

with hyperinfection with it. Diagnosis is made on seeing the living larvae in the stools.

"Telmid" (dithiazanine iodide; 25- or 100-mg. tablets) 100 mg. three times daily for one day, followed by 200 mg. similarly for four or more days, may eradicate the infection. The drug stains the stools green or blue; it may cause nausea, vomiting, abdominal cramps, and diarrhoea. Its use is contraindicated in cases of renal disease.

Trichuris trichiura

Whipworm infestation of the large bowel is common throughout the tropics; it is generally considered to be of negligible pathological significance. The characteristic eggs are passed in the stools.

Telmid, as advocated for the eradication of a *Strongyloides stercoralis* infection, may result in its disappearance.

The Filariases

Several filarial worms of man are common in the tropics, and visitors there can acquire them through the appropriate insect bites.

Loa loa

This is known as the "eye worm," and may cause "Calabar" or "fugitive" swellings as the individual adults wander under the conjunctiva or through subcutaneous tissues. It is not infrequently encountered in repatriates from West Africa. There usually is a pronounced, and sometimes dramatic, associated eosinophilia; the microfilariae can be seen in the blood diurnally. An adult *Loa*, if seen, can be extracted from the skin or conjunctiva.

"Banocide" (diethylcarbamazine citrate; 50-mg. tablets) may be given in a dosage for adults of 50 mg. three times daily, increasing over a few days to 200 mg. three times daily, which is continued over a period of three weeks. This usually eradicates the infection by killing the adult worms. There may be an immediate allergic response to banocide treatment in the form of urticaria, a reaction around individual worms, and systemic upset with headache and fever; hence the smaller initial dosage, which is increased as the reaction subsides.

Onchocerca volvulus

This, the so-called "blinding filaria," is also not uncommon in repatriates from certain parts of West Africa. The adults are found in collections in firm fibrous nodules in the skin. The microfilariae radiate from there into the skin—from which they can be recovered for diagnosis. These larvae may sometimes get into the eye, so causing damage to vision and even blindness on occasions. This damage is unusual in European visitors to West Africa.

Banocide will kill the microfilariae of this worm but does not destroy the adults. When onchocercal nodules are detected they should be excised. If there is damage to the eyes, cautious treatment with banocide will temporarily control the progress of this.

"Antrypol" (suramin; 1 g. in a vial) will kill the adult worms. It is given initially in a dose of 0.2 g. in 10% aqueous solution intravenously, and then 1.0 g. similarly at five-day intervals for six injections. Antrypol must be given cautiously as it exerts a toxic action particularly on the kidneys. The urine must be examined frequently for albumin; if this becomes considerable, and persists in substantial amount, the drug must be temporarily, and possibly permanently, discontinued.

Wuchereria bancrofti

This and some other closely related filarial parasites, as a result of long-continued repeated reinfections over years, may

occasion the classical filarial elephantiasis more especially encountered in the East. The adult parasites inhabit lymphatic vessels, and the microfilariae, classically, appear in the blood nocturnally. It is the adults which are particularly responsible for the gross pathology. Light infections are the rule in repatriates to this country, and these are rarely associated with any significant pathology.

Banocide (diethylcarbamazine citrate: 50-mg. tablets) in doses increased to 200 mg. three times daily, continued over a period of three weeks, is effective in killing the adult worms and their microfilariae.

Trematoda

Schistosoma spp.

Schistosoma haematobium, the most widespread of these in Africa, causes vesical schistosomiasis (bilharziasis); *S. mansoni* causes intestinal schistosomiasis; while *S. japonicum*, limited to the Far East, from which the other two are absent, causes visceral schistosomiasis. All live in small blood-vessels and tend to cause progressively more serious disease; the individual flukes can survive for 20–30 years; it is the eggs of these worms which lodge in tissue that cause the cumulative pathology of the schistosomiasis.

Children, in view of their tendency to play in water, are perhaps particularly prone to acquire one or more of these infections; the possibility of their having done so should be envisaged especially on return from East Africa and the Rhodesias, where the first two parasites are common. The characteristic eggs are found in the urine, or in the stools, or on rectal biopsy.

Tartar emetic (sodium or potassium antimony tartrate) is still the most effective drug for the eradication of any of the schistosomal infections. Unfortunately it is very irritant to tissue, and it is toxic. Fatalities, usually unexpected, may attend its use, which is contraindicated in cases of heart, liver, or kidney disease. For adults a first injection of 0.5 grain (32 mg.) of sodium antimony tartrate in solution in 5% glucose is given intravenously, with due care to avoid leakage; 1.0 grain (65 mg.) is given, if there is no severe reaction, 48 hours later, and this is followed by 2 grains (0.13 g.) daily to a total of 20–30 grains (1.32–2.0 g.). Vomiting, diarrhoea, jaundice, or syncopal attacks demand stoppage of the treatment. A transient spasmodic cough, dyspnoea, and tightness of the chest are common accompaniments of each injection, and may be lessened by its slow introduction.

Trivalent salts of antimony, unfortunately, cannot be replaced by the less toxic pentavalent forms of antimony for these infections. Other trivalent antimonials used include lithium antimony-thiomalate; "stibophen" (6.3% solution of sodium-antimony-bis-pyrocatechol-3:5-sodium disulphonate), which may be given intramuscularly; "trioctam" (sodium antimonygluconate); and, more recently, "astiban" (antimony sodium meso-2, 3-dimercaptosuccinate). There are also some non-antimonial drugs with a schistosomicidal action. "Nilodin" (lucanthon), which is given orally, is one of these; it causes troublesome side-effects, which may be severe.

Schistosoma haematobium infection is the most easily eradicated; *S. mansoni* is less so; and *S. japonicum* the least. It follows that the treatment of schistosomiasis is not easy, and it may be a hazardous undertaking; so it is best delegated to those who claim special knowledge of the subject.

Correction.—In our "To-day's Drugs" article (28 March, p. 825) on the treatment of dysentery there was an error in the dosage of tetracycline in the section dealing with antibiotics, due to the incorrect insertion of the words "per kg." The dosage of tetracycline recommended for children should have read "for children under 6 months 25 to 50 mg. daily; up to 1 year 100 mg. daily; from 2 to 5 years 150 to 200 mg. daily; all for five days."

The drug "negram" is nalidixic acid, not naldixic acid as printed.