related subjects. Crofton *et al.* (1952) reviewed the entire subject of pulmonary eosinophilia. The latter they define as a condition in which pulmonary infiltration on the radiograph is accompanied by blood eosinophilia, but in which any of four conditions (the resolving stage of pneumonia, hydatid disease of the lung, Hodgkin's disease, and sarcoidosis) can be excluded. According to their classification of pulmonary eosinophilia, the Katayama syndrome would be grouped under that of simple pulmonary eosinophilia (Loeffler's syndrome).

The pathology in simple pulmonary eosinophilia has not been studied, as the condition is not fatal. However, Von Meyenburg (quoted by Crofton *et al.*) described changes which he considered to be those of Loeffler's syndrome in three soldiers who died from trauma. Irregular bronchopneumonic foci were noted which were seen microscopically to consist of small areas of alveolar exudate with many eosinophils. In one there was an eosinophilic infiltration of the interstitial tissue. In two cases ascarides were found in the intestine. Crofton *et al.* conclude that the entire group of pulmonary eosinophilias represent a hypersensitivity reaction of the body to various stimuli. When the hypersensitive reaction is brief and involves only the alveoli the manifestation is a simple pulmonary eosinophilia.

The breakdown of normal, abnormal, or foreign protein in the body tissues results in the release of histamine. Vaughn (1953), by injecting extracts of ascaris and of histamine into guinea-pigs, was able to demonstrate a great concentration of eosinophils in the pulmonary tissue. Twelve hours after the injection widespread thickened areas with a patchy consolidation were a common finding, and microscopical study showed a gross eosinophilic infiltration of the perivascular and peribronchial connective tissue. The changes, though similar, were more extensive after ascaris extract than after histamine injection. In Vaughn's opinion the biological purpose of this eosinophilic infiltration lies in the fact that the eosinophil, being in effect a carrier of histamine, is performing its function in delivering a substance to the lung, where it is inactivated by histaminase or another related enzyme.

In 1949 Sprent (quoted by Crofton *et al.*, 1952) sensitized mice to various ascaris extracts by parenteral injection and also produced striking pulmonary changes, including an eosinophilic infiltration. In a case of ascariasis it is known that the life cycle includes a stage of pulmonary migration, but as the result of Sprent's and Vaughn's experiments it is probable that the transitory pulmonary shadows seen in that condition are also better explained as an allergic phenomenon than as a reaction to the migrating larvae.

Further evidence of the allergic nature of this group of diseases is recorded by Wright and Gold (1945), who describe nine cases of pulmonary eosinophilia associated with creeping eruption, a local condition of the skin caused by the filariform larvae of *Ancylostoma braziliense*. Furthermore, in view of the similarity of the lung changes associated with eosinophilia which occurs in other parasitic diseases such as ascariasis, trichiniasis, cutaneous helminthiasis, amoebiasis, and liver-fluke infestation, the pulmonary changes seen in Katayama disease can best be accounted for on an allergic basis.

At this stage attention should be brought to the recent interest shown in the eosinophilia hepatomegaly syndrome of young infants and children caused by infestation with the larvae of *Toxocara canis*, a dog roundworm.

Beaver *et al.* (1952) and Milburn and Ernst (1953) have demonstrated the larvae in the liver of affected patients. The latter authors suggest that other diseases, such as Loeffler's syndrome and tropical eosinophilia, may also be due to visceral nematode larvae migrations. In this connexion Muhleisen (1953) demonstrated filariform hookworm larvae in a patient who developed asthmatic symptoms one week after the onset of creeping eruption. Such symptoms had previously been regarded as being of allergic origin.

To our knowledge, no sputum studies have been done on patients in the toxæmic stage of bilharziasis, but it is

thought most unlikely that the transient pulmonary infiltrations and other symptoms of the Katayama syndrome could be accounted for by cercariae trapped in the capillary bed of the lung or by migrating schistosomes. There is no evidence that the mature schistosome migrates anywhere but to the vesical and intestinal venous plexuses. All extra-urinary and intestinal forms of bilharzia are due to embolization of ova from the above sources.

If the syndrome was due to cercariae trapped in the lung capillaries, symptoms would be expected soon after infestation, and would not appear three to four weeks later.

Summary

A case of Katayama disease caused by *Schistosoma mansoni* is reported. Symptoms developed 26 days after a single exposure to infected water.

In addition to the well-known symptoms and signs of this condition, a marked transient pulmonary infiltration is demonstrated.

The pathogenesis of pulmonary eosinophilia in schistosomiasis is briefly discussed, and it is thought that the symptoms are best explained on an allergic basis.

REFERENCES

- Beaver, P. C., *et al.* (1952). *Pediatrics*, **9**, 7.
 Crofton, J. W., *et al.* (1952). *Thorax*, **7**, 1.
 Gelfand, M. (1942). *Clin. Proc.*, **1**, 247.
 — and Osburn, H. S. (1943). *Ibid.*, **2**, 169.
 Milburn, and Ernst, K. F. (1953). *Pediatrics*, **11**, 358.
 Muhleisen, J. P. (1953). *Ann. intern. Med.*, **38**, 595.
 Vaughn, J. (1953). *Blood*, **8**, 1.
 Wright, D. O., and Gold, E. M. (1945). *J. Amer. med. Ass.*, **128**, 1082.

Medical Memoranda

Use of the Hodge Pessary in the Sling Operation

The use of a Hodge pessary in assisting diagnosis and as a test of the desirability, or otherwise, of carrying out a sling operation in cases of retroversion with symptoms is too well known to warrant further consideration here.

Its employment, however, as an instrument in the technique of the Baldy-Webster sling operation has never come to my notice, and I have not been able to find any such reference in the literature, nor have the many colleagues whom I have questioned. During the past 18 months I have used the pessary in 12 cases in which the Baldy-Webster sling operation has been carried out.

On the evening before operation the vagina is cleansed in the usual way and a Hodge pessary of suitable size inserted, or insertion may be left until the following day, when, with the patient anaesthetized and ready for operation, the pessary is introduced with adequate antiseptic precautions. At operation it is found that the uterus is maintained in good position, and the actual sling procedure is facilitated and simplified. In some of the cases the pessary has been removed 24 hours post-operatively, whilst in others it has been kept *in situ* for five days. In no instance has there been any indication of infection or other untoward effects, and the immediate results have been excellent. So far as can be judged at present by follow-up examination at the gynaecology post-operative clinic, the relatively long-term results leave nothing to be desired.

COMMENT

The use of a vulsellum forceps or a catgut traction suture in the fundus of the uterus to hold this organ forward in a reasonable position whilst operating is largely condemned, as damage may be done to the myometrium, and the punctures and knots may form points to which adhesions may attach, with possible unhappy results, especially for a woman of child-bearing age. An assistant's hand may support the uterus, but frequently this is found to be a doubtful

benefit, as it is often cumbersome, it obscures the field of operation, and it interferes with manipulation. With the use of a Hodge pessary to support the uterus in a normal position from below, through the vagina, damage is not done to the uterine fundus, the field of operation is left clear, and an assistant is hardly necessary.

Further, if a pessary of correct size has been used for diagnostic purposes and has relieved the symptoms, it is reasonable to assume that it has maintained the uterus in the optimum position, and that a similar pessary should be in position during the operation. Without its use the uterus may be supported too loosely, in which case the operation may fail in its purpose, or the uterus may be supported too tightly, with the possible substitution of symptoms such as dragging or pain in the iliac fossae and groins. Either of these contingencies is not unknown. Viewed in this light, the Hodge pessary should serve a useful purpose in other operations for correction of retroversion, such as the Gilliam procedure.

I thank Dr. Hugh Stirling, obstetrician and gynaecologist, Eastern District Hospital, Glasgow, for his interest and for permission to publish.

F. HAMILTON LECKIE, M.C., T.D., M.R.C.O.G.,
Assistant Obstetrician,
Eastern District Hospital, Glasgow.

Treatment of Actinomycosis with Aureomycin

Reported cases of actinomycosis treated with aureomycin are few. As clinical trial is the only effective guide to dosage with this therapy a case is reported and the literature is reviewed.

CASE REPORT

A farmer aged 31 was admitted to hospital complaining of a lump in the neck which had been present five weeks.

remaining. Four months later there had been no recurrence. The only toxic reaction noted throughout both courses was occasional vomiting.

DISCUSSION

In vitro tests of sensitivity of actinomyces to aureomycin have been carried out by Hager *et al.* (1949), Strauss *et al.* (1951), and Garrod (1952), but conditions necessary for the growth of actinomyces are highly unfavourable to the action of aureomycin.

Cases of actinomycosis treated with aureomycin are reviewed in the accompanying Table, but two need further comment. The case treated by Grant (1951) was associated with a fractured mandible. Treatment was interrupted by the patient taking his own discharge and the condition recurred, but was cured by a second course of aureomycin. A case of actinomycosis of the chest wall with clinical pericarditis was reported by Zoeckler (1951). Only 26 g. of aureomycin was given over the course of 13 days, but there was no recurrence three months later.

In all the cases reported *A. israeli* was isolated by culture. All were regarded as cured, and in most cases other methods of treatment had already been tried without notable success. Rapid improvement followed administration of aureomycin in all cases, and indurated tissues with draining sinuses healed, leaving only minimal scarring. Surgical drainage was thought to be unnecessary in all cases except one of a hepatic actinomycotic lesion. Comparable results have not been reported with any other form of therapy.

Although Zoeckler's case was cured with only 26 g. of aureomycin, the table shows that a course of aureomycin 3 g. daily for ten days, followed by 2 g. daily for a further 18 days in divided doses, as used by McVay *et al.* (1950,

Cases of Actinomycosis treated with Aureomycin

Authority	Site	Length of History	Period of Treatment in Days	Total Dose in G. *
Glahn (1952)	Cervico-facial	(?) 6 months	21	42
Grant (1951)	"	3 months	26	52
			(21 days' interval)	
Kelly (1951)	Intestinal	14 "	40	Not stated
	Cervico-facial	5 "	107	116.5
	"	6 "	28	99 + local irrigation
McVay <i>et al.</i> (1950, 1951)	"	3 "	28	66 + local irrigation
	Hepatic	2 years	28	66
Ten Berg (1950)	Ileo-caecal	22 months	58	21 intravenously; 158 by mouth; + local irrigation
Thompson and Wax (1950)	Tibia	3 "	Not stated	Not stated
Wright and Lowen (1950)	Cervico-facial	22 years	29	42
Zoeckler (1951)	Chest wall	3 months	Not stated	Not stated
			13	26

* Administered by mouth unless otherwise stated.

Examination disclosed a lump 2.5 cm. in diameter in the skin of the right side of the neck. It was spherical, smooth, ill-defined, firm, and fluctuant. The skin over it was indurated and reddened but not warm, and no sinuses were present. There were no other abnormal physical signs. Blood counts and x-ray films of the jaw, spine, and chest were all normal. The Wassermann reaction was negative. Aspiration of the lump produced pus which showed *Actinomyces israeli* on anaerobic culture.

Aureomycin was given: 3 g. daily for two days, 2 g. daily for eight days, and 1 g. daily for 23 days. It was administered six-hourly, to a total of 45 g., together with vitamin-B complex. The lump subsided rapidly and was no longer visible within one week of the beginning of treatment, although on palpation the skin was fibrosed, and this persisted.

Within a month of cessation of treatment, however, the lump had recurred and the presence of *A. israeli* was again confirmed bacteriologically. Aureomycin was recommenced, 3 g. daily being given for 28 days, in divided doses, together with vitamin-B complex. Once again there was the same rapid subsidence of signs, only a nodule of fibrous tissue

1951), to be indicated for most cases, although some—for example, abdominal actinomycosis—will need a heavier dose.

Aureomycin must be regarded as the treatment of choice in actinomycosis, but adequate treatment is necessary if relapse is to be avoided.

I should like to thank Mr. C. J. Cellan Jones, under whose care this patient was admitted, for permission to publish this case.

Swansea Hospital.

S. A. SELIGMAN, M.B., B.S.

REFERENCES

- Garrod, L. P. (1952). *British Medical Journal*, 1, 1263.
 Glahn, M. (1952). *Acta chir. scand.*, 102, 433.
 Grant, R. (1951). *J. oral Surg.*, 9, 334.
 Hager, H. F., Migliaccio, A. V., and Young, R. M. (1949). *New Engl. J. Med.*, 241, 226.
 Kelly, H. H. D. (1951). *British Medical Journal*, 2, 779.
 McVay, L. V., jun., Dunuvant, D., Guthrie, F., and Sprunt, D. H. (1950). *J. Amer. med. Ass.*, 143, 1067.
 — Guthrie, F., and Sprunt, D. H. (1951). *New Engl. J. Med.*, 245, 91.
 Strauss, R. E., Kligman, A. M., and Pillsbury, D. M. (1951). *Amer. Rev. Tuberc.*, 63, 441.
 Ten Berg, J. A. G. (1950). *Ned. T. Geneesk.*, 94, 937.
 Thompson, F. R., and Wax, W. V. (1950). *N.Y. St. J. Med.*, 50, 1499.
 Wright, L. T., and Lowen, H. J. (1950). *J. Amer. med. Ass.*, 144, 21.
 Zoeckler, S. J. (1951). *Circulation*, 3, 854.