talent in that field. Not one of the 500 patients consulted me on account of an overt psychiatric condition. . . .

"Among the 500 patients there were 116 (23%) without any discoverable organic cause for the symptoms of which they complained. In addition, there were 56 (11%) presenting minor organic lesions but with symptoms which could not possibly be explained by the lesions alone. In a word, one-third of the patients suffered solely or predominantly from functional disorders."

Strictly speaking, it might be stretching a point to say that all of these functional disturbances were due primarily to psychiatric disorders. Nevertheless, if you are willing to define the province of psychiatry as the broad field I have outlined, then surely the problems of these patients are of interest and concern to psychiatrists. For instance, a man otherwise well and competent suffers from very distressing digestive symptoms whenever he is worried, or for other reasons under nervous strain. Shall we consider this a psychiatric problem? I think we undoubtedly must, since here psychic influences play the chief role in disturbing the balance of the vegetative nervous system. What is commonly called the spastic colon invades the psychiatric field more prominently than it does the gastro-enterological.

With steady insistence psychiatrists have laid stress upon the whole personality of any and every patient—their own and those in every medical specialty. Psychiatrists, despite their isolation in asylums, despite inferior recruitment to their ranks and the taboo and horror associated with insanity, despite the time required for making their diagnoses, and despite their isolation from experimental methods and the fact that laboratory animals do not appear to develop psychiatric conditions (except Pavlov's experimental neurosis)—despite all these handicaps psychiatrists are nearer to adequate discharge of their duties than they have ever been before. For the first time man studies his own conduct dispassionately and in terms of cause and effect—not devils and disasters. Cannon's work upon the physiology of the emotions, the exceptional growth of neurophysiology, thanks to Sherrington and to new instruments of registering the changes of electrical potential in nerves, the stimulus of Freudian theory, of Pavlov's work on reflex behaviour, and the steady extension of scientific methods of study of psychiatric patients, are some of the factors in the progress of psychiatry.

Much remains to be done. Kolb of the United States Public Health Service reported that in 1939 \$200,000,000 was spent on mental diseases, yet not 1% of it for research. One child in every 20 in the United States will at some time of his life be in hospital for mental disease, and another child in the same 20 will at some time be psychiatrically disabled but not hospitalized. There are probably 6,000,000 feeble-minded persons of all grades in the United States, 80 to 95% at large in the population, 100,000 alcoholics and drug addicts, between 800,000 and a million mentally diseased, and 400,000 epileptics. There are more hospital beds devoted to psychiatric cases than to all other forms of disease. Ninety per cent. of the cost is at public expense. And in the face of the dislocation, loss, and sorrow in the families of the mentally disordered the statistician remains mute.

We are indebted to the Editor of the *Menninger Clinic Bulletin* for permission to republish this article.

Mr. Sydney Lamb was appointed secretary and organizer of the Liverpool Hospitals Council—now the Merseyside Hospitals Council (Inc.)—early in 1927, having already achieved notable success in Sheffield, where as secretary of the Hospitals Joint Council he increased the annual contributions from employees and employers by over £100,000 in five years. From this post of general secretary of the Merseyside Hospitals Council Mr. Lamb is about to retire. Starting in Liverpool with a rather small office, he worked indefatigably to make the "Id. in the £" principle an integral part of everyday life on Merseyside. To-day he controls a large organization which enables workers and employers to make their own contribution towards a complete hospital service—one of the most comprehensive in Britain. It assumes responsibility for the hospital service of a million Merseyside workers and their dependants, and has an annual income of £420,000. Among the many important posts held by Mr. Sydney Lamb was the office of general secretary and treasurer of the International Hospital Association, which took him to many of the great capitals and cities of both Europe and America. In 1941 he became honorary secretary of the British Hospitals Contributory Schemes Association.

OCULAR SYNDROME IN ONCHOCERCIASIS

BY

J. GRAHAM SCOTT, M.D., D.O.M.S., B.Sc.

Major, R.A.M.C.

Onchocerca volvulus (the blinding filaria) is commonly found in certain parts of West Africa and America. It produces keratitis and iritis. Strong, Sandground, Bequaert, and Ochoa (1934) found microfilariae in affected eyes. Hissette (1932, 1938) described choroidoretinitis, retrobulbar neuritis, and optic atrophy in cases of onchocerciasis. Luna (1918, 1919) had previously described keratitis punctata onchocercosa due to filarial toxins.

It is proposed to describe cases in which (1) oedema of the upper lid, (2) proptosis, (3) ciliary flush, and (4) oedema of the optic nerve occurred as unilateral phenomena in two patients with onchocerciasis, and to suggest that a lymphatic block directly due to microfilariae or indirectly due to filarial toxins (as in Calabar swelling) is an explanation of the four symptoms.

Case I

This case is that of a Gambian soldier, and is believed to be the first case of onchocerciasis described in a Gambian, it being uncommon among them. He was admitted to hospital on Dec. 31, 1942, complaining of a painful watering right eye. He had previously enjoyed good health and had experienced no trouble with his eyes until the day before admission. When admitted vision was 6/5 R., and 6/5 L. The right eye was watering and had a slight ciliary flush. The media were clear and the fundi normal. The case was diagnosed as early uveitis and treated with atropine 1% and hot-spooning 4-hourly. The next day the upper lid of the right eye was swollen and there was slight but definite proptosis.

Examination of the general and central nervous systems presented no abnormality on this or on any subsequent occasion, other than the eye signs to be described. The cerebrospinal fluid and white cells were normal. Radiographs of sella, sinuses, and orbits were normal. Blood films, day and night, revealed no microfilariae. A triple-centrifuged specimen of blood revealed a few *A. perstans*, a very common microfilaria in West Africa. A snip of conjunctiva showed no microfilariae. The Kahn precipitation test was positive (+). (This is a common finding in a yaws-infected population.) Blood pressure was 100/70. The urine had no albumin or sugar.

In five days the proptosis became less, but the right fundus showed blurring of the disk. Next day vision was 6/36 R., 6/6 L. The lower half of the right disk was covered with exudate. The oedema of the upper lid and the proptosis gradually faded during the next 14 days, but the right fundus slowly developed a low-grade oedema, with swelling of the nerve head of 1 or 2 dioptres. The upper temporal veins became veiled with exudate, and a few flame-shaped haemorrhages developed round the disk at 10 and 7 o'clock. The macula remained within normal limits till the thirteenth day, when it slowly developed a complete star reflex. Fields were as follows. Right: depressed, with enlarged blind spot but no central or other scotomata; 1/1000 white gave 5 degrees field; 5/1000 gave 25 degrees field. Left: normal. Colour test (pseudochromatic); two mistakes right eye; normal left eye.

19th Day.—Temporal veins less veiled and oedema of nerve head subsiding. Vision: 6/24 R., 6/6 L.

33rd Day.—Right fundus returning to normal. Fan reflex at macula persists. Vision: 6/18 R., 6/6 L. Fields show no central scotoma for 1/1000 white or 5/1000 colour. Patient has been having 1% atropine and heat t.i.d. to the right eye and pot. iod. gr. 5 t.i.d. by mouth. After a provocative injection of 0.45 g. N.A.B. the Kahn reaction was "doubtful positive," and a course of 10 weekly injections of 0.60 g. N.A.B. was given.

60th Day.—Vision: 6/5 R., 6/5 L. The left fundus had been normal throughout, and the right fundus showed slight cuffing of vessels on leaving the disk and a faint fan-shaped reflex at the macula. The haemorrhages had been absorbed, and only a slight fullness of the upper lid remained. On the 75th day a slit-lamp became available. One microfilaria was seen in the right and left anterior chambers. There was no K.P., and the right cornea presented a few nebulae in the substance of the cornea. Blood films showed no microfilariae by day or by night.

90th Day.—One or two microfilariae have been seen in both eyes on most days since first noted. The course of N.A.B. is now finished. Vision: 6/5 R., 6/5 L. The right fundus is within normal limits. Patient discharged.

It was possible later to withdraw a microfilaria from the anterior chamber; this was found on staining to be *Onchocerca volvulus*. A skin snip showed many microfilariae (*O. volvulus*), although no nodules could be felt. The right eye showed one fresh yellow speckled opacity in the cornea, which I have seen only in cases of onchocerciasis.

The patient was seen again in 5 and 7 months. He was well and had no trouble with vision or with pain in the eyes despite the presence of microfilariae in each anterior chamber. The fundi were normal, except the faintest veiling of the margins of the right disk.

Case II

The second case was admitted on July 3, 1943, with a painful swelling in the right axilla, mild oedema of the right upper eyelid, and ciliary flush. The axilla was incised and cleared in a normal fashion. The right eye, however, soon became closed with oedema of the upper lid, and proptosis developed. Both fundi remained normal, but vision dropped line by line over a period of 10 days from 6/9 on admission to 1/60. The right eye was painful with lacrimation. Radiographs of the orbits were normal. The Kahn reaction was negative. Central nervous and other systems were normal. The patient was unable to co-operate in perimetry. Day and night films showed scanty microfilariae (*A. perstans*), but a skin snip had many *O. volvulus*, and typical nodules were felt over the right and left iliac crests. No microfilariae were seen in either anterior chamber, but fine dots of pigment were observed on the posterior corneal surfaces.

On the 17th day vision was 6/12 R., 6/5 L.; oedema of the lid was lessening and proptosis and ciliary flush had cleared. On the 27th day vision was 6/5 R., 6/5 L. Slight fullness of the right upper lid remained. The right fundus was normal throughout, except for a transitory haziness on the 7th day, so the neuritis in this case was retrobulbar.

Discussion

The syndrome presented by these two soldiers is not a familiar one in general ophthalmic practice. In the cases described the diagnosis must rest on probabilities, since no single finding was sufficient to establish the diagnosis beyond doubt. The presence of oedema of the upper lid, proptosis, ciliary flush, and optic neuritis indicates a lesion behind the eyeball. The probable causes are (a) haemorrhage, (b) tumour, (c) infection, (d) congestion.

(a) Haemorrhage can be excluded by the absence of subconjunctival echymosis.

(b) Tumour is improbable in view of the complete recovery and lack of other signs pointing to neoplasm or cyst.

(c) Infection (i.e., an orbital cellulitis or a cavernous sinus thrombosis) is not supported by the findings. The absence of a history of previous sinus trouble, the healthy appearance of the orbit on x-ray examination, and the normal white cell count are against orbital cellulitis. The absence of a primary lesion on the face or in the mouth is against cavernous sinus thrombosis. A syphilitic optic neuritis is not commonly unilateral, and in the absence of choroidal changes and unequal pupils this diagnosis is improbable, especially in view of the negative Kahn in the second case. The group of demyelinating diseases has to be considered. Disseminated sclerosis is the commonest cause of a unilateral retrobulbar neuritis, but does not produce proptosis. Furthermore, this disease is very uncommon on the West Coast. Dr. H. Thomas has neither seen nor heard of a case in 16 years' medical service on the coast, and Dr. Carmichael Wilson has seen only one case in Nigeria in 18 years' service. Neuromyelitis optica and Schilder's disease are ruled out by the subsequent history of the cases.

(d) Congestion can be venous or lymphatic. Venous congestion is ruled out by the absence of early fullness of the retinal veins. The association of lymphatic swelling and filariasis is well recognized in elephantiasis, although the mechanism is not quite clear. The filariae in most cases are *Wuchereria bancrofti*, but Strong reports cases due to onchocerciasis. Calabar swelling, an anaphylactic oedema, is associated with *Loa loa*, so there is a precedent for suggesting that onchocerciasis can produce lymphatic swelling. A direct block of the retrobulbar lymphatics by a host of microfilariae is possible, but since microfilariae are well tolerated as a rule by the tissues this is not considered likely. More probable is the theory that an anaphylactic oedema can be produced in the orbit as a result of *O. volvulus* toxins, and that such an oedema is the explanation of the syndrome of oedema of the optic nerve and of the upper lid, with proptosis and ciliary flush.

Summary

Two cases with proptosis, oedema of the lid, ciliary flush, and oedema of the optic nerve associated with onchocerciasis are described. One is believed to be the first case of onchocerciasis reported in a Gambian. It is suggested that the cause of the syndrome is an anaphylactic oedema caused by *Onchocerca volvulus*.

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THE NERVOUS COMPLICATIONS OF INFECTIVE HEPATITIS

BY

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The nervous complications which may arise during the course of infective hepatitis are by no means common. They occur occasionally in spirochaetosis icterohaemorrhagica, but they seem to be even rarer, judging from the literature, in the epidemic form of infective hepatitis.

Nervous Complications of Weil's Disease

Apart from such conditions as mild headache, restlessness, delirium, convulsions, and coma, which are due more likely to the general infection than to any actual involvement of the nervous system, the nervous complication most often met with in Weil's disease is that of meningitis. Yet, judging from reports of cases in the literature, this is of comparatively infrequent occurrence, despite the writings of some French physicians. Meningitis occurred, for instance, in only 3 of the 40 cases of this disease reported by Davidson and Smith (1936).

Meningitis may occur in Weil's disease with or following the jaundice. It may even be the prominent feature in this infection, the jaundice and haemorrhages being slight or even absent—"spirochètose méningée anictérique" of Costa and Troisier (1916, 1917). The cerebrospinal fluid is under pressure, and it may be clear or opalescent, with a fibrinous clot which forms on standing. There is a pleocytosis, with a predominance of the polymorphonuclear variety in the graver cases, lymphocytes in the less severe. Spirochaetes may be found in the fluid, and if the latter is injected into suitable animals jaundice and haemorrhages will generally occur. Eleven cases of meningitis of leptospiral origin, proved by the inoculation into guinea-pigs of the patient's blood or cerebrospinal fluid, have been reported by Costa and Troisier. Cochez and Fichet (1933) have published an account of three similar cases with, however, no obvious signs of jaundice. Inoculation of the urine, blood, and cerebrospinal fluid into guinea-pigs caused jaundice and haemorrhagic lesions in the liver and lungs, and spirochaetes were found in the livers. Agglutination reactions against *L. icterohaemorrhagiae* were positive in the sera of all three patients. These authors emphasize the following additional clinical signs as particularly characteristic of this disease: mild meningeal signs, labial or palpebral herpes, and conjunctival infection. Troisier and Boquien (1933) have examined a number of case histories of patients suffering from meningitis of leptospiral origin, accompanied with, or without, jaundice. Schüffner and Walch-Sorgdrager (1940) had, up to 1936, collected 25 case reports of meningitis from among 312 Dutch patients suffering from Weil's disease. According to their experience, meningitis is commoner in this infection without jaundice; so it seems advisable that serological tests should be carried out in all cases of non-pyogenic meningitis in which the aetiology is obscure. According to the reports of most