secondary carcinoma of the bone in cases which have been regarded as chronic sciatica.

An examination of the radiographs of hip-joints during the past five years at the Royal Orthopaedic Hospital, the Warwickshire Orthopaedic Hospital, the Queen's Hospital, and the Carnegie Infant Welfare Centres, Birmingham, has shown the following pathological conditions:

In Persons under 20			
Congenital dislocation of the hip-joint	88	Syphilis	4
Tubercle	60	Tumours	4
Perthes's disease	33	Fracture of femur neck	3
Septic arthritis	27	Dislocation of hip-joint	3
Slipped epiphysis of femur	26	Myositis ossificans	3
Infantile coxa vara	15	Osteochondrodystrophy	3
Rachitic coxa vara	15	Cyst in femur neck	2
		Haemophilic changes	1
In Persons over 20			
Osteo-arthritis	130	Secondary carcinoma	8
Chronic arthritis	73	Sarcoma	3
Septic arthritis	30	Cyst of femur neck	2
Fracture of femur neck	30	Syphilis	2
Paget's disease	12	Charcot's disease	1
Dislocation of hip-joint	10	Hydatid	1

For success in the treatment of most of these conditions, particularly those occurring in the child, early diagnosis is essential. While it can be said that certain cases of tubercle of the hip-joint do not show radiographic changes in the very early stages, one should not be deterred from having a radiograph taken, as this often reveals greater destructive changes than are suggested by clinical examination. The radiographic findings prove that the earlier a congenital dislocation is detected and treated the better the final result. The condition of infantile coxa vara has been diagnosed from a radiograph in a child of 7 months. This condition shows some of the features of Perthes's disease, in that the bone of the femoral neck becomes fragmented, softened, plastic, and yielding to pressure. As a general rule the active phase passes after a few years, normal bone is laid down and a sound femur produced, retaining, however, the deformity caused by pressure on the disorganized structure during the active phase. The radiographic appearance of this and Perthes's disease suggests that if the "plastic" bone were put at rest and freed from pressure, little deformity would result. Slipping of the femoral epiphysis usually occurs without any marked trauma. Injuries which result in separation of epiphyses show on the radiograph that the lesion is not confined to the displacement of the epiphysis, but that fragments of the diaphysis are carried with it. Injuries near the end of bones not uncommonly result in fractures above the epiphyseal line, leaving the latter intact. Fracture of the femoral neck in children is relatively rare, but when it does occur the epiphysis is not usually displaced. When the epiphysis is displaced it is frequently impossible to get any history of trauma, and the radiographs do not show detached fragments of the femoral neck. The condition being frequently bilateral, radiographic appearances suggest that it is due to a shearing strain on a disorganized metaphysis. Deformities of the pelvis seen in children who have had rickets show remarkable improvement after orthopaedic treatment, marked coxa vara being almost completely restored to the normal. Radiographs of the adult show that a large proportion of fractures of the neck of the femur (about 50 per cent.) fail to unite, and that pronounced bone changes often occur in and around the hip-joint after dislocation. Early and obvious osteo-arthritic changes are not unusual. These factors have a very important bearing in compensation cases.

Paget's disease of bone is a much commoner condition than is usually taught. Its presence is often revealed by a radiograph of the pelvis years before the bending of the long bones might have caused the clinician to suspect it. Simple cysts in the neck of the femur may develop to such a size that fracture results from slight trauma ;

but some of them, having reached a certain size, cease to develop, and ultimately become surrounded by sclerosed bone, calcification of the contents occurring. Hydatid cysts of the bone may remain undiagnosed for ten or more years, and eventually lead to the patient's death. The first indication of malignant disease may be seen in the radiographic examination of a patient with persistent sciatica, erosion of the bone near the hip-joint resulting from secondary deposits.

A NOTE ON THE EPIDEMIOLOGY OF TINEA CAPITIS

BY

G. H. PERCIVAL, M.B., CH.B., PH.D., F.R.C.P. ED.

ASSISTANT PHYSICIAN, SKIN DEPARTMENT, ROYAL INFIRMARY,
EDINBURGH

The clinical appearances of microsporon and trichophyton infections of the scalp, and the varying distribution of the causative fungi according to geographical localization, are common knowledge. As less is known regarding the infectivity of the disease and its occurrence in epidemic and endemic form, a study of its incidence amongst Edinburgh school children for the past eighteen years may be of interest. During this period 2,701 cases of tinea capitis have been treated in this school population.

In Edinburgh all children attending education authority schools who are found to be suffering from ringworm of the scalp during routine school medical examination are segregated in a special school. This system has been in operation since 1912. Here, in addition to teaching, local treatment is carried out daily, though the children do not reside in the school. X-ray or thallium treatment is given at the Skin Department of the Royal Infirmary, Edinburgh, the local treatment being also supervised there. As has been reported in a previous paper on the treatment of scalp ringworm with thallium acetate, the period of isolation at the special school is about 135 days when epilation has been produced by x rays, and 113 days when thallium acetate has been used. The parents are told how to carry out local treatment at the week-ends, and are warned of the risk of infection to other children.

CHART I.—Yearly incidence of tinea capitis during the years 1912-1930.

During vacations treatment is entirely in the hands of the parents, but is still supervised at fortnightly intervals in the Skin Department of the Royal Infirmary.

The medical inspection of schools is conducted throughout each term, and is not concentrated on any particular part of a term. In addition to cases discovered during routine school medical examination, a small number of cases are first seen in the Skin Department, and are referred from there to the special school.

The curve of yearly incidence of tinea capitis (Chart I) shows that the disease remains endemic, in spite of strict medical inspection and supervision of treatment. There appears to have been a wave of increased endemicity during

the years 1918-24. This may be more apparent than real. The figures from 1912 to 1917 may well undervalue the actual numbers, for the system of isolation was during the earlier part of that period an innovation, whilst school medical inspection was less rigorous during the war than

CHART II.—Average monthly incidence of tinea capitis during the period 1912-1930.

afterwards. Owing to the possibility of a naturally occurring periodicity in the case incidence (apart from the effect of isolation and supervision) it cannot be concluded that the decreasing incidence during the years 1925-30 indicates the slow elimination of the disease as a result of

CHART III.—Average incidence of tinea capitis per five days during the period 1912-1930. (One small square=five days.)

preventive measures. The explanation may rest in a lower virulence of the infecting fungi, or in a combination of both these factors. As far as the available figures show, the disease is exactly comparable to scarlatina or diphtheria as regards its occurrence over a period of years.

The monthly and five-day incidence charts (Charts II and III) show clearly that the isolation of cases as they occur has a beneficial influence on the case incidence or the number of contact infections during the school terms. This holds good in spite of the fact that most of the children are highly infectious for at least a few days before they are isolated, and when the lesions are developing to recognizable dimensions. The highest figures of incidence are reached at the commencement of the school terms—that is, following a period during which fresh cases probably escape detection for a longer time than is the case in term time, when the children are subjected to routine medical inspection. The magnitude of the rise in case incidence after a vacation seems to vary directly with the length of the vacation. It is recognized that in a given community of children infection may be acquired from outside sources during a vacation as a result of temporary changes of abode, or of temporary changes in the distribution of the general population. Infections acquired in such a manner cannot, however, account for more than a small increase in case incidence in any one school population, and the increase noted can only be

attributed to the natural spread of the disease in the school locality as a result of the absence of any controlling measures to deal with new cases during the vacation period. This fact raises the question whether infection is more readily acquired in home surroundings than at school. The curve of incidence can be to a great extent accounted for by the former hypothesis.

The average number of cases recognized during the first five days of September over a period of eighteen years was 8.5—the highest incidence of the whole year. Each of these cases had a greater or less opportunity to infect others before they themselves were recognized and isolated. If school contact offers ample opportunity for several children becoming infected from one child when there is a limited period during which infection can occur, then an abrupt rise in incidence might be expected during the second, third, or even fourth five-day period of September. This, however, does not occur, and there is a steady diminution in case incidence during the remainder of the term. It suggests that tinea capitis spreads slowly, and that a sudden rise in case incidence does not take place when infection is first introduced into a non-infected population. The endemicity is due to a slow spread of infection, and

to the occurrence of infected cases which are overlooked for a considerable period. The disease is not characterized by sudden sharp epidemics. While variations in the virulence of the infecting fungus may account for the fall in case incidence during the past six years, it cannot account for the variations in the monthly and five-day incidence, calculated from figures taken over a period of eighteen years.

That cases of tinea capitis already under treatment do not act as potent sources of infection is shown by the decrease in case incidence during school terms. This occurs despite the fact that the children are only segregated during school hours.

On account of the epidemiological characters of the disease, it is doubtful whether any system capable of being put into operation under existing conditions, where supervision throughout the entire year is impossible, would be able to eliminate the disease completely from a large school population.

PUERPERAL SEPSIS AND PROPHYLACTIC VAGINAL ANTISEPSIS

BY

C. L. SOMERVILLE, M.D.

SURGEON, LEICESTER AND LEICESTERSHIRE MATERNITY HOSPITAL

It has always seemed to me that the ordinary conduct of a simple forceps delivery was a contradiction of all the rules and axioms of surgical procedure. It is well recognized that the vagina contains organisms in every case. Recent work has shown that in the apparently normal woman staphylococci are present in about 60 per cent., streptococci in 42 per cent., and the deadly *S. haemolyticus* in 2.7 per cent., while other organisms, such as *Bacillus coli*, are also present. In the simple forceps case the operator sterilizes the skin of the patient's perineum, his own hands, his gloves and instruments, and then straightway passes them through the bacteria-laden mucus of the vagina into the uterus—over a surface and through a medium that no general surgeon would tolerate for one moment. It is true that the vagina may be scrubbed out with ether soap, but this is