Fig. 2 shows the boarding-school and the family as the main sources of cross-infection; Fig. 3 the family and residence abroad. These sources are not primarily dependent on local amenities, so the diagrams could be expected to apply to the appropriate sections of the population in any part of the country.

None of the diagrams would be true for towns or districts of Britain where a high proportion of the population is engaged in a single employment involving particular risks; for instance, mining communities. Here the main source of infection is the pit-head bath, and the high incidence in the miners themselves (Gentles and Holmes, 1957) would be expected to lead to an abnormally high incidence in their families and in the schools.

Finally, it must be stressed that many of the ideas put forward in this article are only deductions from the observed facts, and further surveys of specific sections of the population would be necessary to verify them.

Summary

The relative importance in attacks of tinea pedis, of flare-ups of latent endogenous infections, and of recent contact with exogenous sources of infection is discussed. It is concluded that the great majority of such attacks can be attributed to contact with infection from an outside source. If this is true, it should be possible to determine the routes by which tinea pedis is most usually circulated in any given locality. Such routes are suggested for the *interdigitale* type of *Trichophyton mentagrophytes* and for *T. rubrum* infections in Bristol and its immediate surroundings, and their applicability to other localities is discussed.

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Medical Memoranda

Meningitis due to a Soil Organism after Penetrating Injury of Pharyngeal Wall

The remarkable nature of the following case seems to be sufficient reason for putting it on record.

CASE REPORT

On March 23, 1959, a boy of 12 years was engaged in throwing a bayonet, dating from the 1914-18 war, and weighing 15 oz. (425 g.), against a tree-trunk, when the bayonet glanced off and entered the open mouth of his younger brother, aged 10. The point pierced the posterior pharyngeal wall and embedded itself in the cervical spine, whence it had to be pulled out with some force.

When admitted to hospital the boy was somewhat shocked and complained of dysphagia. There was a small superficial cut of the dorsum of the tongue, and a minute chip off the margin of the second upper right incisor tooth. A vertical laceration about $\frac{1}{4}$ in. (2 cm.) long in the posterior pharyngeal wall was gaping slightly, but no attempt was made to suture it. A.T.S. and prophylactic penicillin were given.

During the next 24 hours the boy became progressively more and more drowsy, and complained of severe frontal headache. Neck rigidity was marked and Kernig's sign strongly positive. Lumbar puncture yielded turbid blood-stained fluid. A combined regime of parenteral streptomycin and penicillin and oral sulphadiazine was instituted, and after a further 24 hours his condition rapidly improved. A week after onset, all signs of meningeal irritation had disappeared, and the pharyngeal wound had healed. The boy was discharged fit two weeks later.

The cerebrospinal fluid was found to contain numerous pus cells and occasional Gram-negative bacilli. These proved sensitive to all the antibiotics given. The final laboratory report stated that the organism grown was none of the known pathogens, but had the characteristics of one of the nitrifying soil bacteria. These organisms run into many thousands, and have never been fully classified, so it is not surprising that the one isolated could not be identified with any of the known types.

X-ray films of the cervical spine showed no bony injury. From a study of the films and from examination of an articulated skeleton it was evident that the bayonet tip must have pierced the meninges in one of two places—either beside the odontoid process of the axis vertebra or through the articulation of the atlas vertebra with the skull.

COMMENT

The possibility of such an occurrence must indeed be very remote. A slightly greater degree of force would have resulted in sudden death. To complete an unusual combination of circumstances, the tip of the bayonet must have carried into the meninges a soil organism which then became pathogenic. A search in the literature has so far revealed no comparable case.

LUCY M. ROCHELLE, M.A., M.B., B.Chir.,
 Junior Hospital Medical Officer, E.N.T. Department,
 Caernarvon and Anglesey General Hospital, Bangor.

The 1961 edition of the International Planned Parenthood directory, *World List of Family Planning Agencies*, is now available from the IPPF, 69 Eccleston Square, London S.W.1, price 2s. 6d. a copy. The directory contains the latest population figures and information on family planning services in fifty-seven countries.