, particularly when he is the subject of lung affections, such as chronic bronchitis, emphysema, &c.

We regard it as necessary to have those acutely ill under direct medical care, as it is important to keep those not in need of nursing away from the suggestive atmosphere of hospital surroundings. Admission to hospital suggests to

many of our old men that they are "on the departure platform for Brookwood Cemetery," that "it is the final canter to Woking." It lowers the morale of an old man to keep him unnecessarily in an atmosphere of helplessness and suffering. Further, the rusting mechanism of the cardiovascular system, if left to rest too long, refuses to perform, when called upon to do so, what had been its accustomed routine. Unless there are strong indications to the contrary, such as an acute toxæmic affection, to produce a state of muscle inertia, in which the myocardium partakes, is tantamount to cutting off the vital stimuli necessary to the performance of such duties as even a degenerated heart-muscle has performed, can perform, and is tuned to perform. A strong argument against keeping an old man in bed is, we find, the practical impossibility, even in an institution, of preventing "pressure sores." The skin, atrophic and malnourished arterially, has, in some cases, broken through in less than 12 hours. The buttocks, the heels, elbows, any thinly-covered bony prominence, may give way under the slightest pressure, and we have seen a case amounting to ante-mortem decomposition.

The attitude towards the patient in hospital must be cheerful and optimistic. An atmosphere of cheeriness is most important in giving confidence in his treatment and sustaining his self-confidence, thus fostering the determination in his own mind that the issue of his illness is likely to be favourable. In this regard, a great responsibility rests with the visitors who are allowed to see the patient. Commiseration and misguided sympathy may completely upset an old man's mental outlook. An injudicious visitor can, in a few minutes, stultify the medical work of days and reduce the patient to a state of non-resistant gloom and despair. The philanthropist whose only largesse is commiseration is an unmitigated nuisance; the misapplication of so-called "sympathy" does nothing but demoralise old age. In no case have we seen a single instance where the moist eye and mournful shake of the head have helped either the patient or those responsible for his real welfare. It has been instructive to remark the dislike of sturdy independents to the attempted coddling of well-meaning visitors. To quote a Crimean veteran playing a good innings of 86: "I wish these blasted women would leave me alone."

A type of case which must be nursed in bed is the intensely toxæmic lobar pneumonia, owing to the failure which threatens the heavily poisoned and already degenerated heart. But broncho-pneumonia—so common as the flame which bursts from smouldering chronic bronchitis—is, we believe, almost inevitably fatal if the patient is kept in bed. In such cases the mechanical, rather than the toxæmic, factors appear to act more powerfully, and change of position and relief of pressure are undoubtedly therapeutically necessary. The patients are less distressed when in an armchair; they sometimes ask to be allowed to sleep in an armchair, and the suggestion of being out of bed is of undoubted psychic value. The excretory functions work better; fæces and urine are more easily voided. Rest is promoted, as the inducement to sleep after getting back to bed is greater than if the patient is kept there constantly.

We are often amazed at the powers of resistance of the degenerated human machine, and at the length of time for which life can be sustained by a mechanism practically worn out, which may be coaxed to continue work, but for which no spare parts are available. When definite signs of a failing reserve are apparent we take the patient under our immediate care to help him over a threatening critical period, for it is more important in old age than during any other period of life to treat the individual and not the diagnosis. A strong indication for admission to hospital is the patient's complaint that he feels "tired," "done up," "is off his food," "has no life in him." In many such cases a day in bed, with hot-water bottles and light easily digested nutriment, suffices to tide over an impending crisis and reinforce the threatened reserve of the mechanical element in vital energy. Why a day's rest in bed should operate so powerfully in such cases, and indeed at all ages, it is difficult to explain, apart from the mechanical factor, unless perhaps the resting body is better enabled to produce the antibodies necessary to combat a new, or added, infection.

Lung Lesions.

We have reason almost daily to remember that chronic bronchitis and broncho-pneumonia, as distinct diagnoses in the aged, are *ab initio* often impossible to make, the one merging imperceptibly into the other. The chronic bronchitic who reports sick with even a slightly raised temperature is a patient to be regarded and treated seriously as a case of potential, if not developed, broncho-pneumonia. Apyrexia does not rule out broncho-pneumonia; we have seen a fatal case, confirmed at autopsy, where temperature was subnormal throughout the course of the illness. It is often impossible from physical signs to discriminate accurately between the various lung lesions found in the aged; the confused medley of adventitious sounds in an old man's thorax makes it

impossible to distinguish the classical signs of text-book disease. Active tuberculous lesions have not infrequently been found, post mortem, in the lungs when the usual signs of phthisis were not demonstrable during life. As practical points in clinical treatment, we have found that the majority of so-called "bronchial asthma cases" are benefited and the spasm controlled by injections of atropine gr. 1/100 given in the early morning.

Benzyl-benzoate, in cases of the secondary arterio-sclerotic (chronic renal) type of asthma, has given most encouraging results. It also seems to relieve enterospasm, and in two cases has been the only drug with any effect on otherwise uncontrollable hiccough of unexplained origin in men of 84 years of age.

Heart Disease.

In so brief a note we cannot attempt to discuss fully many common diseases in terms of old age. We have already alluded to the apparently constant degenerative changes in the myocardium seen at autopsy. In some cases the muscle wall, especially of the right ventricle, has been so thinned as to give the impression that the wall was made up of visceral pericardium and pericardial fat. Auricular fibrillation is, as might be expected, common among the aged, usually without demonstrable valvular lesion.

In our cases gross irregularity of rhythm and force of beat have been more noticeable than the usually associated rapidity of action. In an exceptional case, aged 84, irregularity was associated with a pulse-rate of 130, uncontrolled by digitalis in large doses. We have found that a formula such as the following—

R. Tinct. digitalis (up to)	..	..	minims xv.
Tinct. nucis vomicæ	..	..	minims vi.
Ammon. carb.	..	..	gr. iii.
Aq. camphoræ ad	..	..	℥i.

quartis horis.

gives rapid and excellent results. It is often advisable, as a measure of urgency, to initiate treatment with an injection of digitalin, gr. 1/100, either subcutaneously or intravenously. As soon as the gross irregularity is controlled, the above formula, with smaller doses of tincture of digitalis, can be adopted as a routine measure to keep the heart's action at a comfortable level, the patient being seen at regular intervals after discharge from hospital.

The most distressing heart cases we have seen have been in three comparatively young men with gross aortic incompetence and cor bovinum. Until compensation failed these men did not complain, but as soon as their reserve gave way they became acutely distressed and exhibited symptoms akin to acute mania. Their discomfort, apprehension, and insomnia could only be allayed by injections of morphia, a drug which prolongs life in these cases and, what is far more important, makes continued existence tolerable. Our cases of mitral valvular disease in the aged have exhibited no features of special interest.

We have not seen a single case of true angina pectoris, but what has been described as abdominal angina is not an unusual feature in cases which reveal, at autopsy, advanced atheroma of the aorta and coronary arteries. The subjective signs, attributable to general arterial deterioration, are, in our experience, seldom complained of. The objective phenomena usually first bring the patient under notice. Meeting so many cases of obviously marked arterio-sclerosis, we expected to find a large series of cases showing very high blood pressure; but the reverse is the actual case. The explanation is, doubtless, that the period of high pressures has been passed in middle age when a forcible heart was acting against degenerating arteries. This is the prelude to the general cardio-vascular degeneration, which we find so constantly established in old age—the era of lowered pressure of a completely faulty machine.

Malignant Growths.

It will be seen that malignant disease—neoplasm—has accounted for 13 per cent. of the deaths during two years. With cases of inoperable carcinoma there comes the time when physical misery dominates the picture; we can find no excuse for withholding morphia sufficient to submerge the patient's discomfort and misery. We have heard it stated that doses of morphia sufficient to effect this purpose shorten the patient's life; we believe, however, that in many cases the comfort given and sleep gained lengthen life. Morphia undoubtedly conduces to the sufferer's comfort and confidence, and during institutional treatment it prevents the detrimental effects, on other patients, of visible suffering and the suggestion of a painful end. Morphia is, we gather, not infrequently withheld as being the thin end of the euthanasic wedge; we wish to emphasise our view that it is inexcusable to allow unnecessary suffering when the obvious panacea is available. One learns in an institution for the aged that death is, more often than not, "le bienvenu," and we can find no slightest reason why its advent should be made hideous.

Other Morbid Conditions.

Varicose Ulcers.—These heal readily in men of over 80. Our general practice is to clean the surface with fomentations for two or three days, then to cover the ulcer with a slightly larger piece of thin rubber tissue, over which is lightly bandaged a thick pad of wool saturated, and kept moist, with weak Sanitas solution. The rubber is removed every 48 hours, cleansed, and reapplied after the surface of the ulcer has been very lightly swabbed. The patients are not kept in bed, but are moved into armchairs during the day with stools on which the leg is rested.

Senile Gangrene.—We inspect the feet of all in-pensioners weekly, and take senile gangrene under treatment early. Destruction of tissue can usually be strictly limited by resting the limb and keeping the part dry. Three cases of moist gangrene have occurred, with fatal results, in patients whose urine contained sugar. Our weekly inspections also enable us to locate cases of early rodent ulcer, and carcinoma of superficial structures, and to offer the patient the opportunity of operation while the growth is operable—an opportunity of which he by no means always avails himself. The members of the Cancer Hospital staff have always been most kind and helpful to our old men.

Bladder.—We have been called upon to deal with surprisingly little bladder trouble. Two cases of foul chronic cystitis have been made more comfortable by regular bladder washing. Retention of urine suddenly occurring during the course of an illness is always of grave prognostic import. But men who have "reported sick" with inability to "pass their water" have usually regained the function after, in some cases, weeks of careful daily catheterisation. It would seem that these cases of retention have been due to sheer atony of the bladder wall; no urethral or prostatic obstruction has impeded the passage of large metal catheters, and the function has been completely regained. A recent instance was in a Mutiny veteran aged 85.

Quack Medicines.—Many of our old men take a keen, and regrettable, interest in the advertisements of patent and proprietary medicines. The continued suggestion contained in the syllabus of symptoms has a distinctly harmful effect. An old man will produce for inspection a cutting from a newspaper which contains a list of 20 questions ranging from "Does your nose itch?" to "Do you cough on waking in the morning?" and, almost triumphantly . . . "I've got all of them!" They are half-frightened, half-gratified, by pills which turn the urine green or blue: "It don't look natural to me, but I s'pose it's the impurities washed out o' me system."

Chronic Constipation.—This condition is responsible for many of the ills of old age. We have had patients, whose epileptoid fits, maniacal outbursts, long-standing anorexia and generalised pains have been completely and permanently cured by regular attention to the bowels. We have observed frequently, post mortem, the presence of stony-hard scybalous masses in the colon even in men whose "bowels were well and regularly open." Presumably the more liquid faecal matter forced a way past the impacted scybala. It appears that the normal expulsive reflex of the rectum becomes dulled and finally lost in old age, the rectum and colon becoming atonic. Certainly we find that enemata are more helpful than all the usual purgatives put together. A single enema may suffice to overcome an early constipated habit. A routine dose daily of liquid paraffin and liquid extract of cascara aa 3i. relieves many cases. The more obstinate cases require routine enemata, once or twice every week; routine enemata seem more rational than routine aperients in dealing with the obstinate constipation of old people. The atonic colon is at fault to a greater extent than the small intestine, and mechanical emptying of the rectum by means of enemata gives better results than the continual goading of the small intestine.

Ears.—Examination of the ears has revealed the fact that the majority of our old men had concretions of cerumen blocking the external meatus. Common complaints are of "feeling giddy," "singing in the ears," and "buzzing feeling in the head." Removal of the wax from the ears by syringing nearly always cures the symptoms and obviates the necessity for suspecting intracranial lesions. The deafness caused by plugs of cerumen produces a definite type of mental dullness which can be rapidly alleviated by syringing, and cured by repeating the treatment at regular intervals.

Eyes.—Eyesight means so much to the old men that the fitting of suitable spectacles is an important factor in their well-being. Complicated refractions, operative measures, &c., have been most kindly undertaken with very helpful results, by the ophthalmic surgeons of St. George's Hospital, and by the eye specialist stationed at Queen Alexandra's Military Hospital, Millbank. We have been quite unable to induce the blind men of the old army to undertake any form of distraction to occupy hands or thoughts. In this connexion we have noted, particularly, that *the aged with blindness of long-standing do not drift into senile dementia*. Our observations are limited in number, but it seems reasonable that this

should be so—the man has been forced to make efforts to fend for himself; his instinct of self-preservation has sharpened his other senses, and he has survived owing to the continued high tone of his sympathetic nervous system which maintains its tuned-up efficiency.

Teeth.—We do not remember having seen a single tooth in healthy condition among our old men. Those who have natural teeth are so affected with pyorrhoea that they would be a great deal better with edentulous gums. They are most averse to having teeth extracted until the latter cause pain or "become so wobbly" as to be a nuisance; a man will obstinately retain a single tooth in his head and persuade himself that it is both useful and ornamental. We do not recommend the supply of artificial teeth if the tough, hardened, edentulous gums can be made to meet in close apposition. In two and a half years we have had to recommend dentures for two men only, with limited movement of the temporomandibular joints which prevented closure of the edentulous jaws.

Feet.—The feet of the aged require constant care and supervision. Corns, callosities, and neglected toe-nails are causes of discomfort and suffering amounting, in some cases, to helplessness. The appointment of a professional chiropodist, assisted by a pensioner selected from each company, has been a real boon. Light, well-fitting, and, when necessary, specially made boots are desirable for the comfort of old people. A hard, heavy, unsympathetic boot will often completely cripple an old man, even when his feet exhibit no particular deformity.

Comforts and Privileges.

It is our practice to recommend the issue of flannel abdominal belts and chest protectors to old men who have been long accustomed to wear them. We do not discuss their value from a medical point of view or the real necessity for them, but we know that they make these old men happier. The garments doubtless create a feeling of warmth and comfort, and give a measure of confidence to the wearer. In-pensioners who require trusses are always specially measured and fitted, to secure comfort in wearing the truss without undue pressure on atrophic skin. In the infirmary we allow the permanent hospital patients to smoke in bed, and their desires for small luxuries are humoured as far as possible. We do not classify the routine issue of spirits as a luxury, but we use alcohol freely when medicinally necessary. Alcohol is, we believe, an essential stimulant in the treatment of broncho-pneumonia. The temporary withdrawal of small privileges is an important therapeutic agent. Incontinence, with no organic basis to explain it, is cured with astonishing frequency by withholding for a day one of the minor privileges, pipe or beer. The man associates the want of his pipe with the necessity for not soiling himself.

The Commissioners of the Royal Hospital arrange for weekly drives in motor char-a-bancs for the infirmary patients, and the change does much to prevent the self-centred abstraction so common among the aged. We often find that a change of ward, involving new surroundings and new companionship, has a similar beneficial effect.

Diagnosis.

A brief reference should be made to the difficulties that may arise in connexion with the protean manifestations of uræmia in the aged. Another condition which must be remembered is myxedema; a man, aged 74, whose general condition suggested chronic parenchymatous nephritis, has been almost rejuvenated by the administration of thyroid. In this connexion we have noted two cases of acute general eczematous dermatitis which have cleared up under small doses of thyroid extract. The occurrence of thyroid insufficiency does not appear to be particularly frequent in the old; at any rate, we see no reason to believe that hypothyroidism is the cause of old age, or that the administration of thyroid extract is the panacea that some writers rather enthusiastically suggest.

Summary and Conclusion.

There are few conditions more difficult to define than old age. The term "senescence," implying physical deterioration only, conveys to us the meaning of physiological and normal old age, a condition but little complicated by social or medical problems. We use the term "senility" for morbid old age—the condition, a burden to the individual and his friends, which is evidenced by physical deterioration plus lowered mentality.

The problems connected with old age are chiefly due to this lowered mentality of the senile. The independent individual, whatever his age, is not out of harmony with his surroundings. It is the man who has lost his elementary stimuli—self-reliance, the instinct of self-preservation, and self-respect—who creates a social discord. These stimuli are often allowed to lapse prematurely and without adequate cause, with the result that much unnecessary invalidism burdens the patients' homes and the State. We interpret the "lowered mentality" in our senility equation in terms of loss of balance between

the sympathetic and the para-sympathetic nervous system. Subtle psychic changes and lapse of sympathetic control, in our view, go hand in hand and finally culminate in senile dementia. Hysteria is unexpectedly common among the aged. Auto-suggestion and pessimistic hetero-suggestion have a most demoralising effect upon the senescent. The senescent should be kept away from the suggestive atmosphere of hospital surroundings, unless they suffer from conditions which call for nursing and constant medical supervision. Old men should not be nursed in the same ward with considerably younger men, suffering from hemiplegia, advanced tabes, &c. Suicide is apt to be infectious in an institution for the aged, and men who attempt suicide should be transferred to an institution where the care of mental cases is undertaken.

The attitude of all concerned with the treatment of the senescent in hospital should be one of cheery optimism. A Mutiny veteran, aged 89, with broncho-pneumonia, who stated on admission: "This time I'm booked for the Other World," was much amused when told that "the return half of his ticket was sticking out of his pocket," and made an excellent recovery. Badinage, and cheery chaff, if unofficial tonics, are wonderfully effective. Cases of broncho-pneumonia in the aged, if kept in bed, are—we believe—almost invariably fatal. An old man can very seldom be kept comfortably propped up in bed. We have had startling recoveries in men who have been put into armchairs every day; as a further instance of suggestion, we find that the patient's trousers are of the greatest therapeutic value; he regards his own condition far less seriously when he is clothed than when he is swathed in blankets. We urge the value of encouraging the "will to live" when the senescent are curable patients in hospital, but we strongly advocate the use of morphia when discomfort and pain become the dominating features in incurable diseases.

Table of Deaths.

During the two years, August 1st, 1919, to July 31st, 1921, there were 169 deaths among the in-pensioners. The average age at death was 77.2 years. The cause of death in the attached table is shown under the outstanding clinical and post-mortem findings, but in the majority of cases more than one system (circulatory, respiratory, excretory, &c.) had degenerated or were actively diseased.

Cause of death.	Number.	% of total.
Circulatory system (including cerebral hæmorrhage, 4; arterio-sclerosis; aneurysm; V.D.H.; myocardial degeneration; suppurative myocarditis with rupture into pericardium, 1)	64	 38
Respiratory system (pneumonia, broncho-pneumonia)	41	 23
Renal disease (uræmia, &c.)	12	 7
Malignant disease	22	 13
Senile gangrene (associated with glycosuria, 3)	4	 —
Chronic pachymeningitis (senile dementia, tabes, 1)	11	 7
Accidents (knocked down in street, &c.)	4	 —
Septicæmia	1	 —
Tuberculous disease (lungs, 2; larynx, 1)	3	 —
Cirrhosis of liver	1	 —
Suicide (by hanging)	1	 —
Post mortem (shock and pneumonia)	1	 —
Gastric ulcer (with hæmorrhage, patient aged 71)	1	 —
Chronic pancreatitis (with cholangitis)	1	 —
Result of old wound	2	 —
Total	169	

Of the 22 "malignant diseases," the primary sites were as follows: Side of head, 1; tongue, 2; floor of mouth, 1; rodent ulcer (septic pneumonia), 1; pancreas, 2; gall-bladder and ducts, 5; stomach, 2; pylorus, 2; colon, 5. One case with carcinoma of descending colon died of general peritonitis due to rupture of stercoral ulcer in caecum.

THE ROYAL BATH HOSPITAL, HARROGATE.

On April 21st the new bath-house and cooling-room of the Royal Bath Hospital at Harrogate were informally opened. The company included the Mayor of Harrogate (Alderman W. Raworth) and members of the corporation; Mr. C. A. Rhodes, chairman of the hospital; and members of the honorary medical staff, which is constituted as follows: two consulting physicians, six physicians, one surgeon, one ophthalmologist, one oto-rhino-laryngologist, two clinical pathologists, two radiologists, and three dental surgeons. The Royal Hospital is not a local organisation; since its establishment in 1824 patients have been drawn from all parts of the kingdom. There is accommodation for 150 patients, and last year more than 1500 men and women received treatment. There was a loss of £300 on last year's working expenses, and of £1200 on those of the previous year. The modernisation of the institution, so far as money will allow, now advances it to the front rank of hospitals of its kind.

THE ROLL OF THE FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.¹

By VICTOR G. PLARR, M.A. OXF.,
LIBRARIAN OF THE COLLEGE.

THAT great surgeons would have been men of supreme talent in any walk of life is scarcely disputable, but that the rank and file of highly-qualified surgery is capable outside its particular province of remarkable versatility is not so apparent. This paper is practically a report on a compilation drawn from a variety of sources, which has occupied me during a number of years; the compilation in question is a biographical dictionary of all the Fellows of the College who have died since the institution of the Fellowship in December, 1843. The number of biographies, of which a large minority are lengthy, is considerably over 2000, and from most of them it would appear that the older surgeons played many parts—as social reformers in remote and ill-drained towns and waterless villages in the earlier part of the last century, as soldiers, builders of Empire, inventors, artists, linguists, travellers, and men of science and letters. Among the most interesting of those whose biographies have been written should be numbered such as followed their proper vocation in attendance on famous men.

Nelson's Surgeon.

Thus Lambton Este, one of the 242 elected Fellows of the year 1844, was Nelson's surgeon and intimate friend. Este qualified as M.D. of Pavia as long ago as 1798, and joined Nelson's *Victory* in November, 1804. "In my first interview with Nelson," wrote Este, "he complained of frequent pains in his right side, from former injuries—that many warnings and inabilities made him conscious of his shattered frame, and anxious for repose. The sight of his remaining eye was fast failing him; a thick opaque membrane had grown over and into a part of the transparent cornea, and, as far as it extended, was an obstacle to vision in the only eye left him." It thus appears that Nelson was a sick man at the time of his death. Este was not present at Trafalgar, having been sent home with despatches, an errand on which he had been often employed. A fine old example of a bygone type of surgeon, he died as lately as January, 1864.

Fellows at St. Helena and Waterloo.

James Roche Verling, also a Fellow, sailed to St. Helena with Napoleon, whom probably he knew well, as among his accomplishments were a perfect knowledge of French and Spanish. He attended for many months at Longwood House, but was never called in by the Emperor, who seems to have seen in him a nominee of Sir Hudson Lowe. Montholon's suggestion that he should attend the Emperor and write bulletins more unfavourable than the truth required was very honourably refused by Verling. John Gunning, born as long ago as 1773, one of the original 300 Fellows of Dec. 11th, 1843, was suddenly called upon at Waterloo to amputate Lord Raglan's arm. This he did, apparently in the open field, and Lord Raglan, who bore the unanæsthetised operation in silence, then shouted, "Hullo, don't carry away that arm till I have taken off my ring!"

Distinctions in Peace and War.

Surgical inventors range from Lister to Rawlings Beaumont, who originated the idea of the sewing-machine, and James Syme, who was before Macintosh in the invention of water-proofing. Did space permit one might do much more than cite the noble army of those who have died at their posts whether as military or civil surgeons. Of military surgeons 22 Fellows have died in the late war, either on the field or of ill-health contracted during their service. They figure in the Roll of Honour of the Royal College of Surgeons, and their biographies are now put on record among their numerous interesting and deserving confrères. That there have been many eminent Members, who never proceeded to the Fellowship, is, of course, obvious, and that many great surgeons flourished before 1843 none will deny. But to discover and do justice to these would make what has been a very laborious task for one man a labour for a historical Hercules.

THE COUNTY OF LONDON BRANCH, B.R.C.S.

THE report of the County of London Branch of the British Red Cross Society dealing with the years 1914 to 1919, and including the year 1920, opens with a foreword by Mr. J. F. Badeley, President of the branch and chairman of the County Committee. Writing as one who was closely in touch

¹ Based upon an address given on April 19th at a meeting of the Section of History of Medicine of the Royal Society of Medicine.