number of principals increased by some 500. Fresh admissions to lists totalled 1566, of which 1177 were for replacement of doctors who had died or retired. 781 doctors were admitted to partnerships in established practices; and, of these, 344 had served preliminary assistantships. During the last three years rather less than one-fifth of the total of assistants have become partners, but the evidence suggests that this proportion is increasing as a result of the Danckwerts award. At first sight these figures are encouraging, but several questions must be answered before the chances of the more recently qualified can be estimated. We do not know, for instance, how many mature doctors, including senior registrars who have been unable to attain consultant status, are still trying to enter general practice; but the total is likely to increase in the coming months, as Dr. FORRESTER and Dr. WALTON make clear in a letter on p. 793. Nor do we know how many replacements can be expected in future—the number was rather smaller last year than the year before. An actuarial forecast would be helpful. The increasing rate of admission of assistants to partnerships is on the whole satisfactory, but the fall of 150 in their total suggests that its effect may be to improve the status of those already practising without increasing the opportunities of entry for younger men. Certainly advertised assistantships, even in some of the less attractive areas, continue to draw an excessive number of applications. The formation last year of over 300 new practices in under-doctored areas is welcome; but such expansion will obviously be limited, and there are already signs of a better distribution of doctors; the number with either very large or very small lists is tending to decrease. At the top of the scale, last year there were 7397 practitioners with average lists of 2869, whereas the year before there were 7055 with average lists of 3009. At the other end of the scale, last year there were 1062 practitioners with average lists of 2010, as against 1075 with average lists of 1941 in the previous year.

Recruitment to medicine is governed by the demand for doctors and the capacity of the medical schools. After the late war the demand seemed to be inexhaustible and the numbers qualifying increased; but the position has changed, and now the profession is probably becoming overcrowded. The Medical Practices Committee emphasises the difficulties of attempting to predict future requirements of doctors in the present changing situation. Nevertheless the attempt should be made. The medical curriculum lasts more than five years; if the schools are accepting too many students they should know as soon as possible. From the professional standpoint the health service ought to provide a reasonable chance of a permanent post, without undue competition, for a doctor as soon as he is experienced enough to fill it; too long in temporary or junior posts is not good for the doctor or for the service. The status of principal should be generally attainable in general practice between the ages of 30 and 35, and that of consultant a year or two later. Last year the average age of successful applicants in general practice was 36. This is better than the average of 38 in the previous year, but there are still doctors over the age of 40 who are finding entry extremely difficult. Oddly enough there are still too few applicants for junior posts as house-officers, senior house-officers, and registrars in the peripheral hospitals. This is partly due to an absolute shortage: but it also to some extent reflects unequal distribution. The compulsory preregistration year in hospital may improve the supply of house-officers, but it can hardly affect the slightly senior posts. Doctors might be glad of a year or more as registrar in a peripheral hospital if their future seemed more assured than it is now, and if they were convinced that, when they applied for a post in general practice, registrar experience would be counted an added qualification and not, as FORRESTER and WALTON assert, "usually a positive disadvantage." An improvement at the top would undoubtedly ease the situation lower down the ladder.

Annotations

MEASLES IN VIRGIN SOIL

MOST of us have heard of epidemics of measles which decimated the populations of remote islands or other isolated communities from which the disease had been absent for well over a generation. There are records of very high mortality in such outbreaks among the native population of the Amazon (1749), Esthonia (1829), Hudson Bay Indians (1846), the Cape Hottentots (1852), Tasmania (1854), and Mauritius (1874). In Fiji in 1875 about 20,000 people—nearly 25% of the population—died of measles[1]; and in the next outbreak 32 years later 6% of the population died. In the Faeroe Islands, after a great epidemic in 1781 there was no measles until 1846 when about 6000 (78%) of the 7782 inhabitants contracted the disease; none of the 98 old persons who had had the disease in 1781 had a second attack.

For the first time in medical history, measles gained a foothold in Southern Greenland in April, 1951.[2] The source of infection was a young Greenlander, infected in Copenhagen, who, soon after landing in Greenland and just about the time of onset of symptoms, took part in a public dance attended by 200–300 people from all parts of the community. This outbreak is certain to become a classic in medical history because of the extremely high attack-rate. The number of persons who contracted typical measles within three months was 4221; a further 36 had less definite attacks. 31 who had previously had measles in Denmark, and 27 treated prophylactically with convalescent serum or gamma-globulin did not contract the disease. In the Julianehåb district, to which the disease was localised, of the whole unprotected population of 4262 only 5 escaped the disease; this gives an attack-rate of 999 per 1000—surely a record. The mortality was much lower than might have been expected, probably owing to penicillin treatment of complications combined with the modification produced by sero-prophylaxis of about 1000 people, both of which measures were rapidly organised from Denmark. Only 77 deaths were recorded—a rate of 18 per 1000.

The incubation period was nearly always 13–14 days from rash to rash; but in 1 case it was certainly as long as 19 days, and in several it was only 6–10 days. The course of the disease was remarkable only for two special features: a very pronounced enanthem, usually hæmorrhagic, of the mouth and palate present in 75% of the patients in the prodromal stage; and virtual absence of conjunctivitis, photophobia, and eye complications. These may be related respectively to the Greenlanders' well-known tendency to hæmorrhages, and to the Northern climate. The frequency of complications in a series of 1657 patients who were not treated prophylactically was 45%; and of these complications 80%

1. Cormey, B. G. *Trans. epidem. Soc., Lond.* 1883, **3**, 76.
2. Christensen, P. E., Schmidt, H., Jensen, O., Bang, H. O., Andersen, V., Jordal, B. *Acta med. scand.* 1952, **144**, 313, 430.

were pneumonias which occurred early, commonly in the prodromal stage or during the first two days of the rash. Otitis media accounted for only 10% of the complications—probably owing to the early use of penicillin for the treatment of pneumonia. An unusual, and quite the most serious, complication was circulatory failure. This appeared most usually in elderly patients and pregnant or puerperal women. It most often took the form of congestive heart-failure, and acute myocarditis was rare. It was thought to be the result of stress on a previously weakened myocardium, mainly in the elderly. Encephalitis was seen in 6 of this series of 1657 cases; and in 4 of these cases the patient died. This gives a rate of 1 case of encephalitis per 275 cases of measles, which is at least three to four times the highest rate previously recorded; and the fatality-rate also was very high. Postinfectious encephalitis, at least the post-vaccinal type, has been said to be rare in the tropics. Is it relatively common in the far North? Of the 26 women in this series who were known to be pregnant, half were delivered at term and half gave birth to premature infants or aborted. No congenital abnormalities were observed in any of the infants born of mothers who had contracted measles during pregnancy.

In this epidemic a very interesting relation was established between measles and tuberculosis. Practically every tuberculous person in the district must have contracted measles, and this very unusual happening seems to have brought an increase both of deaths from tuberculosis and of new cases. In one of the larger villages examination of 352 people immediately before and after the measles epidemic showed 19 new cases of tuberculosis (13 with positive sputum); and among 58 cases of tuberculosis recognised before the epidemic 9 patients died, and at the second examination 13 showed progression. This was clearly more than normal for the district and seems to justify the conclusion that measles reduces resistance to tuberculosis. It was also confirmed, in 51 cases tested, that tuberculin allergy was temporarily suspended during and after measles. The majority did not again become tuberculin-positive until 8–12 days after the rash cleared, and a few cases not until 30–35 days thereafter. Further, no less than 9 cases of postprimary erythema nodosum were observed within a month after the rash. This was thought to be due most probably to a mutation of the bacillus after the temporary suspension of tuberculin allergy.

THE CASE FOR GERIATRICS

TEN years ago the American Geriatrics Society held its first meeting, and this year sees the publication of the first number of its journal.[1] Interest in the welfare of the elderly is increasing rapidly, and the appearance of such a journal is welcome. Medicine in the elderly does not in fact differ noticeably from medicine in the middle-aged, and there are signs of reaction from the former despondent attitude towards the treatment of elderly patients.

It is useful to have a journal devoted entirely to geriatrics, for, as in all pioneer work, there is a tendency to lose sight of the advances, gained or promised, if no attempt is made to create some special interest in the subject. Although medically geriatrics is simply part of general medicine, administratively this work has to be established as a new field for special endeavour: such work as that described by Dr. Andrews and Dr. Wilson on p. 785 shows how much can be done in this way. Probably it is also true to say that much of the advantage to be gained from this approach to the treatment and prevention of disease among the elderly will be lost if in the initial stages these patients are treated and cared for by those whose real interest remains the care of younger persons; for, although it would be absurd to attempt any clear segregation of patients based on age alone, there are some elderly patients who, because of their social background, their general physical condition, or their disease, seem more suitable for the geriatric than for the general physician.

The first number of the *Journal of the American Geriatrics Society* lays emphasis on, among other things, the excellent response of elderly patients to surgery, and shows how, by means of early ambulation, improved methods of anæsthesia, and thorough preoperative investigation and treatment, age can be prevented from being any contra-indication to radical surgery. Such work strengthens the challenge of medicine to our society. Old age can be made active and healthy: what framework can be provided within which life will continue to have a meaning?

1. *Journal of the American Geriatrics Society*. Published bi-monthly by Williams & Wilkins Co., Baltimore. London agents: Baillière, Tindall, & Cox. 82s. per annum.

ACCIDENTAL INFECTIONS

THE patient's safeguard against accidental infection depends on the vigilance of his medical and nursing attendants, whose "aseptic conscience" may be developed in different degrees according to the nature of their normal work. Agar slopes and tubes of broth are designed to grow bacteria; therefore bacteriologists must either learn a strict aseptic ritual or change their job. The patient in a first-class operating-theatre is safe in the care of a staff well schooled in the practice of asepsis, and his tissues can deal with the few organisms that may be accidentally introduced no matter how carefully an operation is conducted. In the ward, however, the dangers of accidental infection are sometimes less keenly felt, and unexpected disaster may be the consequence. For example, Rabinowitz and Schiffrin[1] report a tragic series of infections caused by *Chromobacterium prodigiosum* (*Serratia marcescens*) in a children's ward of a Jerusalem hospital. The source of infection was apparently a bottle containing 5% glucose in normal saline, which had been used for intravenous treatment. The organism was first isolated in pure culture from two septic wounds. Next it was found as the cause of meningitis in a child, aged 4 months, who died. During the next 2 months the same organism was isolated from nine patients with various lesions involving the skin, meninges, ears, and joints. When the source of infection was traced, and the contaminated bottle discarded, the trouble ceased. The organism was sensitive only to chloramphenicol and aureomycin; and broth cultures killed mice, apparently by the action of a heat-stable endotoxin.

The report by Rabinowitz and Schiffrin confirms other evidence[2] that chromobacteria cannot be disregarded as potential pathogens, and it emphasises that the aseptic standards of the laboratory and operating-theatre must be applied with equal vigour in wards. It is clearly inadvisable, for example, to use the same bottle of glucose saline more than once; in the laboratory any container which has been opened only once, no matter with what care, is no longer accepted as sterile. The importance of applying this doctrine to ward practice is further underlined by the experience of Dr. Michaels and Dr. Ruebner, described on page 772 of this issue, who found that under favourable conditions coliform bacilli may grow quickly enough in some fluids to cause severe effects during intravenous infusion prolonged for more than one day. They suggest that if intravenous therapy is required for several days a new giving set should be used approximately every 24 hours; if the patient has few good veins, the original needle may be left in position. Admittedly, Michaels and Ruebner observed infection in only two cases during 2 years and they found that 5% glucose saline, because it

1. Rabinowitz, K., Schiffrin, R. *Acta. med. or., Jerusalem*, 1952, **11**, 181.
2. Annotation. *Lancet*, 1952, ii, 617.