balance. Unfortunately neurolabyrinthitis is often bilateral, in which case total deafness results. *Mumps* may also be complicated by neurolabyrinthitis, though here fortunately only one labyrinth is likely to be affected. Here, again, the symptoms of acute labyrinthine failure are usually attributed to the causal infection. In another small group there are signs of acute vestibular failure accompanied by facial palsy and possibly a vesicular eruption around the affected ear, the so-called *geniculate herpes* or Ramsay Hunt syndrome.

Toxic.—The vestibular system is undoubtedly vulnerable to certain toxins, in particular to streptomycin. This may cause permanent impairment of vestibular function, both labyrinths usually being affected. In an effort to overcome this selective toxic action of streptomycin, the dihydro compound was introduced. Unfortunately this has proved to have a similar effect on the cochlear apparatus, so it seems that until a non-toxic compound has been found it is wiser to use the original brand cautiously, as it is obviously better to be giddy than deaf. In another and not uncommon group there is a sudden and inexplicable loss of vestibular function on one side, with all the clinical features of acute vestibular failure. Hearing is unaffected, and it seems that the site of the lesion is somewhere in the vestibular neurons. Dix and Hallpike refer to this condition as *vestibular neuronitis*, and they have found that in a proportion of cases there is an active focus of sepsis which may be responsible. The condition is easily recognized as one of acute vestibular failure by the sudden onset of severe vertigo accompanied usually by vomiting, which demands absolute rest in bed, as the slightest movement of the head or body causes further vertigo. The symptoms slowly subside over the days, and after two or three weeks all is well apart from a little residual dizziness with sudden movements of the head. It is probably the cause of so-called "epidemic labyrinthitis," though in many cases there is no evidence of an infection.

Paroxysmal Positional Vertigo.—In this group of cases vertigo is induced only with the head in a certain position, usually when it is placed backwards and to one side. It will be found that in such cases the paroxysm of vertigo lasts only a few seconds, and does not reappear for at least half an hour, even when the offending position is resumed. Dix and Hallpike have found a lesion in the utricular labyrinth in such a case. This condition is benign and may disappear after a few months. In some cases there is a history of a head injury while in others a focus of sepsis has been demonstrated. It has to be distinguished from the central form in which fatigue does not occur.

Some idea of the relative frequency of these different causes of vertigo can be gained from the following figures, which show the various cases in a series of 1,523 patients referred for an otological examination because of vertigo:

Central	..	..	..	..	..	107
Peripheral	..	..	..	..	..	1,349
Hydrops	..	..	..	..	..	972
Trauma	..	..	..	..	..	123
Vestibular neuronitis	..	..	..	..	..	109
Positional	..	..	..	..	..	84
Infective	..	..	..	..	..	61
Not Classified	..	..	..	..	..	67

It will be appreciated that the proportion of central cases in this series is smaller than a general neurological experience would suggest, though it corresponds with Gowers's findings.

Management

The first step in the management of a case of vertigo is to exclude, if possible, any central cause. If this can be done, then it is important to ensure that the patient appreciates that the underlying cause of the condition is benign. If the explanation offered is acceptable—and it is usually thankfully received—it dispels many fears and doubts and is an important step in rehabilitating the patient.

Any infective ear condition must be dealt with, while for the remainder it is important to get and to keep them moving once the acute stage is past. Special balancing exercises are invaluable for traumatic cases, and these are most successful when carried out in a class.

During an attack of acute vestibular failure absolute rest and strong sedatives are needed. Vomiting may call for an injection, the most effective being inj. phenobarbiton. sod. 3 gr. (0.2 g.). In Ménière's disease a course of one of the barbiturates, though it does not have any specific effect, has a generally calming influence, and to a certain extent modifies the attacks. Certain seasick remedies containing hyoscine or an antihistaminic may be very useful in modify-

ing the severity of the attacks, and are often helpful in traumatic cases in which the dizziness may be more or less constant.

In Ménière's disease a serious attempt should be made to limit the intake of sodium, and a low sodium diet should be ordered. Discouraging the retention of fluid within the body often seems to ward off attacks. In the hope of influencing the blood supply of the labyrinth histamine, nicotinic acid, and operations on or injections into the cervical sympathetic are sometimes tried. Such measures may help some cases, but it is difficult to assess the value of any conservative treatment in a condition such as hydrops of the labyrinth in which long periods of spontaneous remission are apt to occur. When the attacks are not controlled by conservative measures, and when the disease is unilateral and the hearing is badly affected, some form of operation on the labyrinth may have to be considered. Opening the bony external semicircular canal and removing a portion of the membranous labyrinth is enough, in Ménière's disease, to destroy all function and prevent any further attacks from that labyrinth. It is simple in terms of general surgical principles, there need not be any complications, and recovery is quick.

In bilateral cases, and when the hearing in the affected ear is still useful, intracranial section of the vestibular nerve may be considered, though of course this is a more extensive and potentially a more serious operation than labyrinthectomy. Deliberate intoxication of the vestibular labyrinth with streptomycin has been advocated, but experience suggests that in some instances the cure may be worse than the disease, and such a form of treatment should be considered only in relatively young patients in whom the condition is bilateral.

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NURSE-TRAINING SCHEME FOR EX-TUBERCULOSIS PATIENTS

BY

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There are probably very few sanatoria which do not employ some ex-patients on their staff, and no doubt many have already developed their own schemes for employing ex-patients as nurses. The experience of the scheme at Creton Sanatorium, Northamptonshire, may be of interest to those concerned with tuberculosis and the administration of sanatoria.

There are 152 beds at Creton Sanatorium, 91 for males and 61 for females. The establishment allows for 40 on the nursing staff, but the total number of nurses employed is at present 34. When investigating the possibility of meeting the nursing shortage by the employment of ex-tuberculosis patients we found that though a valuable contribution to staffing difficulties was made by the casual or incidental employment, in various capacities, of ex-tuberculosis patients, much better results, both for the sanatorium and for the ex-patient, could be anticipated if employment were put upon a more regular and permanent basis. Further, although it was probable that without any action at all by the sanatorium authorities a few ex-patients would seek employment

there, it was almost certain that this number would be increased if a specific scheme were in operation and an active, intelligent, and continuing interest taken in it by all concerned.

The following summary of the final report which was adopted by the hospital management committee will give an indication of the scheme now actually in operation.

Selection

Patients of both sexes could participate in the scheme, though it was felt that females would probably outnumber males. There were no age limits, though younger patients would tend to be more attracted than the older ones. Consideration could be given to patients who were no longer infectious and who were otherwise suitable, and it was estimated that perhaps some 2% of all patients could be regarded as potentially eligible for the scheme.

The suitability of patients would be a matter for the ward sister, almoner, matron, and consultant physician, though it would be left to the two latter officers to make the final decision. Those who appeared to be suitable would be told the outlines of the scheme and given time to think the matter over. Those who were interested would, at the appropriate time, be enrolled for a probationary period of approximately three months upon a part-time basis of from 12 to 30 hours a week. There would be no general publicity regarding the scheme, as this might lead to distress on the part of patients who wished to participate but for medical or other reasons were not suitable.

Training

It was emphasized that the training of ex-patients (for the Tuberculosis Association certificate) was an essential part of the scheme, rather than their mere employment, and it was early recognized that the strain of the three-months intensive course of lectures for the preliminary State certificate presented a real difficulty. This was overcome by arranging that the course of lectures should in fact be taken over a period of nine months, and, as these lectures were taken at the Group General Hospital, arrangements were made for ex-tuberculosis student nurses to take half the lectures in one three-months course, to take no lectures for the next three months, and then to take the other half of the lectures in the next three-months course.

The strain of practical experience during the first year of enrolment was also mitigated for the ex-patient student nurse by concentrating entirely upon the tuition aspect of her ward work and requiring from her no element of contribution to the normal routine work of the sanatorium, such as would be required in the normal course of events from nurses in training. In these ways it was estimated that an ex-patient student nurse should be able to take her preliminary certificate within 15 months of enrolment, while working a 36-hour week as compared with the 48-hour week of the normal student nurse. The final T.A. certificate could be taken one year later, so that the ex-patient student nurse would again be able to devote all her energies to acquiring experience necessary for the certificate rather than to contributing fully to the work of the sanatorium.

It was suggested that, once she had secured her T.A. certificate and was able to work full time or nearly full time, the ex-patient nurse should be eligible for promotion to staff nurse, ward sister, and eventually administrative sister in open competition with other nurses suitably qualified. There seemed to be no practical or legal reason why nurses holding only the T.A. certificate should not act as ward sisters in sanatoria, provided a senior officer with the S.R.N. qualification was always available.

At all stages the ex-patient student should be subject to adequate medical supervision, and she should be encouraged to report if she became over-tired. Care would be necessary to ensure that students did not overtax themselves, but, on the other hand, they must be encouraged to think of themselves as approaching a complete return to normal life.

From first to last there must be the clearest recognition that the scheme depends entirely upon part-time work, and there must be no disposition to regard this as an inconvenient temporary arrangement. The amount of time to be worked must be carefully assessed, and, if necessary, modified from time to time by the consultant physician.

The original scheme envisaged that all ex-patient trainees subject to it would be resident, and there is no doubt that this is preferable if at all possible. Immediately upon enrolment, and for some months thereafter, accommodation separate from the permanent staff of the sanatorium is desirable from all points of view, but few sanatoria have such separate accommodation readily available, and its special provision is at the moment out of the question. In the light of experience the scheme was accordingly modified to permit non-resident students to participate, and this has worked quite successfully.

Salary and Superannuation

Salary scales are those laid down by the appropriate Whitley Council for T.A. certificate-holders and trainees, with pro-rata adjustment according to the time worked. This adjustment is applied to board and lodging repayment as well as to remuneration.

Superannuation could have proved a difficult problem, as there could have been no pretence that ex-patients were being fully rehabilitated and offered a career if they could not have been given superannuation rights similar to those of other employees. The very clear and helpful wording of circular H.M.C. (48) 79 of December 31, 1948, removed any difficulties there might have been on this account. This circular amended the terms previously required of medical certification in connexion with superannuation, so that the form of medical certificate now required to secure entry to the superannuation scheme need merely state that the candidate "is free from any physical defect or disease which now impairs his capacity satisfactorily to undertake the duties of the post for which he is a candidate." Such a certificate can obviously quite honestly be given to any ex-patient nurse whose condition is quiescent and non-infectious and who has reached the stage of working full-time or nearly so. The wording of the circular was clearly designed to include ex-tuberculosis patients (it is specifically so stated in its first paragraph), and it would indeed have been a most unfair discrimination against such employees if the physician's knowledge of their past history and calculation of any possible future breakdown had prevented the issue of a certificate and thus inclusion in the superannuation scheme.

Conclusions

The scheme has now been in operation for approximately two years, and there are at the moment seven student nurses recruited from ex-patients under its terms. This figure represents 1.5% (2% if ward orderlies, etc., are included) of patients passing through the sanatorium during the period of operation of the scheme, and is fairly close to the estimate originally made. Neighbouring chest clinics and sanatoria were informed of the scheme, and one or two recruits were obtained through the clinics, the decision whether or not to enrol within the scheme being that of the sanatorium chest physician in all cases.

The seven ex-patient student nurses are members of a total complement of 12 student nurses, so that the normal recruitment level of the sanatorium, without the assistance of the scheme, would have undoubtedly meant the closing of beds. In addition to the seven trainees within the scheme, there are two ex-patient ward orderlies and one ex-patient staff nurse to whom the scheme applies, but who had been discharged from the sanatorium before its inception.

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