

opinions of my colleagues in Egypt, whose daily practice must give them opportunities of studying the effects of the ordinary use of hasheesh. I should be grateful for information on this question.

I have never met with dysentery or bronchitis as the direct result of the use of hasheesh.

Again, in my experience, I find that persons insane from hasheesh have a proneness to commit crimes, especially those of violence, and I have a strong suspicion that much disorderly conduct results from hasheesh smoking, just as alcohol among Europeans leads to such misconduct.

To sum up, the use of *Cannabis Indica* in Egypt seems to have graver mental and social results than in India, and is responsible for a large amount of insanity and crime in this country.

(¹) Extracts from this paper were read at the Egyptian Medical Congress at Cairo in December, 1902.

Clinical Notes and Cases.

A Case of Cysticercus Cellulosæ Causing Insanity.(¹)

By R. SINCLAIR BLACK, M.A., M.D., D.P.H., Medical Superintendent, Government Hospital and Asylum, Robben Island, Cape Colony.

TENIA SOLIUM is common enough in this country in man, but its cystic stage is, I think, met with very infrequently; that is the reason I bring this short paper before the meeting in order to elucidate whether cases of the following kind are met with in any frequency in South Africa.

The so-called cysticercus is, of course, the cystic stage of the *Tænia solium*, its larval condition, which, before developing into the adult sexual tapeworm, must be taken into the alimentary canal of an animal. How does the cyst or bladderworm get to those inner parts of the body in which it is found, so to speak, imprisoned? It is believed that the outer shell of the ovum is digested by the gastric fluid, and that the emergent

.

embryo bores its way through the intestinal walls, getting into the stream of the blood, whereby it is carried and deposited in this or that organ.

It is stated that the cystworm is seldom met with in an animal that is liable to the corresponding cestoid worm ; but this occasionally happens, as in the case of man, the cyst of the tapeworm being an occasional, though rare, inhabitant of the human body. How does this happen ? Possibly one or more of the ripe joints of the tapeworm may ascend into the stomach, where the embryos are set free by the digestion of their cases ; or a pod may be broken by accident or violence while yet within the bowel ; or some of the eggs may chance to be swallowed by man. In any of these cases the liberated embryo pursues its natural instinct, migrating in the usual way, and gets fixed in the uncongenial soil of a wrong animal. This condition is the only known instance in which man is liable to the larval and mature form of a cestoid entozoon.

Fagge states that as a bladderworm the parasite is most frequently observed in the eye and the brain ; but it is very likely, he says, that it is really most frequently present in the muscles and subcutaneous tissue, where, however, it is apt to escape notice. He states that it is often solitary, or present in small numbers. It is remarkable that patients with tapeworms do not more frequently become affected with bladderworms. As a matter of fact very few of those who have a tapeworm become affected with cysticerci ; but conversely von Graafe found that among thirteen patients with cysticerci in the eye five had tapeworms.

This bladderworm is found, as you are aware, chiefly in the pig, being the cause of measly pork ; but it is found occasionally in the monkey, dog, and other animals. In the pig it occurs principally in the connective tissues, between the fascicles of the voluntary muscles, and also in the liver and brain.

Cysticerci are the most frequent parasites of the human eye. Da Costa says that they cannot as a rule be diagnosed, except they be in a position in which they can be seen or felt, or if the little tumours they occasion in the subcutaneous tissues are extirpated and examined. In the brain, he says, the chief symptom is violent and rapidly increasing epilepsy. That cysticercus as a cause of insanity is very uncommon may be taken from the following :—In the proceedings of the British Neurological

Society no mention is made of cysticerci in the brain. Gowers alludes only casually to it ; Beever not at all.

In Leuckart's *Parasites of Man* an excellent account will be found of the development and frequency of cysticercus in parts of Europe, where the subject has been scientifically investigated.

There is a pretty full account written by Collins, of New York, in *Twentieth Century Practice* and his description fairly tallies with the following case.

Ford Robertson, in his new book on mental pathology, makes no mention of it.

The writer in *Twentieth Century Practice* devotes half a dozen pages to cysticerci and echinococci as affecting the brain. He states that the former are more common than the latter. In some cases, he says that there are no symptoms at all ; in others there are various psychoses, such as hysteria, hypochondriasis, and acute mania ; and in others the symptoms of brain tumour occur ; he adds that the symptoms vary very much from time to time. He describes various motor symptoms, and says that they may resemble Jacksonian epilepsy. He admits that it is impossible to diagnose the disease, except inferentially, from any multiple cerebral tumour ; but I think that if cysticerci were noticed in the eye with such irritative brain symptoms, diagnosis might be made of cysticerci on the brain.

In Niemeyer's *Practice of Medicine* six lines are devoted to the subject.

The subject, therefore, is of some interest on account of its rarity.

In the Robben Island Asylum this condition existed in a patient named S—, a Kaffir criminal lunatic, who, with two other natives, was concerned in the murder of a child by throwing it from a railway carriage. On admission he was classed as suffering from acute mania ; he was noisy, and had a staggering gait ; occasionally his sight was bad, no doubt from the presence of cysticerci within the eyeball. He was admitted on May 12th, 1899, and died, after a series of epileptiform fits, on December 7th, 1900.

The case from admission steadily progressed from bad to worse. After observing him for some time I classed him as a general paralytic. He was quite incoherent, had a staggering gait, was dirty, destructive, and often shouting in his single

room at night; he had frequent epileptiform convulsions not confined to one side or the other. Sometimes he appeared to be in great pain, and threw himself about. I several times had to administer hyoscine hypodermically. The case steadily got worse, and he ultimately became generally paralysed; convulsive seizures occurred at intervals, and in one series of these he died.

Post-mortem examination showed excess of cerebro-spinal fluid, general congestion of cerebral vessels, congestion of lungs, liver, and kidneys, thickening of mitral valves. Over the frontal region of the cerebrum, numerous cysticerci, adhering to the pia mater and embedding themselves in the grey matter of the brain, were scattered. Over the motor area, particularly about the fissure of Rolando, they were very numerous, covering the whole surface with small semi-transparent vesicles about the size of a pea; when one of these was taken out it showed a white spot on the surface—the head of the cystic worm.

Over the sensory area of the brain the cysts were infrequent, as also at the base of the brain; they were, however, very deeply embedded in the walls of the lateral ventricles, the ventricular surface of the optic thalamus and the corpus striatum being studded thickly with these cysts.

In the fourth ventricle the condition was very interesting; five cysts hung by delicate pedicles from the fine membrane lining the exposed surface of the ventricle, and floated about in the cerebro-spinal fluid; the cerebellum was free.

The cysts all seemed to have origin from the pia mater, having evidently been carried in a swarm by the blood-vessels to the sites in which they took root as ova and grew into cysts. There must altogether have been several hundreds of these cysts in the cerebrum, and it was impossible to separate the membrane from the surface of the cerebrum without tearing the brain to pieces. The mental state of the patient was amply explained by the condition of the brain.

The cysts were all of nearly the same size, one eighth to a quarter of an inch in diameter. Some seemed older than others, with thick walls; others were apparently more recent, with transparent walls.

In the body generally, wherever the muscle was cut into, cysts were found lying between the fascicles of the muscles.

The cysts in the muscles of the body appeared much fresher than many of those in the brain, being all plump and semi-transparent; the head of the bladderworm being very discernible. They were particularly abundant in the intercostal muscles, and were also present in the diaphragm. They were found sparsely in the muscle of the heart, and in the connective tissue under the pericardium.

I did not observe them in the cutaneous connective tissues, or in the lungs, liver, or spleen, but they were found in the connective tissue round the kidneys.

Altogether there must have been several thousand of these cysts in the body generally, and the pain suffered by the unfortunate man must have been acute and prolonged, only mitigated by the profound dementia resulting from the gross cerebral lesions.

Though I recognised the condition at once on making the *post-mortem* examination, I did not, till I read up the literature of the subject, recognise the great interest of the case, and I very much regret that I did not carefully search the intestinal tract for tapeworms, or the eye for cysticerci, as I would otherwise have done. I may, however, say that I had frequent occasion to see the dejecta of this patient when visiting him in his single room, and I never noticed any evidence of tapeworm.

In the 'Report of Asylums for Cape Colony' for 1899 I observed that my friend Dr. Conry, medical superintendent of Fort Beaufort Asylum, had a very similar case; I consequently wrote to him regarding it, and he furnished me with the following interesting notes, which he has kindly given me permission to read to you. The case tallies very closely with my own.

I am sure the Society would consider it of interest if other cases of this kind could be reported.

W. B—, admitted to Fort Beaufort Asylum from Grahamstown January 23rd, 1899, suffering from epileptic dementia.

Notes taken from the Case-book.

January.—Is excitable and has a difficulty in understanding what is said to him; speech slow and laboured; epileptic fits not frequent.

March.—Excited if spoken to; wants to go home; quarrelsome; fits not frequent.

June.—Excited and incoherent if spoken to; quarrelsome; inclined to be violent.

September 5th.—Vacant-looking ; quarrelsome ; tries to bite ; fits much more frequent.

September 10th.—Fits more severe ; difficulty in swallowing ; unable to answer when spoken to.

September 20th.—Unable to answer when spoken to ; lies in a semi-conscious state ; cannot swallow ; fed *per rectum* ; fits continuous day and night.

September 30th.—Dead.

Post-mortem notes. Autopsy made thirteen hours after death.

Body well nourished ; head well shaped. On removing calvarium dura mater non-adherent, all blood-vessels very full and prominent, longitudinal sinus bulging. On removing the dura mater, vessels still very prominent, pia arachnoid friable, surface of grey matter very soft and pinkish-looking, the least touch causing the convolutions to peel off. The pia arachnoid could not be removed without loosening the surface of the convolutions. When the pia mater was removed the convolutions did not look grey, but pinkish. The brain presented numerous small masses, nodules of a semi-cartilaginous feel, resisting the knife ; they were about the size of an ordinary pea, and were numerous throughout the cerebrum and cerebellum. They were not in the spinal cord. They were in the walls of the ventricles, and could be seen and felt protruding from the surface. They had a pinkish tint, probably from the colour of their investing membrane ; internally they were white, and firm in character. They appeared to be dried-up cysts ; they could be easily separated from the brain tissue. The cysts were not shrunken ; the contents must have become dry, as the cyst sac was full. There were also numerous cysticerci studded throughout both cerebrum and cerebellum. There were a good many in the ventricles, some attached by thin pedicles, a few floating loose. They were about one quarter inch in diameter, almost transparent, and showed a white spot at one point in their walls. They floated easily in water. Occasionally two were attached together by a thin pedicle. Their membrane was tough ; it required a firm squeeze to rupture the cyst. There were no cysts found in any other part of the body.

(¹) Read before the Cape Town Branch of the British Medical Association.

A Case of Cysticercus Cellulosæ of the Brain. Reported by Dr. W. C. SULLIVAN (with the permission of the Prison Commissioners).

D. R.—, æt. 27, butler, of Italian nationality, resident in England for past eight months, married, two children, the younger aged six weeks ; in prison for petty larceny.

Nothing special in family history. No illness of note in patient's own antecedents, except that two years ago he is said to have had a "fit," in which spasm of right hand and arm preceded loss of conscious-