in addition to the skin trouble. It was possible not only to determine the length of time required to clear impetigo with sulphathiazole ointment but also to compare its clinical effect with that of dilute ammoniated mercury ointment. The principal distribution of the impetiginous lesions is shown in the following table.

Table showing Chief Distribution of Impetigo in 51 Cases

*Generalized	..	..	23	Trunk	..	..	..	4
Face	..	..	10	Limbs	..	..	..	4
Scalp	..	..	7	Ears	..	..	..	3

* Cases in this group were suffering from impetigo alone or in combination with scabies.

The plan of treatment was somewhat as follows: Instructions were given for all crusts to be softened and removed. This was done by applying tinct. sapo moll. (B.P.C.) to the lesions with the aid of a face-flannel. This was considered important, and was done for all patients regardless of which ointment was to be subsequently applied. Those patients with generalized impetigo were soaped and soaked in a warm tub if their clinical condition permitted. Twenty cases of severe generalized impetigo, some two-thirds of which were scabious, were then treated as follows: to one half of the body there was applied ung. hydrarg. amm. dil. three times daily, and to the other half 5% sulphathiazole ointment, also three times daily. The latter ointment was prepared simply by incorporating 5% by weight of powdered sulphathiazole in a base of paraff. molle flav. This preparation is easy to make and the drug is rather evenly dispersed in its base, although flecks of the chemical can readily be seen through the ointment. The results of this comparative study were most illuminating. After the second day of treatment it was always easy to state which preparation had been used on each side of the body. Impetigo treated with ammoniated mercury healed rather slowly though steadily, requiring an average of eight days. Impetigo treated with 5% sulphathiazole ointment showed improvement in forty-eight hours and was healed by the fourth or fifth day. Thus the time of treatment was reduced almost by a half.

In addition to the above-mentioned 20 cases, 31 patients were treated with 5% sulphathiazole ointment without attempting a comparison. These patients' lesions closely followed the course of the above—namely, noticeable improvement in forty-eight hours and healing in four to five days. Impetigo of the hairy scalp is more resistant, and a group of 7 patients required an average of eight days for healing. This, however, is a considerable improvement on other remedies in general use. Another matter arising from this investigation concerns the common combination of impetigo and scabies. It was found that treatment of the parasitic infestation was greatly facilitated by clearing up the impetigo first. Antiscabies therapy could then be carried out more efficiently, with less discomfort to the patient and few recurrences. To apply sarcopticides in the presence of widespread sepsis is urged by some, but is actually impracticable and extremely uncomfortable.

Summary

An investigation was undertaken to determine an improved method of dealing with impetigo. The report concerns results achieved with 51 children treated in hospital.

Comparison was made between the clinical effects of 5% sulphathiazole ointment and ung. hydrarg. amm. dil. The former induces healing in approximately half the time taken by the latter.

The importance of removing the crusts of impetigo lesions before the application of antiseptics is stressed.

The advisability of treating the impetigo of scabious patients before antiscabies therapy is discussed.

Local therapy with sulphathiazole is considered to be, at present, the ideal treatment for impetigo.

I wish to acknowledge my indebtedness to the Medical Officer of Health for the London County Council for the facilities granted to me at the Eastern Hospital, and to Dr. Norman Begg, medical superintendent of that hospital, for helpful criticism and advice.

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Medical Memoranda

Meningococcal Meningitis in Advanced Pregnancy

The following case of meningococcal meningitis occurring late in pregnancy, with premature birth, is of interest. It was complicated by an abnormal mental condition, retention of urine, pyelitis, and a generalized eruption. The abnormal mental condition is of significance with regard to the view put forward that cerebral symptoms may be caused by sulphapyridine; the infant seemed to be unaffected by this drug.

CASE HISTORY BEFORE LABOUR

A housewife aged 35, said to be six months pregnant, became ill at home on April 1, 1941, with headache and vomiting. She was admitted to hospital on April 5 rambling, and in a restless condition, with pronounced head retraction and a positive Kernig sign. Lumbar puncture was performed, and 20 c.cm. of turbid cerebrospinal fluid under pressure was withdrawn. Four 0.5-gramme tablets of sulphapyridine were given, and the patient was immediately transferred to the Watford Isolation Hospital. Examination of the cerebrospinal fluid showed 10,000 white cells per c.cm. (98% polymorphs and 2% lymphocytes) and large numbers of Gram-negative diplococci; cultures yielded a pure growth of *Neisseria meningitidis*, Group I.

On admission to the isolation hospital (April 5) the patient was found to be in the above condition; the temperature was 102°, the pulse 108, and the respirations 28. She was given an intramuscular injection of 5 c.cm. of soluseptasine daily for four days and 1 gramme of sulphapyridine four-hourly, the total dosage during this period—i.e., until April 8—being 20 c.cm. of soluseptasine and 20 grammes of sulphapyridine (this total includes the tablets taken before admission to the isolation hospital). She was also given morphine, paraldehyde, and phenobarbitone for her restlessness, which at night tended to become troublesome. The temperature varied from sub-normal to 102° on the first day, and then gradually dropped until on April 9 it was below normal. The pulse and respiration rates remained at about 108 and 28 respectively. Her general physical and mental condition improved to some extent, but did not become normal.

On April 10 she developed retention of urine and had to be catheterized. The urine was acid in reaction, with albumin present: examination revealed a few red cells, pus cells, and granular casts; culture yielded one colony of *B. coli*. Tenderness over the bladder and kidneys was suspected, but was not elicited definitely because of the mental condition. During the next few days the temperature gradually rose, reaching 100.4° on April 13, and, paradoxically, the pulse and respiration rates fell to normal. Her restlessness, confusion, and nocturnal delirium continued and were found to be complicated by some bilateral deafness, present before the onset of the illness.

Ante-natal examination showed the uterus to be 1½ to 2 inches above the umbilicus; the small foetus was active, and the foetal heart was clearly heard, the rate being 140. The stage of development was put at 30-32 weeks. The blood pressure was 150/95. The pelvic measurements were normal, and vaginal examination revealed no abnormality.

PREMATURE DELIVERY AND PUERPERIUM

In the afternoon of the 13th the patient became more restless, and it was thought that labour was beginning. The nurse noted a slight show of mucus at the vulva. At 8 p.m. the os was found to be dilated to 1½ inches, with a vertex presentation in the right occipito-anterior position. At this stage the patient became very restless, and 1/150 grain of hyoscine was injected with good effect. The foetal heart rate was 160, and showed no significant change when checked half-hourly. Normal delivery occurred after six hours—i.e., at 2 a.m. on the 14th—followed, after a few minutes, by the expulsion of a normal complete placenta and membranes. Pitocin was then given, and good hardening of the uterus occurred; very little blood was lost. The infant was a female child with well-developed finger-nails. In the puerperium the patient received daily doses of ergot, and was given massive doses of potassium citrate for the urinary infection, with considerable improvement, though catheterization was still necessary. On the eighth day she passed a large clot of blood in the lochia, and after this she micturated normally; the lochia ceased on the tenth day. Following delivery her mental condition deteriorated; for two days she became more confused and tended to be violent, and appeared to be indifferent to her infant. Sedatives were continued, and in a few days her condition improved. On April 20 she had become quiet, and interested in ward happenings and in her infant; her powers of concentration and reasoning were still poor, and there seemed to be a complete amnesia for the period of her illness, confinement, and first part of the puerperium.

PROGRESS

In spite of the initial improvement from the use of potassium citrate, the urinary condition deteriorated after April 16, when the albuminuria increased, the deposit showing numerous pus cells and culture giving a profuse growth of *B. coli*. As already mentioned, she began to micturate normally after passing a large clot on the eighth day of the puerperium—i.e., April 21; the next two days there was some frequency and pain on micturition, and on the 24th she had a rigor, with a temperature of 102°. This exacerbation responded well to an ammonium mandelate mixture; and on the 30th the temperature became normal and the urine clear of albumin, though a few colonies of *B. coli* were grown from a catheter specimen.

On April 12—i.e., the day before labour began—a rash had developed on the upper part of the trunk. It was first morbilliform, then became erythematous and urticarial, and seemed to cause a fair amount of irritation. It spread to the neck and face, which became swollen, then to the arms and hands, and downwards to the trunk and lower limbs. The distribution was patchy. The rash began to clear up after five days (April 17), with irregular desquamation, but has left staining on the trunk and lower limbs as from the 24th.

The patient has one child, aged 7, and has had two miscarriages, the last being some four years previously. The expected date of this pregnancy was uncertain, as some periods occurred subsequent to conception; it was, however, calculated to be in the middle of June. This would make the birth some eight to ten weeks premature.

The infant was a female child of 4½ lb. It was put in a warmed cot, and subsequently cleansed with oil. Slight icterus developed, passing off in a few days. At first sterile water was given—one teaspoonful hourly for twelve hours—and then "C. & G." half-cream dried milk mixture—half a measure to 1 fl. oz. two-hourly, increased after two days to three-quarters of a measure. The weight dropped to 4 lb. on April 22 and then began to increase. The condition of the infant was satisfactory: there was no vomiting, the bowels acted twice a day, and the stools were normal. She was contented and quiet, slept well, and was developing a healthy cry. On discharge on May 10 both mother and infant were doing well. Subsequent progress was satisfactory.

My thanks are due to Dr. W. J. Cox for permission to report this case, and to Dr. D. G. W. Clyne for his assistance. The unremitting attention given to this difficult case by the nursing staff should be acknowledged; it contributed considerably to the recovery made by the mother as well as to the good progress of the infant.

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Reviews

INQUEST ON BIRMINGHAM HOUSING

When We Build Again. A Study based on Research into Conditions of Living and Working in Birmingham. A Bournville Village Trust Research Publication. With a foreword by Lord Balfour of Burleigh. (Pp. 138. 8s. 6d. net.) London: George Allen and Unwin, Ltd. 1941.

This is a useful addition to the growing literature of reconstruction. It presents the outcome of three years' research into Birmingham housing. A survey of housing is much more than a census of streets and estates; it must take into account location of industries, means of transport, and developmental possibilities of the surrounding country. This research publication probes further. Some seven thousand householders have been questioned as to the time it takes them, and what it costs, to travel to their work, how many of them go home for the midday meal, how their gardens are cared for and where their children play, how many are renting and how many buying their houses, and what reasons compel or persuade them to remain in their present dwellings or to seek a change. The results are recorded in some interesting tables and in diagrams in colour.

The brief story told in these pages brings home the fact that the vast suburban development which took place in the interval between the two wars was not as well planned as it might have been had a regional (and ultimately a national) planning authority been in existence. Of the more than a quarter million houses in Birmingham—the first city in England to put into execution a town-planning scheme—over 100,000 have been built since 1920. It would be stupid to pretend that they do not represent a large improvement on former conditions. One has only to look at the photographs of the back-to-back houses in Birmingham central wards—houses consisting usually of three rooms one above the other—to realize how depressing slum conditions can be, and although the rows and rows of "tunnel-back" houses of the middle ring are less grim, they are graceless and monotonous and some of them perilously on the edge of slumdom. The housing estates on the outer boundary and the in-town blocks of flats or maisonettes of terraced houses are more pleasing; nevertheless, the estates very largely are one-class dormitories, not too conveniently situated in relation to places of employment, and lacking a social centre and the essential integration of communal life, while the flats appear too often to be an excuse for crowding more people to the acre instead of a means of providing more open acres for those who must live in areas with a high density of population.

In the opinion of the compilers of this volume Birmingham is already big enough. The solid city area has stretched beyond its optimum size. They think that there should be a general limitation of building to the present city limits, with agricultural reservations immediately outside. These reservations would not only check unwieldy development but would assure sources of milk and other food near enough to the city to be consumed in a fresh and health-giving condition.

The book is illustrated with a large number of telling photographs. Two companion pictures are eloquent. One is a vista of the roofs of Bournville, built by the Cadburys in the late 'nineties, with about six houses to the acre, arranged in pairs and groups, gardens forming an important feature of the plan; and the other a similar vista of streets of "tunnel-back" houses, built at about the same period,