evenly and accurately than the most skilful strapping could effect. This looks as though the cure is wrought similarly to healing under a scab.

One patient, an old gentleman of gouty diathesis, who will not diet or take medicine, finds the nightly application of the mucilage of symphytum the only remedy of the many he has tried which gives him any relief for pruritus ani. His sufferings at one time were so intense that he says he could not sleep for weeks together.

I judge the explanation of its efficacy in this case to be very simple. When the mucilage is taken into the mouth there is a sense of dryness, due to some astringent principle, probably tannin; at the same time, if the air be drawn in, there is a sensation of coldness and numbness much like that felt after peppermint, though in a lesser degree, but without the previous burning sensation, and hence it is slightly anaesthetic. In pruritus ani these two principles acting together, the one driving back the acid-laden blood, the other soothing the irritated nerve endings, will, I think, account for the relief which is felt in this troublesome complaint.

Acting on this principle, I have frequently used it internally as a last resource where more elegant preparations have failed—for example, in gastralgia, when I have believed this to be due to an irritated gastric mucosa, and to ease the pain of and to cure gastric ulcer. In these cases its efficacy has been much more wonderful than its effects in external applications in cases like the above; and here, too, its cell-proliferating capabilities, which Dr. Macalister's colleagues have discovered, will be a large factor in promoting the growth of new mucous tissue over the irritated and congested surface of gastric ulcer.

It is indeed refreshing and gratifying, in these days of serums and vaccines and highly complicated preparations, the administration of which, in some cases, is fraught with the gravest possible danger and soul-harrowing anxiety on the part of the administrator, to find a physician of Dr. Macalister's standing setting on foot the investigation of so simple and natural a remedy as common comfrey.

Kai ta phylla tou xylou eis therapian ton ethnwn.

TREATMENT OF PUERPERAL SEPTICAEMIA BY VACCINES.

By A. HAWKYARD, M.D.DURH.,
LEEDS.

THE history of the following four cases throws some light, I think, on the common cause of puerperal septicaemia. In regard to the first case, it seems to me, judging by the three subsequent cases, that I was right in ascribing the nurse's suppurating finger as the cause of the patient's illness.

I should think the colon bacillus is never found in the pus of a recent abscess; though I have been told it is found sometimes in old chronic abscesses. Streptococcus, colon bacillus, and staphylococcus swarm in faeces, especially colon bacillus, and I think we may take it that if colon bacillus is found inside the uterus, it has been conveyed there on the finger of the examining hand. Even with the greatest possible care it is impossible sometimes to avoid doing this; and conversely, in the absence of the colon bacillus, we must look round for some other cause. I think it would be impossible to infect a patient with *streptococcus only*; if faeces had been introduced into the uterine passages and caused septicaemia, colon bacillus would surely also be found.

These cases illustrate the very great importance of first of all identifying the infecting organism or organisms. It is obvious that one cannot expect recovery, or even improvement, in a case of septicaemia caused by the triple infection of streptococcus, colon bacillus, and staphylococcus if a vaccine prepared from streptococcus only be used. Judging from my experience, we may expect to find the colon bacillus helping to cause puerperal septic

conditions in nearly all these cases. It would be extremely useful, therefore, if there was on the market a vaccine prepared from streptococcus, colon bacillus, and staphylococcus, so that valuable time would not be lost in waiting for the preparation of an autogenous vaccine.

The best mode of obtaining a swab of the uterus is to introduce, through a speculum, the swab into the upper part of the uterus, previously having cleansed with sterile wool the vagina and os uteri.

CASE I.

On January 7th, 1911, I delivered a primipara, aged 21, instrumentally. On January 9th she had a rigor, and a temperature of 106°. I injected a stock vaccine of streptococcus, and had an autogenous vaccine prepared at the Yorkshire Pathological Laboratory, Leeds, from a sterile swab which had been introduced, with proper precautions, into the uterus. The immediate result of the administration of the vaccine was to bring down the temperature.

On January 11th, the temperature again rising, I administered $\frac{1}{2}$ c.cm. (2½ million) of the autogenous vaccine, the result being to bring down the temperature to nearly normal. On account of rising temperature vaccine was administered—on January 16th, 5 million, on January 19th, 10 million, after which the patient made an uninterrupted recovery, and was practically well on January 31st. I am sorry no temperature chart was kept, but I used vaccine when the temperature rose to about 104°. The report from the laboratory was to the effect that the infection was due to a nearly pure streptococcus infection, a very small number of colonies of staphylococcus being present.

This case is important because it resulted in an action for slander being entered against the patient's husband at the assize court by the nurse in attendance. I found her to be suffering from a suppurating finger (it had been bad more than a fortnight), and when I received the pathologist's report I had no hesitation, seeing she had handled the patient's parts, in expressing the opinion, when questioned by the husband, that the suppurating finger was the cause of the illness. Subsequent experience has justified this opinion.

CASE II.

Whilst the above case was under treatment I saw a case of puerperal septicaemia in consultation with another medical man. The patient had been ill for about a fortnight. A swab of the uterus was taken and the infecting organisms were found to be streptococcus, colon bacillus, and staphylococcus. A vaccine was prepared and the patient improved under its administration for a time, but she died about eight weeks after confinement, of pneumonia. Had the vaccine treatment been commenced earlier it is probable the result would have been different.

CASE III.

On April 29th, 1911, I was called in to stitch the perineum of a woman who had been delivered by a trained midwife. On April 30th the patient had a rigor and was obviously commencing with septicaemia. A stock vaccine of streptococcus was at once administered, and a swab of the inside of the uterus was taken. The infecting organisms were found by the pathologist to be streptococcus, colon bacillus, and staphylococcus. Under treatment the patient recovered. I need not enter into details, as the temperature chart is annexed, and sufficiently indicates the course of the illness. It is a twelve-hour chart, but the four-hourly chart which was taken during the whole of the illness indicates more clearly the beneficial effect on the

CHART (Case III).—A, Stock vaccine; B, autogenous vaccine, $\frac{1}{2}$ c.cm.; C, autogenous vaccine, $\frac{1}{2}$ c.cm.; D, autogenous vaccine, 1 c.cm.; E, temperature at noon, autogenous vaccine, 1 c.cm. Rigor occurred on the second and seventh days.

temperature of the vaccine injections. The initial dose of the autogenous vaccine was 2½ million on the fourth day of illness, followed by 5 million on the sixth day, 10 million on the seventh day, and again 10 million on the eleventh day, the temperature being 105°. There was no apparent need for further vaccine treatment after this.

CASE IV.

Early last month (November) I saw a woman recently delivered. For reasons not necessary to mention, I sent her into hospital. She developed puerperal septicaemia, a swab of the uterus disclosing a pure colon bacillus infection. She was treated by autogenous vaccine and recovered.