A NOTE ON THE TREATMENT OF PUERPERAL INSANITY.

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THE late hour of the evening, and the short space of time allotted to each speaker in consequence, at the discussion at the Obstetrical Society on January 7th, prevented me from saying what I had hoped to have said regarding the treatment of puerperal insanity proper in asylums, for, as a member of the Society observed, it is in asylums that by far the larger number of cases are treated.

When the premonitory symptoms are observed, that is, change of manner and feelings with excitability, extreme quietude of surroundings must be ensured, and careful skilled supervision of patient enforced, to guard against infanticide or suicide by impulse. The bowels must be attended to, regular action being obtained by enemata and mild aperients. If there be early insomnia, a sedative draught of potassium bromide $\mathfrak{ss}$ and chloral hydrate gr. xv must be given at night. The diet should be liberal and sustaining. For instrumental feeding a mixture of equal parts milk and strong beef-tea, one pint in all at first, with two or three eggs beaten up in it and a little brandy, if indicated, administered thrice daily with oesophageal tube and funnel. Later on we feed twice a day with one pint and a-half each time and two eggs at each meal; lime juice or concentrated extract of green vegetables must be added. If the temperature be high the relative amount of milk must be increased at the expense of the beef-tea, and diarrhoea or sickness indicate excess of food administered, which must be diminished accordingly. Most patients will be sick after the first feeding, and perhaps after the second, until the stomach becomes accustomed to the means adopted.

A thorough examination of the uterus and its surroundings must be made, and any altered lochial discharge dealt with. In all cases the urine must be tested for albumen. In the medicinal treatment we must avoid as much as possible any free use, or rather abuse, of sedatives and hypnotics. If there be acute maniacal excitement with insomnia, we give potassium bromide $\mathfrak{ss}$ and chloral hydrate gr. xv twice or thrice daily, carefully watching the effect, and never continuing it for any lengthened period. Subsequently sulphonal $\mathfrak{ss}$, or, better, trional gr. xx, may be given at night, or on alternate nights, with $\mathfrak{ss}$ to $\mathfrak{ij}$ of paraldehyde, when a mild ferruginous tonic may be given by day to treat the concurrent anaemia and albuminuria (if present). In all cases in the maniacal form opium and its preparations are to be avoided. The child of course is weaned at once, and any tendency to mammary congestion or abscess, which is rare, dealt with in the usual way.

If the mental symptoms when fully established are of the melancholic type, the preparations of opium and diffusible stimulants are indicated. We give liq. morph. acet. $\mathfrak{xxx}$ sp. etheris $\mathfrak{xv}$ in aq. camph. $\mathfrak{zj}$ thrice daily, and enemata to relieve constipation. Iron must be given also, and every effort made to re-establish—by hot baths, aloes, ergot, etc.—the menstrual function, which is suppressed. All patients with puerperal insanity lose flesh rapidly, therefore regular weighing records must be kept, and after the first few weeks ol. morrhuae given. A gain in weight, except when dementia has supervened, is a favourable sign. Stimulants, carefully regulated, are indicated in all cases, as the disease is of an asthenic type; at first brandy with the artificial feedings; later on port wine during convalescence. In severe cases there is an early tendency to bedsores; therefore, if the patient be confined to bed for any length of time, we paint the back and hips with equal parts of liq. plumbi subacet. and tinct. catechu once a day. For moral treatment, when the patient's physical health will permit, change of scenery is indicated. As soon as there is no marked febrile temperature, and if the strength be fairly maintained, she should, weather permitting, be got up, dressed, and taken out daily for from half an hour to two hours, but carefully guarded against all excitement. This course will often induce natural sleep. Faulty habits must be corrected. Fresh air and sunshine out of doors, gentle exercise, amusements, and all forms of diversion materially aid recovery, and indoor occupation of a light nature should be encouraged.

The relatives and friends should not see the patient until she has definitely improved, and even then the effect of the visits of the husband and child should be carefully watched.

In the melancholic form these visits are less harmful than in the maniacal. Recovery in all cases is gradual and protracted, and in the early stages the mental state of the patient varies much, but the final result is eminently satisfactory, for about 80 per cent. recover.

ON THE BILBERRY (VACCINIUM MYRTILLUS)

AS A REMEDY IN TYPHOID FEVER AND OTHER INFECTIOUS DISEASES OF THE INTESTINE.*

By MAX M. BERNSTEIN, M.B., M.R.C.S., L.R.C.P.

ALTHOUGH scarcely another subject in medicine is so fiercely beaten upon by the light of publicity and general interest as that of enteric fever, it is rather discouraging to admit that whatever there is of brilliant achievement in it does not belong to the medical man. The disease has of late years become pre-eminently the domain and almost the exhibition ground of trained nursing, and the more the latter excels the less resolute and significant apparently is the part taken by medicine.

This is far from satisfactory in the interests of public health, for as often as the highly-complicated machinery of trained nursing is unobtainable, or as soon as for some reason it breaks down, the mortality from typhoid in hospital and camp rises. Still less satisfactory has this state of things been from the standpoint of scientific therapeutics, as the latter has seemed wholly powerless to draw any practical advantage from the great pathogenetic demonstrations of bacteriology. The only direction in which an effort in the latter sense has been made is that of prophylaxis, but the outcome of preventive inoculation is as yet an unknown quantity.

As in tuberculosis, the specific bacillus, the primary cause, has been left to develop, thrive, and work havoc in the human body whilst the fight was being carried on solely against the secondary causes of the malady, the toxins. It has seemed to me, however, that the chances for the more direct method of combat, for the fight against the bacillus itself and during the acute stage of the illness, would not be as unfavourable as one has hitherto thought if a reliable drug could be provided to effectively act on the infectious material in the whole of the intestinal canal. My reasoning was as follows:

Although the typhoid bacilli multiply in the walls of the intestine, in the mesenteric glands, in the spleen, etc., and are in exceptional cases not found in the stools until the end of the second week,¹ it is an indisputable fact that the bowel is the place of entrance and one of the channels of exit of the bacilli. Is it not probable then that this place is also the seat of the continuation of the infection? At the present moment scarcely anybody will assert that the illness of four and more weeks' duration is the sum and outcome of the poisonous effects of one dose only of the virus; on the contrary nothing is clearer than that it is the expression of a continuous cycle of growth of the bacillus, which cycle goes on even after the end of the illness, that is, even after the body has become immune to the toxins. In this connexion the extraordinary case recorded by Dr. Gwynn and mentioned by Dr. A. C. Houston² at the annual meeting of the Association in Cheltenham of dissemination of typhoid bacilli by a man in his urine five years after an attack of typhoid is not easily forgotten. For all we know, may not similar discharges take place from the bowel after the disease has clinically ceased?

At any rate, their continuous evacuation from the bowel during the disease is a certain proof that they are present there in great numbers. What is therefore to prevent their reabsorption during the acute stage of the disease? Proofs are not wanting of this; as in ulcers in various stages of development and disseminated infarcts of various age. And I am inclined to reason that this constant reinfection is the source of prolongation of the acute stage of the disease right up to the moment of full immunization of the body, and if measures were taken to keep the intestine in the most unfavourable state for the bacilli and in the most-favourable condition for healing of the ulcers, the duration and the severity of attack might be diminished, complications lessened, and consequently many lethal issues avoided.

As it happens, a splendid drug has already been found for typhoid bacilluria in urotropin, and the excellent results obtained with it in chronic cases³ point to the greater urgency of, and also possibility of equally good results by, another specific disinfectant for the intestinal canal.

* Read before the Hunterian Society.

I believe I am justified in saying and able to prove that such a specific remedy, capable of meeting all the indications of typhoid in the intestine during the disease, will be found in the fruit of the bilberry shrub (*vaccinium myrtillus*, Cl. *Eriaceae*).

The small, almost black, and sweet berries of this well-known shrub (bilberry, blaeberry, or whortleberry) growing all over the Continent, Great Britain, and Ireland—preferably in heathy woods, bogs, moors, and mountains—have in this country never had any medicinal application,⁴ and have been only used in jams and tarts.⁵

In France (*airelle*, *myrtille*, *brembelle* or *brinbelle*, etc.), and especially in the northern provinces, the berries are very popular for eating, and are sometimes used as a light astringent.⁶

In Germany (*Heidelbeeren*, *Bickbeeren*) they are a favourite popular remedy for diarrhoeas, and are used either in the form of dry berries, tinctures, extracts, or fruit wines (*Obstwein*), or syrups.⁷ During the last ten years they have claimed greater attention on the part of the medical profession, and have been recommended by Winternitz for skin affections and burns,⁸ and by others for superficial chronic glossitis,⁹ and as injections and suppositories in colitic conditions,¹⁰ etc. In other countries the bilberries have likewise been known only as a popular remedy, and are mentioned in the older editions of the pharmacopoeias of Finland, Belgium, Sweden, and Spain,¹¹ but have nowhere at any time attained to the position of a recognized drug.

When I started prescribing bilberries fourteen years ago it was in their capacity as astringent only. In combination with the tincture of opium I gave the jam of bilberries in fermentative diarrhoeas with flatulence and cases of cholera nostras. Their promptness as an antifermentative was striking, and the first stools laden with the dark pigment and the debris of the berries, were free from putridity and flatulence, and often formed. In 1892, in London, I employed a concentrated decoction in a severe case of chronic ulceration of the bowels subsequent on acute dysentery. The patient, a young man, aged 20, was extremely emaciated, and had to spend most part of the day and night on the commode. The number of motions, as far as they could be counted by the nurse, amounted to thirty-six, and their character was mucous and putrid, and they were accompanied by great suffering. Although the decoction was used in conjunction with other measures (enemata, ointments, and sedatives), I think I was justified in ascribing the favourable result mainly to the berries, when in the course of five weeks the number was reduced to two or even to one in twenty-four hours, as the sedatives had been freely used already before the myrtillus treatment.

In 1897 for the first time I tried a weak infusion in a case of typhoid in a child, and it seemed to me that the disease took a milder course, and that convalescence started earlier than I had anticipated. The second case was also a child of 8 or 9 years; the main symptom for the first ten days had been severe headache, and the disease had remained not diagnosed. At the end of this time it came under my observation, when I put it on decoction of *V. myrtillus* and a proper diet, and although prognosis had been dubious on account of the preceding injudicious feeding, the patient's temperature went down, and the disease was over in a fortnight. Two more cases of typhoid in adults were treated with *V. myrtillus* with similar good results, but unfortunately I am not in possession of the records.

I was convinced for myself that the favourable action of the drug could not be solely due to its slightly astringent properties, but must be based on some other quality.

The analysis of the slightly acid, yet sweet and aromatic juice of the bilberry, as hitherto recorded, did not afford me much to go upon. Herman Hager, the well-known German pharmacist, the only authority that mentions the subject,¹² gives as the constituents "sugar, malic acid, limonic acid, a pigment containing tannin, pectins, etc.," and I do not think that there is another or a more recent investigation available, as the berries never gained attention otherwise than as an occasional article of food.

Convinced as I was of their antifermentative action, I decided to test whether they had any specific effect on the typhoid bacillus and other pathogenic bacteria of the intestine, and Dr. F. A. Andrewes, of the Pathological Laboratory of St. Bartholomew's Hospital, kindly consented to guide and assist me in the matter.

I prepared a decoction of the dried berries in the ordinary way, making the weight of the liquid equal to that of the

material employed, filled some tubes with it, and sterilized them. A pipetteful of cultures of *B. coli communis* and *B. typhosus* was then added each to a tube of sterilized bilberry juice and subcultures in broth, made after five minutes, one hour, twenty-four hours, forty-eight hours, and seventy-two hours. The subcultures were examined after twenty-four hours, and, where necessary, tested on gelatine. The result is shown in the following table:

Growth of Bacteria under the Action of Bilberry Juice (Acid).

	After 5 mins.	1 hour.	24 hours.	48 hours.	72 hours.
Typhoid bacillus ...	+	+	+	—	—
B. coli communis ...	+	+	—	—	—

Thus the typhoid bacillus was killed by the action of bilberry juice at some point of time exceeding twenty-four hours but not later than forty-eight hours after commencement, whilst the bacillus coli communis showed less resistance, failing to grow even after twenty-four hours.

Reassuring as this experiment was, it was necessary to eliminate the action of the acids contained in the bilberry (malic, limonic) before forming a definite opinion. I therefore repeated the test in 1901 in the same laboratory, with the kind assistance of Dr. J. H. Drysdale. This time the decoction, prepared as in the first case, was carefully neutralized with a solution of sodium carbonate and sterilized. At the same time the range of the experiment was widened, including, besides the *B. typhosus*, the *B. Gaertner* and three different kinds of *B. coli*. Among the latter, one type was derived from a case of cystitis (Ryder), a second from a case of endocarditis (Dulieu), and the third was from the old laboratory stock (lab. type). Subcultures on broth were made after six, twenty-four, and forty-eight hours, on agar after twenty-four and forty-eight hours. All subcultures were examined twenty-four hours after their preparation. Besides these, Dr. Drysdale also tested the effect of bilberry on cholera vibrio.

The results of this second experiment can be tabulated as follows:

Growth of Bacteria under the Action of Bilberry Juice (Neutralized).

	Typhoid Bacillus.	B. Gaertner.	Cholera Vibrio.	B. Coli Comm. (Ryder).	B. Coli Comm. (Dulieu).	B. Coli Comm. (lab. type).
Medium ...	Broth.	Broth.	Broth.	Broth.	Agar.	Broth. Agar
After 6 hrs.	+	+	+	+	—	+
After 24 hrs.	—	—	—	—	one colony	+
After 48 hrs.	—	—	—	—	more colonies	+

The results of this test are quite striking, and speak for themselves. The typhoid bacillus, Gaertner's bacillus, the cholera vibrio, and one kind of the pathogenic species of the *B. coli communis*, were killed by the neutralized decoction of bilberry within twenty-four hours, whilst another kind of pathogenic *B. coli* was inhibited in its growth for twenty-four hours, and only the laboratory type (probably non-pathogenic) retained its vitality unimpaired. It is quite reasonable to assume that if the standard infusion prepared by me for these tests gives these positive results in twenty-four hours, a stronger preparation will have a prompter action still, and there is no reason why its strength should be limited in the therapeutic use, as the berries are not poisonous.

Having by these tests established the bactericidal action of the myrtillus, and bearing in mind my experience with it in ulcerative processes in the bowels, and also the chemical analysis as quoted above, the special considerations that recommend it very strongly in the treatment of typhoid and other diseases of the intestine (infectious and ulcerative) can be conveniently preceded here by a few remarks on those qualities of the drug that apply to all cases.

The berries are first of all non-poisonous, a very important feature which enables the free administration of frequent and large doses if desirable, and allows a wide range in its concentration. Secondly, the infusion or the jam has a pleasant, fragrant, and refreshing taste, can be sweetened to the patient's liking, can be taken hot or cold, and easily mixed

with mineral waters, lemon water, tea, milk, custards, cream, barley water, and fine porridge. Thirdly, as my tests establish, neither the acid juice of the stomach nor the alkaline contents of the bowels will interfere with the action of the drug; and, fourthly, this action reaches down to the lowest portion of bowel, and therefore I am justified in looking on the drug as a suitable means for local treatment within the intestine.

Coming now to the special indications in

Enteric Fever,

V. myrtilus can claim to keep the intestine aseptic (as far as *B. typh.* is concerned) to prevent reabsorption and reinfection, and thus prevent and cut short the duration of the infection; secondly, its astringent and antibacillary effects combined cannot act otherwise on the ulcers already formed than in a soothing, cleansing, and healing manner; in other words, it supplies the drug for local action on the sores so desired to check their spread in width and chiefly in depth. But in this connexion another consideration will perhaps be found of great importance. The immediate causes of perforation of the ulcerated walls of the intestine are by no means very easy to determine, and occur independently of the strictest diet, etc. Whether due to muscular action or any other cause, the final moment must evidently be one of an intra-intestinal pressure too great for the weakened wall. Now I am inclined to think that in the cases of dietary mistakes so frequently leading to perforation, it is not the food *per se* but the flatulence generated by it that raises the pressure within to the point of bursting through the weak spot, and I believe that the anti-fermentative action of *myrtilus* will certainly be of great use in avoiding these sad complications.

Among other infectious diseases,

Dysentery

is that in which I expected very favourable results from *V. myrtilus*, being led to think so by my practical experience with it in the chronic variety of the disease.

It was therefore a matter of great regret to me that a laboratory test was, for obvious reasons, impossible; but nevertheless my tests with the various types of *B. coli* are very encouraging, if one considers the direction which the developments of the knowledge of acute dysentery have taken of late. The amoeba as a recognized primary cause of dysentery is fast losing its position in favour of bacterial organisms.

Roger, who has devoted to this subject his special attention,¹³ after subdividing the disease into amoeboid dysentery, a coli-bacillary dysentery, and forms of enteritis resembling dysentery, among whom one form seems to be caused by a special bacillus described by him, goes on to say: "The *B. coli*-dysentery seems to me to be very frequent. On investigating the stools of the patients the microscope reveals many varieties of bacteria. But inoculations on animals demonstrate the existence of but a single species which is pathogenic. This is a bacillus which has all the features of the ordinary *B. coli*. In favour of its pathogenic character speaks the virulence, which is very great, and varies in proportion to the gravity of symptoms observed in the patients."

But whilst Roger still admits the existence of amoeboid dysentery, though only as one of the types of that disease, others go already further, and Scheube¹⁴ says: "One has probably to look on the amoebae now not as the causal agents of dysentery, but as concomitants which enter into the mucous membrane only subsequently to its having been softened and ulcerated by the primary pathological process."

"Arnaud, Celli and Fiocca, Galli-Valerio, and others consider as the cause of dysentery the bacterium *coli communis*, which under the influence of circumstances yet unknown, or perhaps of other bacteria present at the same time in the intestine, change into a virulent variety. Celli considers that the toxin he prepared from that bacterium produces the dysenteric infection, whilst the deep lesions of the tissues are caused by the pyogenic bacteria which, being present in the bowel, settle in the affected mucous membrane, etc."

It is evident then that these views bear very favourably on the potentialities of *V. myrtilus* as a remedy in dysentery as my tests with *B. coli communis* seem to point to the fact that it inhibits or kills all pathogenic species of that bacillus.

It is therefore certainly very advisable to employ it in acute dysentery and its effects are likely to entirely supersede the other fruit, once strongly recommended, for example, the bael-fruit,¹⁵ because of its bactericidal action. In chronic

dysentery the excellent opinion I formed of it is borne out by Fisch¹⁶ who also recommends it for the chronic variety.

Other Diseases of the Intestine.

As far as these are concerned it should be given a serious and extensive trial in true cholera the vibrio of which is killed by it and, with due regard to its astringent properties, it should be employed in all diseases of which ulceration of the mucous membrane is the main symptom, in those with an excessive secretion, and in all cases of abnormal fermentation.

In conclusion may I be permitted to express my gratitude to Dr. F. W. Andrewes and Dr. J. H. Drysdale for the ready kindness with which they have assisted me in this investigation and likewise the hope that those in control of special fever hospitals in this country and medical men in the Colonies and India who have frequently to deal with typhoid, acute dysentery and cholera will not fail to avail themselves of this new remedial means in the direct fight against the infectious virus and give it a wider clinical application and test than it has been possible for me to do?

NOTES AND REFERENCES.

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- 2 A discussion on Enteric Fever in its Public Health Aspects, *BRITISH MEDICAL JOURNAL*, 1901, p. 389.
- 3 See Dr. P. Horton-Smith's photographs illustrating its action, *BRITISH MEDICAL JOURNAL*, 1900-1, p. 833.
- 4 Bentley and Trimen, *Medicinal Plants*, London, 1880, do not mention the shrub.
- 5 (a) *English Botany*, Syme, Lankester and Sowerby, 3rd ed., vol. vi, pp. 24 and 25; (b) Contribution towards a Cybele Hibernica, More, Colgan and Scull, Dublin, 1898, p. 219, plate 879; (c) *Cybele Britannica*, by H. C. Watson, 1870.
- 6 Dorvault, *L'Officine de Pharmacie Pratique*, 11ieme ed., Paris, 1886, p. 228.
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- 9 Preuss, *Centralbl. f. Chir.*, 1893, p. 204.
- 10 H. Strauss, *Therapeutische Monatshefte*, March, 1900, p. 143.
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FATAL CASE OF PEMPHIGUS ACUTUS MALIGNUS.

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THE following case of pemphigus acutus is worthy of note from the severity of the symptoms and the acuteness of its course.

A farm labourer, aged 21, came on September 17th, complaining of a "rash" on his arms which, he said, had appeared on the previous day. On examination the "rash" was found to consist of a large number of bullae, situated on the extensor surfaces of the forearms and backs of the hands, and, and almost uniformly of the size of half a small hazel nut. The surface of the arms was extremely red and hot, and somewhat painful on palpation. There were then no bullae on any other situation, and the patient said he felt quite well. The pulse and temperature were normal. A mixture containing liq. arsenicalis in 5-minim doses and liq. ferri perchlor. was ordered. At the end of four days the amount of arsenic was increased, and the symptoms seemed to be abating. Two days later, however, the patient was again seen, when the eruption of bullae was found to have extended over the internal surface of the upper arms, anterior surface of the neck, chin, anterior surface of thorax and abdomen, and both groins. On these situations the bullae were very numerous, and their size varied from that of a pea to that of a pigeon's egg. On the back were a few isolated bullae. The face, with the exception above mentioned, and the legs from the groins downwards were then absolutely free from bullae. (The photograph reproduced (p. 309) was taken on that day.)

Next day the patient was feeling very ill and was unable to sit up. The temperature was 101°, and the pulse 120 per minute. Most of the above-mentioned bullae had ruptured and the surface of the skin below was exposed, producing much discomfort. One or two bullae were now found on the backs of the knees, while here and there the liquid contained in the still unruptured bullae was opaque and purulent. Owing to the nature of his surroundings the patient was removed to the Suffolk General Hospital, where he was under the care of Dr. C. S. Kilner.

On September 25th and subsequent days the patient had severe haematemesis, with occasional attacks of epistaxis, and on the following day there developed an erythematous eruption all over the body with the exception of the backs of the thighs and legs. The temperature was now persistently falling, accompanied by hiccup, dry, brown tongue, and partial coma, which condition got progressively worse till the evening of September 28th, when he died.