fall after about one and a half to two hours. The initial fall is due to the dilution of the small initial secretion by the bulk of the meal. The increase in acid is often due to the mechanical stimulation of the gruel, which unlike many foods, such as milk, eggs, or meats, does not have any intrinsic secretagogic action.

Gastric secretion consists of two components: the parietal cell component—that is, hydrochloric acid—and an alkaline secretion from the pyloric glands which, together with mucus, lowers the final level of acidity. The fall in acidity commonly found at the end of a test meal is mainly due to this “non-parietal” secretion; regurgitation of bile and pancreatic juice plays a minor part. The exact mechanism of co-ordination between the acid and alkaline components of the gastric juice is not yet fully understood. There seems to be a normal “brake” mechanism which operates through the duodenum; when the pH reaches a certain level an inhibitory mechanism begins to come into action and depresses gastric acidity either by increasing the alkaline component or by decreasing the acid secretion, or both. With duodenal ulcer this “brake” mechanism may be lost, hence the high rising curve sometimes found.

The standard gruel test meal provides a number of points for consideration: first, the amount and appearance of the resting secretion; and, secondly, the shape of the curve, the level of acidity attained, and the approximate rate of emptying of the stomach. The curve is commonly plotted on a printed sheet which gives the limits of the so-called normal responses in a shaded area. It must be remembered that this so-called normal response merely represents the limits which account for 80% of symptom-free subjects. The remaining 20% of normals had either well-marked “hyperchlorhydria” or hypochlorhydria.

In a standard test meal it is customary to give histamine, 0.5 mg., after one and a half hours if there is no acid present in the stomach by then. Histamine is a powerful stimulus to acid production, but if there is no response to histamine it is still not conclusive evidence of the complete inability of the stomach to secrete acid. For example, in a patient with a histamine-fast achlorhydria and a gastric ulcer, it is possible to get copious free acid for many hours during the day when hourly samples are taken round the clock, yet the histamine response may have been repeatedly negative. The ordinary dose of histamine does not get all the parietal cells into action, and about four times the usual dose is required to do this, but a dose of this size can be given only when covered by an antihistamine drug. This technique does enable one to assess the “total secretory mass” of the gastric mucosa.

Conclusion

The standard test meal is, in practice, full of pitfalls and fallacies, and unless done with care by an interested observer will not justify the discomfort caused to the patient or the time taken in the laboratory. It has been said that the test meal is a much better test of the patient's endurance than of his gastric function. Gagging and retching may cause secretory inhibition and produce an apparent achlorhydria. Achlorhydria, with increased difference between the free and total acid, may be due to the gruel being made with milk or to the patient having had a meal before the test was started. The presence of flecks of blood is sometimes misinterpreted and may be merely due to the trauma of suction on the mucosa. A chemical test for blood is too sensitive and it is better to rely on naked-eye appearance. Appreciable blood-staining is usually significant. The end of the tube may sometimes slip back into the gullet or pass through into the duodenum. Nevertheless, when the test is done by someone with experience and sympathy, particularly if the nasal rather than the oral route is used, it can be made reasonably comfortable and the major difficulties can be avoided.

Next article on Clinical Pathology.—“Laboratory Investigation in the Hyperchromic Anaemias,” by Dr. John F. Wilkinson.

A SURVEY OF ST. ALFEGE'S HOSPITAL GERIATRIC UNIT FOR 1952

BY

A. J. MESTER, M.D.

Geriatrician, Greenwich and Deptford Hospital Group

This geriatric unit is known as St. Alfege's Hospital II. It is situated in two separate blocks, each of three stories. Each floor consists of one ward divided into two—one for the bedridden, and the other for patients who are up and about. These arrangements have been made for the comfort of the patients and, more especially, to facilitate the work of the staff, particularly at night. The present bed establishment is 268—164 for women and 104 for men. As a considerable number of women patients are under 60 one ward is allotted to them together with diabetic patients. The same need does not arise in the case of male patients, but, on the other hand, there are more surgical and post-surgical cases, mainly due to urinary tract conditions (prostatic hypertrophy, cancer of the prostate, urinary retention, cystostomy), and therefore one ward is allotted to them. Male diabetics have a special ward.

Population Served

The area served by this hospital covers the boroughs of Greenwich and Deptford. According to the latest available figures the population is 170,000 (and therefore the present number of beds represents 1.6 per 1,000). If we regard 14% as being the geriatric group—that is, persons of pensionable age—this would amount to approximately 24,000, and therefore there are available 1.1 beds per 100 for the group.

It is well known that the social structure of the population is of great importance when assessing the number of beds required for elderly people. For instance, it is likely that a hospital situated in an upper-class residential area might require fewer beds than one in a working-class district. The population in our area consists almost entirely of weekly wage earners; most members of the family go out to work, and neighbourly help is therefore seldom readily available. Housing conditions are sometimes poor, with overcrowding. As a result of these circumstances there is often a heavy demand for hospital beds for old people. A large proportion of the population, mostly women, live alone, and the additional burdens which accompany winter may well bring their slender resources, already stretched to the utmost, to breaking-point, and compel them to seek hospital admission.

Admissions

During the year under review 300 women and 246 men were admitted. Requests for admission come from the following sources: General practitioners, acute wards of St. Alfege's and Miller Hospitals, the Emergency Bed Service, the medical officer of health, receiving-room, and other hospitals (teaching, cancer hospitals, etc.).

The procedure for the admission of patients put on the waiting-list by general practitioners is as follows.

In the late spring and through the summer, when the number of applications is not large, patients are admitted solely on their doctors' recommendations, because it is thought that even those patients who need residential rather than hospital accommodation will benefit from a stay in hospital before moving on to a local authority home.

Patients who are mentally deranged often benefit in the same way, but if after a period of observation their mental condition does not improve the advice of the consultant psychiatrist is sought. On his recommendation suitable patients can be transferred to Tooting Bec Mental Hospital,

where those over 70 are received for observation and treatment without being certified. Only occasionally do we find any reluctance on the part of the family to such an arrangement; when there is any reluctance it can usually be overcome by explaining the position. In very rare circumstances does a patient have to be certified, and, in fact, this was necessary only once during the year.

During the autumn and winter, when there is a heavy demand for hospital beds, the procedure for admission is different. Each patient who is put on the waiting-list by a general practitioner is visited and examined at home in order to assess his priority, which is based roughly on these grounds: (a) recent cerebrovascular accidents; (b) medical cases which should respond to treatment and be made fit for discharge in a short time; (c) medical cases which will require a longer time to be made fit for discharge; (d) patients requiring admission on social grounds not referred by the medical officer of health (the medical officer of health's patients have priority); (e) mentally deranged patients who may be put on the waiting-list for Tooting Bec Hospital; and (f) mental patients who cannot be kept or certified at home.

Stay in Hospital

After admission to hospital patients receive the necessary medical treatment, including physiotherapy and occupational therapy, both remedial and diversional. During their stay the lady almoner greatly assists by relieving their worries and, when necessary, putting their home affairs in order. Later, when the time for discharge has come, she supplies information on whether the home conditions are suitable for the patient's return. She may arrange for the district nurse to call or a home help to be supplied, or for such other assistance as is given by the Red Cross, St. John Ambulance Brigade, Women's Voluntary Service, Old People's Welfare Committee, and so on. Should the patient not have a suitable home, application is made to the local authority for accommodation. These transfers are arranged smoothly on an exchange basis, thus enabling patients in Part III homes to receive hospital treatment.

A high percentage of elderly people are mentally deranged as a result of arteriosclerotic processes of the brain, chronic softening of the brain, and so on. Such patients will be considered for transfer to Tooting Bec Hospital.

We have noticed a striking increase in the number of re-admissions, and we regard this as a welcome and salutary phenomenon. As in the case of younger rheumatic heart patients who spend their lives between periods of some activity and periods for repair in hospital, it is a good policy to give old people periods of treatment and rest prophylactically, and thus prevent or delay deterioration where further recovery is not possible.

Discharges

Discharges for the year under review numbered 321. Seventy-two patients (23%) were transferred to local authority homes and Tooting Bec Hospital, or, if in need of specialized treatment such as neurosurgery, to other hospitals. The other 249 (77%) discharged patients returned to their own homes: this does great credit to the patients' relatives, who showed themselves willing to accept the task of caring for an invalid, often infirm and frail.

On discharge the patient is told to inform his doctor that he is at home again. By this time the general practitioner has received a summary of his patient's diagnosis, treatment, and other pathological and radiographical information. The patient is also visited by a health visitor from the London County Council Health Department, who sends a report to the lady almoner for the information of the doctor in whose charge the patient has been during his stay in hospital.

Patients are seen and followed up in a geriatric out-patient clinic and, when necessary, readmitted or provided with further amenities at home.

Long-stay Cases

The problem of long-stay hospital patients is one of great importance, for these reduce the turnover in hospital beds. The recognition of the factors which necessitate a long period in hospital may help to solve the problem. Those who remain in hospital longer than a year fall into three main groups:

(1) *Chronic Joint Conditions*.—There were 64 cases: 11 had rheumatoid arthritis; one had Charcot's syphilitic osteoarthropathy of hip-, knee-, and ankle-joints; and 52 had osteoarthritis of different localization, but chiefly of hip- and knee-joints. It is easy to fall into controversy on the problem of osteoarthritis in elderly patients. It is well known that all people over 60 have osteoarthritis, but not all are sufferers. The condition may be more or less marked or more or less dispersed. The discomfort and apperception vary from nil to 100%. Very many patients with thickened phalanges suffer psychologically without sustaining pain or impairment of movement. On the other hand, some patients are completely crippled by osteoarthritis of the hips. To suggest that osteoarthritis in these patients is the primary cause of admission to a geriatric hospital or of incapacitation would be incorrect. Many patients are admitted for other reasons, such as cerebrovascular or cardiovascular diseases, and even a marked osteoarthritis may be an accidental finding. There are, of course, many patients who seek admission only on account of osteoarthritis, particularly of the hip-joints. Their history often reveals that for months or even years their treatment has consisted in resting in bed, which frequently results in severe contractures. The 11 patients with burnt-out rheumatoid arthritis, in addition to being over a year in this hospital, spent several years in other hospitals during the active stage. The problem of rheumatoid arthritis in active and non-active stages is beyond discussion here.

(2) *Disseminated Sclerosis and Other Nervous Disorders*.—One man and five women suffered from this disease; three of the women were paraplegic.

(3) *Arteriosclerosis*.—Patients suffering from this illness form the bulk of long-stay cases, and they are discussed below.

Deaths

During the year 238 patients (124 men and 114 women) died. There were 12 coroner's post-mortem cases, 9 of which were held because death occurred within 24 hours of admission, two on account of fractures sustained at home before admission, and one sustained in the ward. Fifty patients died of cancer (34 men and 16 women), the distribution being as follows:

Men	
Alimentary tract (pharynx 1, stomach 9, pancreas 1, rectum 6, colon (ascending) 1)	18
Urinary tract (bladder 1, prostate 5)	6
Lung	9
Sarcoma of muscle (patient aged 54)	1
Women	
Alimentary tract (stomach 1, liver 2 (primary), gall-bladder 1, colon (ascending and transverse) 3, rectum 1)	8
Metastases in abdomen (primary not found)	1
Urinary tract (bladder 1, uterus 2—1 corpus, 1 cervix)	3
Breast	2
Lung	1
Cerebellar tumour	1

The causes of death in the remaining cases were chiefly of cardiovascular origin—primary, or secondary to chronic pulmonary disease such as emphysema and chronic bronchitis with chronic pulmonary heart.

Deaths during the year were as follows: January to March, 52; April to June, 44; July to September, 58; October to December, 84. The increased number during the last period can be largely attributed to the fog.

Conclusions

It is evident that an allocation of 1.1 beds per 100 of the geriatric population should be enough under normal circumstances, and only in the event of an exceptionally severe winter or epidemics of serious upper respiratory infections might a temporary shortage of beds arise. To

ensure that a high rate of turnover is maintained it is essential that such patients as those suffering from osteoarthritis should be treated in the early stages and encouraged by persuasion and physiotherapy to be mobile. Further improvement in the position could be effected by the development of clinics for rheumatic out-patients. These, if the patients were encouraged to attend conscientiously at the onset of illness, would prevent or delay immobility, thereby easing one of the burdens on the geriatric hospital.

The bulk of long-stay cases are those suffering from arteriosclerosis, especially of the brain, with consequent inability to walk, incontinence, and mental deterioration. Such patients need special accommodation, as they require little more than nursing supervision. We are convinced that it is of the utmost importance to create intermediate accommodation between Part I (hospital) and Part III (local authority), which should offer to suitable patients the attention and nursing which they require.

These "nursing annexes" would accommodate bedfast patients incapacitated through cerebrovascular accidents; disseminated sclerotics if they are paraplegic; incontinent; burnt-out rheumatoid arthritics; and those beyond the reach of active medical treatment, such as persons immobilized through severe osteoarthritis and advanced arterio-cerebral sclerosis. These "nursing annexes" would require only a small trained nursing staff, as the patients' chief needs—care and attention—could be provided by orderlies working under trained supervision. Medical supervision would be in the hands of the geriatrician, and such day-to-day care as was necessary could be given by the house-physician of the geriatric unit.

I should like to express my appreciation of the co-operation extended by the general practitioners in Greenwich and Deptford, who are carefully selecting their patients for admission, thus enabling us to admit really needy patients with little or no waiting.

BIBLIOGRAPHY

- Allison, R. S. (1952). *British Medical Journal*, 2, 1286.
 Lord Amulree (1953). *Proc. roy. Soc. Med.*, 46, 339.
 — Arnold, P., and Polak, A. (1952). *Lancet*, 2, 191.
 Andrews, C. T., and Wilson, T. S. (1953). *Ibid.*, 1, 785.
 Exton-Smith, A. N. (1952). *British Medical Journal*, 2, 182.
 Graham, W. L. (1951). *Lancet*, 2, 931.
 Hastings, Somerville (1951). *Ibid.*, 2, 879.
 Norris, V. (1952). *British Medical Journal*, 1, 129.
 Report on the Treatment and Care of the Elderly Chronic Sick in Bristol. By the Bristol Local Medical Committee. 1953.

Preparations and Appliances

SIMPLE THYROID RETRACTORS

Sir HENEAGE OGILVIE writes: In 1953 the surgeons of Wellington, New Zealand, gave me the privilege of taking part in a three-weeks postgraduate course in surgery as a member of the staff of the Wellington Hospital. I was

allowed the use of 25 beds, allotted a very able house-surgeon and ward sister, and given two operating days a week.

For a thyroidectomy I was provided with a pair of retractors of a type new to me,

and better than anything I had seen in England. I was unable in the time to buy some for myself, but on my return I drew what I wanted and asked Down Bros. to make them for me. The idea comes from the Wellington Hospital, but I cannot say who designed them, nor can I claim that mine are a true copy of the originals.

As will be seen from the figure, the retractors might be described as a pair of large opened hairpins made of spring

wire, with the points bent down. After the skin flaps have been turned up and down, towels are laid over them, and a retractor, closed by compression, is put under the edge of the towel and skin on each side of the midline and allowed to spring open. The points of the retractors should be about an inch (2.5 cm.) apart above and about 2 inches (5 cm.) apart below. Towel forceps are used to clip the towels at the ends of the incision, and as they drop back they hold the elbows of the retractors back as well. These retractors give adequate exposure, stay in all the time, are never in the way, damage nothing, are cheap, and need no repairs. *O si sic omnia.*

Nova et Vetera

SWEDISH PIONEERS OF MEDICINE GO TRAVELLING

In a "Docent" lecture published in the organ of the Swedish Medical Association, *Svenska Läkartidningen*, for September 4, 1953, Dr. Wolfram Kock, of Stockholm, shows how, in the past, if you wished to end up as a pioneer of medicine you had to travel far and see much in your youth. Not a bad thesis even now. His material consists of two distinguished quartets. The first was composed of Olaus Rudbeck, Petrus Hoffvenius, Urban Hiärne, and Johan von Hoorn, who made their mark in the seventeenth century.

A Seventeenth-century Quartet

Olaus Rudbeck was the discoverer in 1650 of the thoracic duct—a discovery made independently of the Frenchman Jean Pecquets, whose identification of this duct dates back three years to 1647. In 1652 Rudbeck's discovery of the lymphatic glands and lymphatic system earned him renown and an invitation to demonstrate this system to Queen Kristina of Sweden. When he finally settled in Sweden he founded the botanical garden in Upsala, having taken seeds and plants from Holland wherewith to stock it.

Hoffvenius, who died in 1682, had already successfully defended two theses, entitled respectively "De Oculo" and "De Symptomatibus," when he set off in 1658 for Leyden on a royal scholarship. After studying anatomy there he returned to Sweden in 1661, and was appointed professor of medicine "et Physices" in Upsala. His gifts as a physician earned him the title of the "father of Swedish medicine," but for want of hospital accommodation he taught his students by taking them with him on his rounds to his patients—a system he had learnt in Leyden.

Hiärne was only 25 years old when he set out on his travels as personal physician to a high Swedish official appointed Governor of Riga. From there he travelled to Germany, Holland, England, and France, and he spent three years studying chemistry in Paris under Christopher Glaser, apothecary to Louis XIV. On his way home from Paris in 1673, Hiärne picked up a useful tip from the famous Dutch doctor Helvetius, who told him that ipecacuanha was a cure for dysentery. The Polish campaign by Charles XII of Sweden was at this time seriously complicated by dysentery, for which the new drug proved a godsend under Hiärne. As well as being a popular physician in Stockholm, he was instrumental in founding Collegium Medicum, an organization for the control of the practice of medicine in Sweden.

Johan von Hoorn, the "father of Swedish obstetrics," earned this title by his prolonged studies in Leyden and Paris. By September, 1687, when he reached Paris, he had already mastered the literature of his subject, but still felt in need of some practical experience. He would have liked to acquire it at the old hospital, Hôtel Dieu, where a whole ward was set aside for obstetrics. But foreigners were not welcome here at this time, so Hoorn had to learn his trade by joining forces with a Madame Allegrain, known