

One case was hopeless from the start ; in the other a cure was effected by a wide excision of the lesion.

"Wound phagedaena" is suggested as a suitable name for the condition.

We have to thank our colleagues mentioned in the text for their special examinations and reports ; Dr. D. C. Lamont, M.O.H. Burnley, for permission to publish Case 2 ; and Mr. H. Lawrie, B.Sc., for the clinical photograph.

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## ENURESIS IN ADOLESCENTS

BY

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### The Subjects and their Surroundings

The subjects of these observations were boys whose ages ranged from 14 to 20 years. They were members of a farm training colony, some 300 strong, to which they had been sent by the Public Assistance Committees of England and Wales. Most of them had been brought up in institutions, and many of them had been "problem cases." In general the boys were of poor type and intelligence, inclined to lack discipline and to show anti-social traits. Many of them had started life with the adverse bias of illegitimacy, separated parents, or an unkind step-parent. The boys at the colony received training to fit them for farm, gardening, or domestic work or boot-repairing. Positions were found for them in one of these spheres at the completion of their course. They played organized games daily, with swimming in the summer, and went to the pictures once a week, on Saturdays. A few of them had started model aeroplane and fretwork clubs. The colony was run rather along Public School lines, being divided up into several houses, with the usual system of internal government. Everything was done to kindle a feeling of responsibility and public spirit, and much of the government of the colony was in the hands of the boys themselves.

Twenty-one per cent. of them were bed-wetters: this high figure is explained by the fact that the colony is one of the few in England admitting such boys, who thus tend to gravitate there. Most were intractable cases who still wet their beds when admitted to hospital in different and possibly happier surroundings. Occasionally some went home, but the trouble nearly always persisted. It was the custom to segregate the enuretic boys in a separate dormitory with beds equipped with rubber sheets. In an effort to avoid a wet bed later in the night, they were waked two hours after going to bed and made to pass water. Thus it was probable that the conditions tended to encourage

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enuresis rather than otherwise, in view of the segregation at night and the constant reminder, in being called, that the worst might happen. Alongside this camp there happened to be a colony of forty Jewish refugee boys of similar ages. They were mostly the sons of Austrian artisans and small shopkeepers. These boys were of good intelligence and physique, and when competing in the sports against the boys in the colony had won all the cups and prizes. Enuresis among them was unknown.

### Description of Cases more fully Investigated

Twelve boys from the colony together with one from an external source were admitted to hospital for a more detailed investigation. In addition to careful histories and physical examinations, perianal swabs were taken for threadworms, the lumbar spines were radiographed for spina bifida, and an investigation was made to determine whether the boys passed an abnormal volume of urine by day or night. Intravenous pyelography was performed, and each boy was sent for interview by a psychologist. The method employed to determine whether they passed an abnormal volume of urine consisted, at first, in weighing the bed-clothes before and after sleep. This was found to be not very satisfactory, and eventually a comfortable bag for collecting urine was fitted on before they settled for the night. Ten of the boys had enuresis in hospital.

The average age of the subjects was 17, the youngest being 14 and the oldest 20. Ten of them had unsatisfactory family histories, such as the early death of the parents, a broken home, or a father who suffered from "shell shock." There was a family history of enuresis in only one case. All but one were dull, and even this boy was emotionally immature. This dullness was quite obvious on simple conversational contact, and required no special test for its demonstration. All the boys, except one whose development was retarded, were physically normal. Threadworms were found in three of them. There was no significant chemical or cytological abnormality in their urine, of which they passed a normal volume both by day and by night. Intravenous pyelograms showed normal urinary tracts in every case. Radiographs of the lumbar and sacral spines demonstrated some abnormality in nine out of the thirteen boys. This was frank spina bifida occulta in seven, but a congenital abnormality of the first piece of the sacrum was reported in one, and flattened vertebral bodies in another. The incidence of congenital abnormalities is greater than even the most generous estimates for healthy people.

Common factors in the histories and examinations that were noted, among others, were: (1) an unsatisfactory family history, often with some disruption of the home ; (2) poor intelligence ; (3) normal physique ; and (4) a congenital spinal abnormality.

### Spontaneous Course of the Disorder

A record of the number of wet beds caused by each of three boys was kept for a period of rather more than two years, during which they were untreated. This is shown in Fig. 1. It will be seen that the disease follows an irregular course, being slightly less troublesome in midsummer. In the case of boys C. and M. there was an exacerbation in the early part of 1940 corresponding to the intense cold at that time. Boy W., however, seemed to be unaffected by this. The course of the illness is not unlike that of epilepsy, a similarity which fits in with the low level of intelligence of most of the boys. The frequency of spina bifida occulta further suggests some abnormality in the central nervous system. The demonstration of spontaneous remissions naturally raises the question of any treatment used. If a

spontaneous remission coincides with the administration of a particular drug or treatment, improvement may be wrongly attributed to the latter.

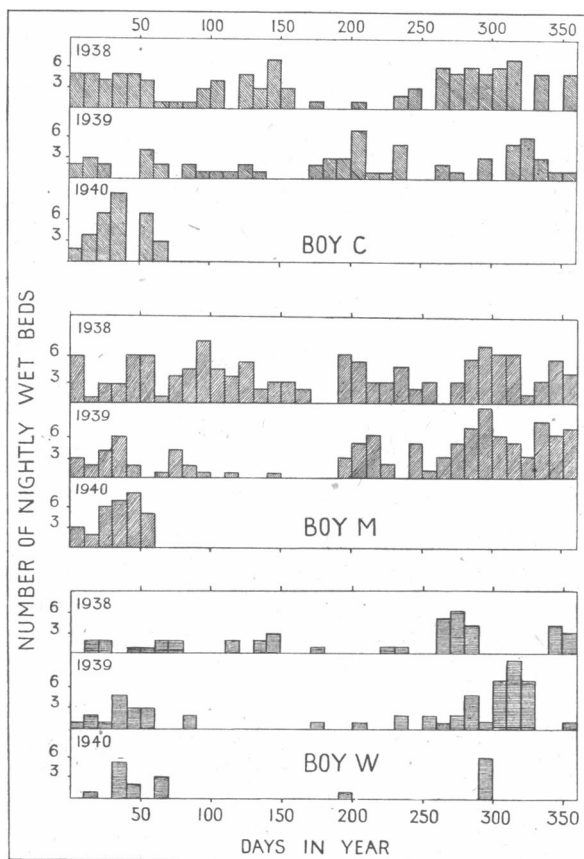


FIG. 1.—Spontaneous course of enuresis in three adolescent boys. The uprights represent the number of nights the boy wetted the bed during each ten-day period.

**Effect of Various Drugs**

Two groups of six boys sleeping on opposite sides of the same dormitory were investigated. The weekly number of wet beds was collected and expressed as a percentage of the total possible number, assuming each boy had wet his bed every night. The two groups were studied continuously for a year. At night before going to bed each group was given a drug alternately, the other having inert control tablets similar in size, shape, and colour. At the end of the week the conditions were reversed. Occasionally no drugs or control tablets were given either group of boys. One of the masters or prefects at the colony gave the drugs. Once when it was suspected that they were not being administered, methylene-blue tablets were given, and a random boy chosen who urinated in our presence. The colour of his urine showed that the suspicion had been groundless. The drugs were given in doses which are the maximum or above the maximum of those in common use (see Table).

Fig. 2 shows the number of wet beds throughout the experimental time, for both treated and control groups; the mean weekly temperature is included in the graph. Just

as with the three individual boys, it seems as if the disease runs an irregularly rhythmic course with no apparent relation to drug therapy, and is only slightly affected by the temperature of the weather at the time. The number of wet beds in both groups was nearly equal, the control group having 45% of the total possible, and the group receiving supposedly active drugs 46%. None of the drugs given had

Table showing Effect of Drugs upon a Group of Six Enuretic Boys

Drug	Dosage in Grammes	Better	Worse	Weeks Administered, Inclusive
		Weeks	Weeks	
Trasentin (Ciba) . . . . .	0.075-0.225	3	3	2nd to 7th
Ephed. sulph. . . . .	0.06-0.24	3	2	8th to 12th
Ext. bellad. sicc. . . . .	0.06-0.24	2	2	15th to 18th
Ext. bellad. sicc. 0.06 gm. and ephed. hydrochlor. 0.06 gm.	1-4 tablets	2	1	19th to 21st
Phedracin (Ciba) . . . . .	0.4-0.6	0	3	22nd to 24th
Methylatropin. nit. (eumydrin, Bayer)	0.003-0.005	2	1	26th to 28th
Physostig. salicyl. . . . .	0.0013-0.0026	1	1	29th and 30th
Theophyll. mono-ethanolamin. (theamin, Lilly)	0.2-0.4	3	1	31st and 32nd, and 34th and 35th
Mersalyl 0.08 gm. and theophyll. 0.04 gm.	2 tablets	1	1	36th and 37th
Methylthionin. chlor. . . . .	0.3	1	1	38th and 39th
Barbitone soluble . . . . .	0.6	1	1	40th and 41st
Sod. diphenylhydantoin (solanatoin, Glaxo)	0.2	2	1	42nd to 44th

a definite action on the enuresis. This was most strikingly shown in the case of belladonna, in spite of its reputation in this disease; for when the drug was given in the massive dose of 4 grains the treated group became worse whereas the control group improved. During that week one of the treated boys showed symptoms of atropinism and became manic. The table shows these results and indicates the weeks in which each drug was given. In addition to the drugs mentioned in the table, amital (Lilly), prominal (Bayer), pseudo-ephedrine (Burroughs Wellcome), and torantil (Bayer) were also tried without success.

Two diuretics were administered—theamin, a xanthine derivative, and mersalyl, an organic mercury compound combined with a xanthine derivative. The absurd result was obtained that improvement occurred in three out of four weeks when mersalyl was given, deterioration taking place during the other week.

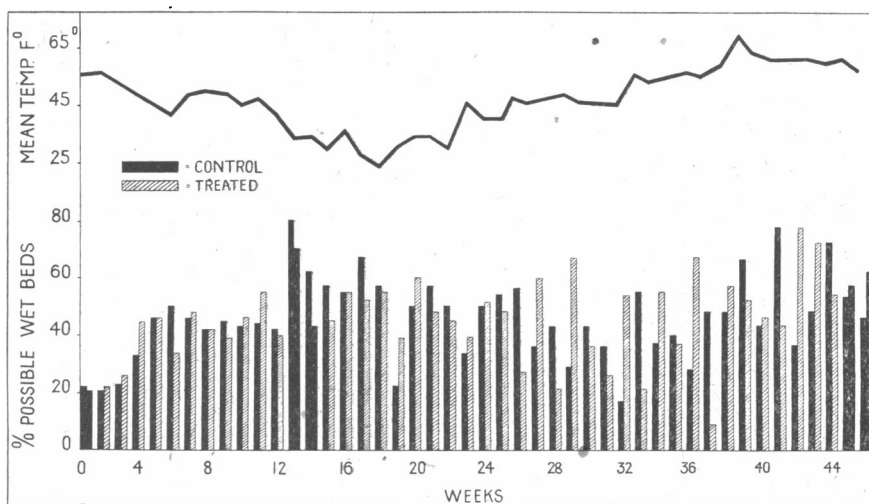


FIG. 2.—Frequency of enuresis in treated and untreated subjects. The boys given drugs wetted the bed just as often as the controls. There was no close correlation between frequency of enuresis and mean temperature.

**Summary**

Enuresis in a group of adolescents in a farm training colony was usually accompanied by unfortunate home conditions, poor intelligence, a normal physique, and a high incidence of occult spinal deformities.

The disease followed a rhythmic but irregular course; it was more frequent in cold weather, but the correlation was not close.

In a controlled therapeutic experiment on a group of twelve boys a series of drugs, including belladonna and ephedrine, was tried. None had any effect on the enuresis.

We are indebted to Lieut.-Col. R. C. Grant for generously assisting us with the records of these cases.

## A CASE OF COMBINED INTRA-UTERINE AND EXTRA-UTERINE PREGNANCY

BY

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The following case of combined intra-uterine and extra-uterine pregnancy is reported because of the rarity of the occurrence.

### Case History

The patient comes from a village some forty miles away where we have one of our district maternity centres. I visit this centre every fortnight to hold a general clinic and examine any abnormal obstetric cases, which the trained African midwife collects for me in her routine ante-natal examinations. In this way I had the good fortune to examine the patient three times before she finally came into hospital here, though on none of these occasions did I suspect the true diagnosis.

*Ante-natal Observations.*—She was an African woman aged about 30, who had had three normal pregnancies and labours, the last some eighteen months previously. I first saw her on September 5, 1940, and diagnosed a pregnancy of four months' duration, though she said she was still having short periods at that time. I was next asked to see her on February 20, 1941, and found on abdominal examination a uterus of about nine months' gestation with swellings somewhat resembling a foetal head on each side of it. I considered the possibility of twins, but the findings did not really support this diagnosis; so, remembering the clinical axiom that common conditions commonly occur, I made the provisional diagnosis of fibroids, though I was puzzled at not having recorded any suspicion of them at my previous examination. I advised her to come into hospital a little later.

*From Delivery to Laparotomy.*—She went into labour on March 5, and was delivered in the maternity centre by the midwife after a normal labour; the baby was a fully developed boy weighing 5½ lb. I saw her, however, on March 6, and found the para-uterine swellings still present; I still thought they might be fibroids, but regret that I made no more than a perfunctory examination, as all seemed well. The next day the patient began complaining of abdominal pain, which slowly increased but was not severe enough to prevent her being discharged from the maternity centre a week later. The pain continued to grow worse, and she came into the central hospital here on account of it on March 27. The baby was somewhat under-nourished, as no breast milk had come in. On examination the woman was obviously ill and in pain. There was a fair pulse and some pallor. On palpation of the abdomen and vaginal examination I could come to no other conclusion but that there was an intraperitoneal extra-uterine foetus present, and I was almost convinced that I heard a foetal heart. I left her to recuperate from the journey, and performed a laparotomy the next day.

*Findings at Operation.*—The peritoneal cavity was filled with straw-coloured clear fluid containing large fibrinous clots. Much of the peritoneum and the whole of the great omentum were covered in a thick jelly-like material. A foetus was lying free among the coils of intestine and there was a fair pulsation in the cord. I delivered the baby, and found the ruptured sac arising from the placenta, which was attached by what amounted to little more than a thick pedicle; this sprang from the right broad ligament just behind the fimbria in the position of the ovary, there being no direct connexion with the Fallopian tube. There were also two thick bands of adhesions running

from the great omentum to the sac and ending in two subsidiary placentae near the main one. The uterus appeared to be involuting normally. Removal of the sac and placentae was not difficult, and the patient is now making a good recovery. The baby was a boy weighing 6 lb., and was without evident abnormality save for clots of what seemed to be fibrin adherent to the skin in places. It breathed weakly for about half an hour, but all the usual care could not maintain life.

### Commentary

The frequency of extra-uterine pregnancy is not easy to ascertain, but Schumann (1921) calculated the frequency for one year in one town to be one in every 303 pregnancies. Mall (1915) further calculates that 1% of extra-uterine pregnancies go to full term, and notes that the foetus in these cases is especially liable to maldevelopment. Cases of extra-uterine associated with intra-uterine pregnancy—referred to by Parry (1876) as combined pregnancy—have been reported a number of times, 306 having been traced by Subodh Mitra (1940); but only ten of these (according to Novak, 1926) have resulted in the birth of both children alive.

Although no ovarian tissue was found by the pathologist in the wall of the amniotic sac, the position of the placental site in this case suggested strongly that the pregnancy originated in the ovary. Ovarian pregnancy is the least common type of extra-uterine gestation, only forty-one recorded cases having been traced by Lockyer (1917); but Williams (1923) considers that a higher proportion of ovarian pregnancies go to full term than do pregnancies of tubal origin. It is of interest to note, too, that no long period of sterility preceded this pregnancy; this perhaps suggests that the mechanism believed to be largely responsible for tubal gestation—namely, some form of obstruction in the tube—did not come into play.

I can offer no special explanation of the fact that the patient had short periods up to within six months of delivery of full-term children, but have an impression that slight menstruation may continue after conception more often than in England, although histories here are very unreliable.

It seems likely that the amniotic sac of the extra-uterine foetus ruptured when the abdominal pain began, two days after the delivery of the uterine pregnancy. It was probably due to some sudden abdominal strain by the patient, or possibly even to an abdominal examination. The action of the amniotic fluid within the peritoneal cavity—that of a mild irritant—is of interest.

The breasts secreted very little milk even after the delivery of the second baby, owing perhaps to the general debility of the patient, so that no deduction can be drawn as to the inhibitory action of the extra-uterine gestation on lactation.

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R. M. Greenthal (*Wisconsin med. J.*, 1941, **40**, 25), who reviews the literature and records his observations on 100 cases, comes to the conclusion that the disease called "roseola infantum" by Zahorsky in 1910 and "exanthema subitum" by Veeder and Hempelmann in 1921 is a clinical entity. It affects children during the first two years of life and seems to confer immunity. Its characteristic features are a febrile period of three days, and after the temperature has become normal a rash lasting about two days. The blood shows a relative lymphocytosis and often a lymphopenia. There are no complications or sequelae. The aetiology is unknown. The incubation period is about ten days.