

rubbing. The only trouble is that this method occasionally brings about local pain and swelling.

3. Iodine is a reputable drug for viperine toxæmia when thrombosis is developing in the system. Injection of this drug into the vein relieves pain and localised swelling and brings about speedy recovery. Its intravenous injection is free from trouble and danger.

4. All the remedies are hopeless after complete fixation of the venom in the brain and nerve cells.

REFERENCES.

1. *I. M. G.*, Nov., 1913, Treatment of snake poisoning, by Major F. Wall, I.M.S.

2. *Indian Journal of Medical Research*, July, 1914, Studies on the treatment of snake-bite, by Captain H. W. Acton, I.M.S., and Captain R. Knowles, I.M.S.

Note.—The conclusions of Dr. Hazra differ in some important respects from those of Acton and Knowles; the latter being based on a large number of accurately controlled animal experiments are much less liable to error. A note on the subject will be made in the next number of the *Gazette*.—EDITOR.

SEPTIC GASTRITIS IN KASHMIR.

By M. J. ROCHE, M.C., M.B., B.Ch.,
C. M. S., Quetta.

PYORRHOEA alveolaris is very prevalent in Kashmir, and is the chief cause of pain in the stomach. Another common cause is worms, *i.e.*, the ordinary round worm and tape worm. These, of course, usually affect children and must be carefully excluded before deciding on any line of treatment for abdominal pain in such patients. The former cause is responsible for at least 80 per cent. of the adult patients complaining of pain in the upper part of the abdomen, and there is no doubt that if *pyorrhœa alveolaris* could be removed from Kashmir the amount of suffering and indisposition for work would be enormously lessened.

I therefore venture to point out a simple line of treatment in the hope that the Kashmir durbar and hospitals may be stimulated to provide throughout the country easy facilities for its application.

The treatment of *pyorrhœa alveolaris* consists in painting the gums with tincture of iodine on three or four successive mornings after first having got an assistant to remove by brush or scraping as much filth as possible from the mouth, *i.e.*, both sides, back and front of the teeth. It is most essential to always attend to the *back* of the teeth properly, for this is the part mostly neglected.

A simple tooth paste should be used also on these and following days, particularly *at night* after the evening meal before retiring to rest; instructions given to avoid meat and irritant food like chillies, and take only such food as milk, eggs and perhaps a little rice, when it will be found, at even the end of a week without any real stomach treatment, that the patient is already very much improved, often also very much to the patient's surprise and complete satisfaction. He has often

been at first disappointed that he has not been given some powder or medicine to take for his stomach by the mouth.

By this treatment the necessity for performing a gastro-enterostomy is often avoided. Even when it has to be performed, most particular care should always be taken to have the mouth thoroughly cleaned for at least a week before the operation, otherwise the recurrence, within a few months, of the ulcer or septic gastritis is almost inevitable.

Below is given the formula of a tooth-paste, similar to the one used in the Kashmir Mission Hospital. It is cheap and most effective:—

R	
Soap.....	3i
Cretæ prep.....	3vi
Alcohol.....	3v
Glycerine.....	3iii
Acid benzoic.....	gr. 45
Ol. eucalyptus.....	3 p.
Ol. menth. pip.....	m. vii
Saccharine	}a.a. gr. 7
Thymol	

THYMOL IN UNCINARIASIS.

By P. GUPTA, M.B.,

Deputy Superintendent, Patna Lunatic Asylum,

and

J. C. GUHA,

Sub-Assistant Surgeon, Patna Lunatic Asylum.

THYMOL is obtained as a crystalline substance from the volatile oils of *Thymus vulgaris* (*N. O. Labiate*), *Monarda unctata* (*N. O. Labiate*), and *Carum copticum* (*N. O. Umbelliferae*). This latter plant is largely cultivated in Central India and the United Provinces and thymol, locally known as *ajawan ke fool*, is prepared from its oil, the ptychotis oil or *ajawan ke tel*.

Thymol is soluble 1 in 1500 of cold water, 1 in 150 of glycerine, 1 in 2 of olive oil, freely in alcohol, ether, and chloroform. When rubbed with menthol, camphor, phenol or chloral hydrate it forms an oily liquid.

This paper deals with the result of 146 cases of hookworm infection treated with thymol at the Patna Lunatic Asylum in 1919 and 1920.

Bozzollo first successfully used thymol in a case of ankylostomiasis in 1880. Since then its efficiency has been confirmed by different authorities all over the world, such as, Parona, Sandwith, Stiles, Ashford, Schuffner, Clayton Lane, and others.

Thymol should be administered in cachets, emulsion or in sugar. Pure thymol is likely to cause irritation of the throat.

Bozzollo gave as much as 12 grammes (3 drams) daily in doses of 2 grammes (30 grains) every two hours. The dose recommended by the majority varies between 1 to 2 drams in one day either in one single dose or in two or three divided doses. In 1916, Clayton Lane in his

Darjeeling investigations used 60-grain doses, in three portions, at intervals of an hour.

We have used in one day 60 grains in three equal divisions at intervals of 30 minutes. The advantage of the divided dosage is that if any symptoms of poisoning be observed during the course of treatment, the further administration of the drug can be stopped at once.

Thymol is said to be a very poisonous drug, and it is advised that great precautions should be taken during its administration. The toxic symptoms are, at first, those of irritation of the cerebral centres—the patient is inclined to talk, the face flushes, the pulse quickens; soon there is dizziness, drowsiness, sleepiness, followed by syncope which may pass into coma and death. Toxic symptoms are specially liable to appear in patients with great debility, anæmia, œdema, advanced age, advanced cardiac or other organic disease, visceral diseases, chronic diarrhoea or dysentery and is particularly likely to happen if the drug is administered in solution, or a solvent of the drug is given with or immediately after it. Thornhill related an instance in which a fatal result was brought about by the inadvertent use of an *arrack* immediately after a dose of thymol. Stiles mentioned that in the U. S. A. there had been 12 deaths due chiefly to following thymol with oil or to carelessness in the precautions. On the other hand Bozzollo, since the inauguration of thymol, had always followed powdered thymol by a weak alcoholic drink so as to have a weak solution in the stomach. He never had a case of poisoning. Warned by a fatal case, Sandwith gave alcohol (brandy) to every case, as a stimulant, to ward off the depressant action of thymol. Ashford, King, and others under the auspices of the Porto Rican Commission issued more than a million doses of thymol in Porto Rico. The people took the drug to their home and must have taken drinks after it. Yet there was no fatal case.

Thymol is usually recommended to be preceded and followed by a purgative—the pre-purge with the idea of emptying the bowels so that the drug may reach the worm easily; the after-purge to hasten the excretion of the drug, thereby preventing its absorption and consequent toxic effects.

It has been shown above, in the patients of Bozzollo and others, the use, after thymol, of alcohol, which is a good solvent and so greatly increases the absorption of thymol, did not act injuriously at all. Evidently, therefore, the fear of toxic effect being produced by the absorption of thymol in medicinal doses is more theoretical than real. At the same time, we observed that patients very much disliked purgatives which weakened them further and was, thus, specially dangerous in those who were very weak and anæmic. We, therefore, stopped the use of a purgative after thymol. Later on we found that the bowels were never completely emptied with the pre-purge and thought that the purgative was used thus, without any practical effect. We then

stopped completely the administration of a purgative either before or after giving thymol. The anthelmintic value of the drug remained as good as before and there was not a single case of poisoning. 62.46 per cent. of the patients were cured. The rate of cure would have been still higher had it been possible to prevent re-infection even during the course of treatment, as many of those not cured, were lunatics and demented.

DIFFICULTIES IN CATARACT OPERATIONS.

By HARI SHANKER, I.M.S., RAI BAHADUR,

Eye Specialist, formerly of the Civil Hospital, Delhi.

THE eyeball normally behaves like a rigid box, because its capsule is tough and practically inextensible and its hardness constant as increased inward filtration also means accelerated outward filtration. Like articles called rigid the tension, the volume of contents, the shape, size and hardness, do not change ordinarily.

The rigid box is not rigidly held in one position. It moves in a variety of ways. Normal rotations do not change the position of the globe as a whole, as the centre remains fixed. Stooping, deep inspiration and expiration, coughing, sneezing, shouting, compression of the jugular vein in the neck, straining at stools, opening and closing of lids, etc., cause physiological displacement of the organ as a whole without change in shape. Rapidly growing tumours of the orbit change the shape, the position and cause rotation. Paralysis of external muscles changes the position and produces rotation without altering the shape. Pressure with fingers on the eyeball moves it backwards and also changes its shape and so on.

It is held in its sling by means of elastic forces of external muscles, the fascial connections, the cushion of orbital fat, the volume of blood held in the vessels specially the veins behind the eyeball and the nerves.

The space occupied by the eyeball is very much reduced immediately after enucleation and it cannot be restored to its original position in the orbit. Just compare the size of artificial eyes to the natural ones.

The eyeball and the cushion of fat behind exert an elastic pressure against each other, the former being harder disfigures the latter without altering in shape itself. An incomplete spherical socket is thus formed for the globe to rest in.

The rigid box is softened when it communicates with the atmosphere and pressure within is reduced to zero in cataract operation. The lens diaphragm is destroyed specially in intra-capsular extraction and there is only one compartment. The sclerotic and cornea are depressed like a canvas or leather bucket filled with water and placed on the floor. Water overflows by its own weight. The fractured eyeball is worse placed in this respect. The elastic forces which antagonised in natural condition are largely