	F. Magalhaes.	F. Bancrofti.	British Guiana Filaria.
Length of female ...	mm. 155	m.m. 95	mm. 70 to 8
Thickness of female ...	0.66	0.2	0.12
Length of male ...	8	44	45
Thickness of male ...	0.25	0.10	0.06

Although this is undoubtedly a new species of filaria I do not propose at present to give it a name, seeing that it may turn out to be the parental form of one of the already known and named species of nematode embryos described by Manson. Very probably it may be the parental form of filaria perstans. It seems to me to be a mistake to give the embryonic and parental forms of the same parasite separate designations, and thereby to multiply names unnecessarily, and add to the difficulties of a subject already sufficiently complicated.

The female parasite has a rounded, unarmed head which, in living specimens, is in active movement, altering its shape and rapidly elongating and retracting. As seen under a low power these movements recall the cephalic movements of the embryo in the blood, except that in the adult nothing corresponding to the beak of the embryo is protruded. Compared to F. Bancrofti the neck is longer, the taper of the cephalic end of the worm being more gradual. The mouth is very minute; no differentiation of the alimentary canal into oesophagus and intestine could be made out. In the female the intestine terminates in a small papilla 0.145 mm. from the tip of the tail which, for the last 0.3 or 0.4 mm., is curved in every specimen, the tip being prolonged by two triangular cuticular processes which give it a bifid or mitred appearance. There are two ovarian tubes which contain ova and embryos in various stages of development. The embryos examined were all blunt-tailed, and appeared to be destitute of sheaths, even whilst still in the ovarian tubules. In only one parasite could the arrangement of the vagina be clearly made out. In this instance the ovarian tubules were seen to open into a common vagina which, at first convoluted, became less so, and at the same time narrowed as it was traced towards the vulva, terminating in a straight portion which opened externally about 0.6 mm. from the head.

The head and neck of the male are similar to those of the female. As stated, the males were much fewer than the females; in consequence of this I have obtained only two perfect male caudal ends. Both of these are much coiled, and in one of them, examined during life, the terminal portion remained persistently so. From this specimen there protruded a long single spicule, and on each side of the point of its emergence two small papillæ (a pair?) were indistinctly remarked. The coiled-up arrangement of the tail interfered with exact measurements, as well as with the determination of certain important points of structure, especially as to the presence or absence of a second spicule. The long spicule, plainly visible, protruded at a point about 0.09 mm. from the tip of the tail. The protruded portion was nearly 0.16 mm. in length. The portion of the spicule within the body of the worm could be readily traced up the body for about 0.6 mm. It terminated in a trumpet-shaped expansion with which a seminal tubule seemed to be continuous. The basal portion of the spicule is not so distinctly marked off from the posterior or filiform portion as in F. Bancrofti, and is devoid of the markings apparent in that worm. The tip of the tail is sharply incurved, a triangular cuticular prolongation being also apparent. Whether this cuticular appendage is, as in the female, double or not could not be ascertained. During life the spicule was at times partially retracted.

The other male tail was still more closely coiled up, and consequently the details could not be made out; the spicule was not protruded.

No other species of filaria was found at either of the *post-mortem* examinations; but in the posterior mediastinum of the first case a worm, probably an immature, unsegmented bothriocephalus, nearly a foot in length, was found. In the

intestine of both patients lumbrici, ankylostomes and trichocephali were present. In the second case embryo anguillulæ had been discovered in the fæces during life.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, December 25th, 1897.

THE DISINFECTION OF THE EXCRETA.*

BY
CHAS. A. HILL, B.A., and JOHN HILL ABRAM,
M.B., B.C. Cantab., M.D. Lond., M.R.C.P., Assistant
Physician Royal Infirmary;
Senior Demonstrator Path. Univ.
Coll.

[From the Bacteriological Laboratories, University College, Liverpool.]

THE methods used for ascertaining the value of any disinfectant are mainly two—namely, the addition of definite quantities of the substance to an active broth culture, with subsequent inoculation upon various media after the lapse of varying intervals, and the action of solutions of known strength upon test organisms inoculated upon threads.

These methods are valuable in that they determine the absolute working power of the disinfectant in definite conditions, but we have felt that direct experiment is necessary before conclusions derived from them can be adopted. This is more especially to be borne in mind in connection with the subject of our communication.

We have limited our inquiry to the disinfection of the fæces, as naturally they are the most resistant. In our earlier experiments the disinfectant solution was added in excess to the solid faecal mass, but we speedily found that in not a single instance did we get any sterilisation of the central portions. Therefore we would insist upon the necessity for thoroughly mixing up the faecal matter with the disinfectant selected.

We have chosen half an hour as the time during which the mixture must be allowed to stand, as being a convenient one in practice, though we admit that it is a severe test, and no doubt explains some of our results. After exposure for half an hour plate cultivations were made in the usual manner with gelatine and agar-agar.

The accompanying tables give our results at a glance. The second table gives the minimum strength of those disinfectants which seem to act most satisfactorily. The price list is only approximately correct:—

TABLE I.

Disinfectant.	Strength.	Action on Fæces.	
		When Mixed.	When Unmixed.
Perchloride of mercury	1 in 1,000	Spore-bearing forms	Copious growth.
Formol	1 in 20	Sterile	Copious.
Carbolic acid	1 in 20	Sterile	Copious.
Iodic hydrarg.	1 in 4,000	Spore-bearing forms	Copious.
Chloros	Undiluted	Limited	Limited.
Chinosol	1 in 600	Sterile	Copious.
Izal	1 in 200	Spore-bearing forms	—
Creolin	1 in 10	Sterile	—
Carbolic acid (crude)	Undiluted	Sterile	—
Zinc chloride	1 in 10	Copious growth	—
Copper sulphate	1 in 20	Copious	—
Boiling water	—	Copious	—
Sodium chloride	1 in 10	Copious	—
Chloride of lime, 15% Cl.	1 in 10	Copious	—
" " 35% Cl.	1 in 10	Considerable	—

TABLE II.—Minimum Strength of Six Solutions with Approximate Cost per Gallon.

Carbolic acid	1 in 20	1s.
Crude carbolic	1 in 40	6d.
Formol	1 in 40	1s. 6d.
Chinosol	1 in 600	1s.
Creolin	1 in 40	1s. 6d.
Mercuric chloride	1 in 500	9d.

The above six solutions were tested with a typhoid stool, and all gave complete sterilisation.

The literature on the subject is small, at any rate from our special standpoint. Uffelmann¹ states that the mineral acids are the most active of all disinfectants, then corrosive sub-

* Read at a meeting of the Lancashire and Cheshire Branch.

limate, carbolic acid, etc. He points out the importance of the duration of the influence of the disinfectant upon the motions. He recommends sulphuric or hydrochloric acid diluted with double the quantity of water, mixed in equal bulk with the faeces, and allowed to stand in the case of the former acid two hours, of the latter twelve hours. Foote² comes to the following conclusions: that the best disinfectants to use are corrosive sublimate with hydrochloric acid, corrosive sublimate with potassium permanganate and the chloride of lime. He further states that solutions of chloride of lime should be kept tightly corked, and should not be used after they are a week old. Gilman Thompson³ recommends 1 in 500 perchloride, 1 in 10 crude carbolic and chlorinated lime. He states that the mass must be thoroughly mixed and allowed to stand two hours. These workers recommend mineral acids, corrosive sublimate, crude carbolic, and chlorinated lime. It will be seen from the table that we have found corrosive sublimate and crude carbolic good disinfectants. The mineral acids we have not tested, as there are many and obvious objections to their use. Chlorinated lime we find with our time limit of half an hour to be useless. It may be said the preparations were old, but we submit that such an objection necessarily puts the substance out of court. Any of the six disinfectants on our select list may be regarded as absolutely certain in their results when thoroughly mixed with the stool and allowed to stand for half an hour. There are, however, objections to the use of some of them.

Corrosive sublimate is a scheduled poison, acts upon the metal work of the drainage system, and, moreover, gives a red coloration with stercobilin. This latter point is of importance, inasmuch as it may mask the presence of blood in a typhoid stool; again, albumen is coagulated by mercuric chloride, and thereby protects organisms enclosed in the centre of the coagulum. Crude carbolic acid is cheap and efficient, but does not mix over well with the faeces; it stains linen, and is poisonous. Formol and creolin are good, but are rather costly. The remaining substance, chinolol, is, in our opinion, the best. It is reliable, an excellent deodorant, and mixes well with the faeces. It is dearer than crude carbolic, but its cost is more than counterbalanced by its portability. It is put on the market in tablet form. The tablets are readily soluble, and may be obtained in such strength that one of them in a pint of water makes a solution of effective strength.

We may sum up our paper with the following conclusions:—

1. It is absolutely necessary to mix the faeces thoroughly with the disinfectant.
2. The mixture should stand at least half an hour.
3. Carbolic acid, crude carbolic acid, formol, creolin, chinolol, and corrosive sublimate in the strengths given in the short list are all effective, but chinolol seems the most convenient.

REFERENCES.

¹ Uffelmann: Die Desinfection infectiöser Darmentleerungen, *Berl. klin. Woch.*, 1889, No. 25. ² Foote: The Sterilisation of Faeces, *Intern. Jour. Med. Sciences*, Oct., 1889. ³ Gilman Thompson; *Albany Med. Annals*, March and April, 1897.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CASE OF PLUMBI EPILEPSY: PROLONGED STATUS EPILEPTICUS: RECOVERY.

I RECEIVED a police call on the evening of February 10th to see a lad, aged 14, who had been brought to the station in a fit. I found him sitting supported in a chair in a state of unconsciousness. The history given by the father, who was present, was that about half an hour previously the lad, while returning home from work, complained of feeling giddy, suddenly screamed out and fell, and was brought to the station by his father with the help of a constable. I found the muscles rigid, the teeth firmly clenched, the eyelids closed, the left more firmly than the right; the eyeballs were turned up, the pupils equal and of medium size. The pulse was

regular and of fair tension. There was pallor of the cheeks and lips, and along the edge of the gums in both jaws a well-marked blue line. The lad's clothing smelt strongly of paint. He had been assisting his father, a painter, for the past six months; he had been very energetic at the work, and had once or twice suffered from colic, for which his mother had given him salts. He had never suffered from "tremblings" or paralysis. I directed the patient to be laid down, and noticing him turn on his side and curl himself up, I concluded that the fit was passing off, and ordered him to be taken home in a cab. Later on in the evening I saw him at his home. He had passed urine and faeces under him in the interval; he was still unconscious and rigid, but seemed inclined to sleep, curling himself up in the bed. Temperature 99.4°; pulse 88.

Next morning the patient was quiet, but still comatose and rigid. He had passed a restless night, screaming, grinding his teeth, and throwing himself about, so that he was with difficulty kept in the bed. The temperature was 100°, the pulse 92. I prescribed potassium bromide gr. xv in water every four hours, but administration by the mouth was extremely difficult, owing to the rigidity. In the afternoon, as the coma and rigidity continued, and the temperature was going up, I called Dr. Price in consultation. We were agreed as to the serious nature of the case, and gave a guarded prognosis to the parents. Potassium bromide 3ss with syrup of chloral 3ij in water 3j was injected *per rectum*. Chloroform was administered until the muscular spasm was relieved. The patient was ordered to be fed by nutrient suppositories, and the services of the district nurse were secured. At 10 P.M. I repeated the bromide and chloral injection, and again administered chloroform until the muscles were completely relaxed. I placed calomel gr. ij on the back of the tongue. A specimen of the urine drawn off by the catheter was found to be free from albumen. The temperature was 101.4°, the pulse 100.

Next morning (February 12th) the patient was still comatose, but the muscles were less rigid. He had again passed a restless night. The nurse succeeded in giving 2 ounces of milk and a dose of the bromide mixture by the mouth. The temperature was 101°, and the pulse 112.

About 8 A.M. on February 13th he opened his eyes for the first time. Thus he had been in the status epilepticus close upon sixty hours. All day long he lay quiet and dozed, taking no notice of anything, but took his nourishment and medicine when offered to him. In the evening the temperature had fallen to 99.6°. He spoke for the first time on the morning of February 14th. Convalescence was now established, and he made an uninterrupted recovery.

He went out for the first time on February 21st, having been on a course of potassium iodide four days previously. An examination of the fundus oculi showed no optic neuritis, and there was no impairment of vision.

The above symptoms were undoubtedly due to lead poisoning. There was no family history of epilepsy. The mother said that the boy had been a great help to his father in the painting, and had done as much work as a man, keeping long hours, and had been careless in the matter of keeping his person and clothes free from the paint. He will not return to the painting business.

The case is of some interest on account of the complete recovery. It is well recognised that cases of acute saturnine encephalopathy are of extremely grave prognosis.

Bromley.

WALTER J. ROWLAND, M.B.

MAGNESIUM SULPHATE IN TROPICAL DYSENTERY. With reference to the article on this subject by Dr. Wyatt-Smith in the *BRITISH MEDICAL JOURNAL* of January 29th, I should like to point out my experience in the treatment of dysentery with magnesium sulphate for the last six years. Since 1891 I came to the same conclusion as Dr. Wyatt-Smith, that the treatment of tropical dysentery (or acute dysentery of any kind) with ipecacuanha is not the *radix dysenterica* that it is said to be, so I tried at first Glauber's salt in small doses; this I shortly rejected as the results were not encouraging, and at the end of 1891 I began treatment with magnesium sulphate in small doses, since which time I have had excellent results. Patients may come in passing fifteen stools a day containing blood and slime, but with the follow-