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OBSERVATIONS ON THE DISEASE LETHARGUS : with cases and pathology

R. CLARKE

London Medical Gazette, 1840, 26



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coloured, depositing after standing a brownish sediment. After dressing the wound I ordered the patient to be kept on low diet, to remain in bed, and to take the following draught every four hours:—

R Magnesiæ Sulphatis, ʒij.; Antimoni Tartarizati, gr. i.; Inf. Sennæ c. q. s. M. Haust. ʒiiss.

Dec. 29th.—Had a restless night; very incoherent in his talk; pulse full. I took sixteen ounces of blood from the arm; ordered the aperient draught to be continued, with Pil. Hydr. gr. v. added to each dose.

30th.—Slept about two hours; bowels acting freely, the evacuations dark and very offensive; tongue white, and the edges uneven. Omit the Ant. Tart., and take a teacupful of beef tea in the day.

31st.—The pulse 90; more natural; the mind is becoming tranquillized; the vision still imperfect; complains of a noise in the ears, with tenderness in the right side. I now determined on continuing the mercury until gentle ptyalism ensued, with a spare diet, perfect quietude of mind and body, forbidding all conversation. The state of mental stupefaction in which he was when he committed the act was after a few days succeeded by feelings of the bitterest remorse and contrition; nothing could pacify his self-accusations for having attempted so horrible a deed, until I explained to him that his crime was itself an almost involuntary act, depending upon his deranged health, and that it was his previous ill conduct and intemperance which had induced the attempt: he said "he had not been well the last six or seven months past, frequently wandering he knew not where, until hunger or fatigue roused him to reflection; and at other times shunning the society of friends, and stupifying himself in the corner of some public-house-tap room, imagining that every one distrusted him, and regarded him as unworthy of their friendship." My reasoning with him in endeavouring to convince him that health of mind was dependent on health of body, seemed to inspire him with hope, and allowed of my furthering the medical treatment, which was continued by attention to the sanguineous system and *prima viæ*, by removing the inflammatory condition of the membranes of the brain, with the mercurial and alterative treatment.

Feb. 14th, 1840.—I took my leave of him, after assuring me how gratefully he felt for his restoration to health of mind and body.

Crayford, Kent, August 20, 1840.

OBSERVATIONS  
ON THE  
DISEASE LETHARGUS:

WITH CASES AND PATHOLOGY.

By ROBERT CLARKE, Esq.

Colonial Surgeon, Sierra Leone.

THE attention of the medical profession was, I believe, first directed by Dr. Winterbottom to the frequency and often fatal termination of the disease termed *lethargus* on the western coast of Africa; but the description given in his work, both of the symptoms and treatment, is much too meagre for practical purposes. As deductions leading to a sound and rational mode of treatment can alone be drawn from an attentive, patient, and minute investigation of the pathological appearances presented, the following observations, with cases and pathology of this most interesting disease, founded upon my own experience as Surgeon to the African Hospital at Kessy, in the colony of Sierra Leone, will not, I trust, be uninteresting, or deemed a work of supererogation.

Dr. Mason Good, in his work upon the Study of Medicine, has placed this disease among the class *Neurotica*; but, as developed in the cases which have come under my notice, I submit that it may be classed under the variety *Cataphora*, or short remissive lethargy.

*Causes of disease.*—Lost balance of circulation, inducing irregular distribution of blood, and venous congestion; depressing mental emotions; severe bodily labour; unwholesome, scanty diet; repelled eruptions; suppressed evacuations: perhaps functional derangement of the nervous system, producing insufficient action or energy to resist the approach of sleep, even without its concomitant existing causes.

*Symptoms.*—On first approach of the disease the patient is observed to become fat, the demand for food being inordinate. When the disease has, however, existed for some time, the appetite declines, and, in the latter stages of the complaint, the patient emaciates. Uncontrollable desire to sleep, the patient often falling asleep in the act of conveying food to his mouth. Sometimes squinting and convulsions may be observed. The glands

of the neck become tumefied; but this is by no means always present.

The negroes call this disease *sleepy dropsy*, and, after it has progressed, never attempt its cure, giving over the patient as incurable; but, in the first stages, they endeavour to cure it by inducing copious perspiration.

Some European doctors, conceiving the disease to be induced by debility, have administered various stimulants, such as camphor, musk, valerian, blisters, sternutatories, metallic tonics, as sulphate of zinc, &c. The powerful agent, galvanism, has been also employed. Others, I imagine with more propriety, have viewed the disease as originating from congestion of the brain, and have sought its cure in the employment of local depletory measures, and of keeping up an action of the bowels; but it appears to me that medical men have been deterred from the judicious employment of general bleeding by an unfounded apprehension of danger from debility; nor would it appear that the potent remedy mercury has ever been called in to exert its powerful influence in equalizing the circulation; indeed the practice I imagine to be novel. An esteemed and experienced friend of mine, holding the chief civil medical appointment in this colony, has informed me that he has repeatedly tried it with a view to induce ptyalism, but without effect. Another medical friend, of long standing and experience in the colony, told me that he had treated the disease repeatedly, using blisters and drastic purgatives; but neither of these gentlemen appears to me to have sufficiently appreciated this medicine (mercury). Dr. Bacon, a gentleman practising at Cape Mesurado, the American settlement on this coast, remarked to me that the disease is of frequent occurrence there, accompanied in its progress by a low type of typhoid fever; but this I have never observed in any of the cases which have come under my notice. Dr. Winterbottom observes, that the slaves from the Bight of Benin are the most subject to it, and that it prevails much among the Foulahs. I have observed it also equally to prevail among several other tribes inhabiting parts of the continent far inland. I have chiefly seen it among the liberated Africans, of whom there are sometimes from 400 to 500 at one time in the hospital under my charge; and I have

been informed that several cases have occurred even among the Creole inhabitants.

CASE I.—On the 7th April, 1839, Mary Coker, æt. 14, an apprentice from Waterloo Village, a native of Benin, was admitted to hospital. States that about three months ago she was attacked by *sleepy dropsy*, (country name), or *lethargus*, for which she was treated by the natives, but without mitigation or the slightest alleviation of the symptoms. She is of a stout plethoric habit of body; general appearance that of an individual roused from sleep, the face and eyes being devoid of animation—almost of expression; wears a besotted look; the skin is dry, and above natural temperature; pulse 108, and small; bowels costive; tongue clean about tip, but towards root and in middle coated with a greyish fur: during the day she continues drowsy, and will fall asleep while taking food.

R Emplast. Vesicator. 7 × 4 inches. Apply from occipital protuberance along the spine:

R Ext. Colocynth Comp.; Submar. Hydrarg. aa. gr. xij. Divide in pil. No. vj. One every two hours until the bowels are freely opened.

8th.—Bowels open; alvine evacuations natural; during night she removed the blister; it had partially risen; skin cooler.

Re-apply blister.

R Calomel ʒj.; Pulv. Ipecac. gr. x.; Opii. gr. ij. M. Divide in pil. No. vj. One of the pills every three hours.

April 9th.—Blister has risen well; bowels open once; a lumbricus about eight inches long discharged; the urine is secreted sparingly in quantity and is highly coloured; does not however coagulate on application of heat; skin of natural temperature.

10th.—The mouth has become affected with the mineral; her bowels have been twice opened; micturated once in the space of 36 hours: the same lethargy oppresses and weighs down both her physical and intellectual faculties; pulse 94, small and quiet.

Let the mouth be gargled with

R Solut. Chlorid. Sodæ, ʒi.; Aquæ font. ʒxxv. M. Fiat solutio.

11th.—No change.

12th.—Considerable amendment in appearance, which is more lively than since her admission; bowels have been severely purged; appetite good; but it being desirable to keep up a brisk action from the intestinal tube, I gave

R Aloes Socot., Ext. Colocynth. comp. aa. gr. xij.; Calomel. gr. xij. M.



Divide in pil. No. vi. One every three hours.—Continue the wash for the mouth.

14th.—Vast quantities of faeces have been discharged by stool, dark coloured, highly offensive, and stringy, as if from the tenacity of intermixed bile. During the night she was buried in the most profound sleep. Pulse 112, small and quick; tongue much loaded at base; the secretion from kidneys sparing, and on application of heat a film of albuminous-like coagula floated on surface: about abdomen, particularly in epigastric region, there is some distension as if from flatus: appetite good.

R Bitart. Potassæ. ʒi.; Aquæ font. lbij.  
M Ad libitum.

To discontinue pills, and the bowels to be kept open with

R Sulph. Magn. ʒij.; Aquæ font. lbij.  
M. A wine-glassful every four or five hours until the bowels are opened.

16th.—Bowels freely open; says she feels less inclination to sleep: about half a pint of slightly turbid urine passed in the course of the 24 hours.

18th.—Pulse 120, quick but small; appetite good; tongue clean round the edges and at tip, but base covered with grey sordes; her general appearance more lively than on previous days.

19th.—Bowels open, but evacuations sticky: during day she walks about the yard and ward, occasionally conversing with girls of her own age, but more frequently moves about without noticing surrounding objects. She has never been observed to laugh since her admission, and often drops asleep after very slight exertion. Urine sparingly secreted. She has continued to use the Solut. Bitart. Potassæ, and as a purgative a solution of Sulph. Mag.

Continue wash for mouth. The diet to consist of soup with arrow root, or well boiled sago and a small quantity of wine.

20th.—Several lumbrici, from eight to nine inches in length, were found in alvine evacuations.

R Ol. Ricini. Terebinth. aa. ʒss.; Sp. Piment, ʒi. M. Statim sumend.

21st.—She is greatly emaciated; bowels well opened by the medicine; pulse 118, small and quick.

R Sulph. Quininæ, gr. vi.; Infus. Quassia, ʒij.; Sp. Vin. Rect. ʒi. M. A wine-glassful three times a day. The mouth and gums being still tender and spongy, continue wash for mouth.

22d.—A lumbricus came away this morning. The irresistible disposition to sleep cannot be better described than by noticing the fact of her dozing at the moment I was noting her case, although aroused the mo-

ment before to put some questions to her. The urine is still secreted very sparingly.

R Ol. Terebinth. ʒi.; Sol. Gum. Arabic, ʒi. M. Statim sumend.

26th.—On the 23d she passed a lumbricus; the bowels have been opened two or three times daily: tongue clean at tip and round edges, but towards the root loaded with greyish coating: pulse 100, small and quick: no improvement of lethargic symptoms. When dozing I have repeatedly held a candle close to the eye, the pupil remaining fixed and staring. About epigastrium there is distension, but no sense of pain is experienced on pressure: call to pass urine is seldom oftener than three times in the course of 36 hours.

R Emp. Lyttæ to epigastric region.  
—Continue Infus. Quassia c. Sulph. Quininæ. To be used as formerly.

Her strength to be supported with light nourishing food.

27th.—She appears better. At the same time during the night she attends to the calls of nature, while formerly they frequently passed involuntarily. Quantity of urine is now very considerably increased, amounting to eleven ounces in three hours.

28th.—Has removed blister from abdomen; appears lively. The bowels to be kept open by

R Submur. Hydrarg. Ext. Colocynth. comp. aa. gr. iv. M. Divide in pil. No. ij. One to be taken immediately, and the other six hours thereafter, if the bowels are not previously acted upon. Let the blister be reapplied.

29th.—Blister has risen well; pulse small, 116.

Continue Infus. Quassia c. Sulph. Quinin.

May 21.—Alvine evacuations more natural: the feet and legs slightly œdematous.

R Liniment. Sapon. ʒij. The feet and legs to be embrocated, and to be then bandaged from toes to knees.

4th.—General appearance bad: alvine evacuations bilious, mixed with frothy-like mucus; quantities of undigested food contained therein; drowsiness evidently on the increase.

5th.—To-day she was asleep when I entered the ward. On light being brought close to pupil it remained uncontracted.

6th.—No change.

7th.—Pulse full, 106; breath is highly fetid: general aspect improved; has, however, slight dyspnoea, attended with cough, and complains of pain under left breast. On applying the ear to chest the respiratory murmur was distinctly crepitous: feeling of hardness about epigastrium has disappeared.

R Emplast. Lyttæ. 4 × 4 to chest.

R Tinct. Camph. Comp., ʒiv.; Antim. Tart., gr. ij.; Aquæ Font., ʒviii. M. A table spoonful every three hours.

8th.—To-day the blister has risen well: she appears, however, weak. No expectoration; breath extremely fetid; pulse 100.

9th.—Before visiting hour was told by matron that she was dying. At 7 A.M. she expired.

Autopsia, two and a half hours after death.—

Body not much emaciated. Head: Arachnoid membrane thickened, firm, and opaque. Substance of brain, when cut into, was closely dotted over with blood-vessels. About one dram of serum present in lateral ventricles, and at base of brain half an ounce of same fluid was effused. Thorax: Some effusion between pleura of right side, which was thickened and highly vascular. Lung of same side had a dark and florid aspect: a gangrenously fetid and melanotic-like fluid covered a great portion of inferior and middle lobes: the inferior lobes slightly adhered to diaphragm. A pretty copious secretion of purulent matter, intolerably offensive, has poured out on that portion of diaphragm where adhesion existed, which being removed it was found roughened. Corresponding surface, to the extent of an inch and a half, was of a dark colour, evidently from infiltration and inflammation. Heart: Heart of natural size: on laying open its cavities large portions of coagulated lymph were found filling up the ventricles and passing into arterial tubes. There was considerable deposition of fat on parietes.

Abdomen: Peritoneum pulpy, and crowded with small blood vessels holding florid blood. Omentum contracted, having a considerable accumulation of adipose tissue. Stomach at its greatest curvature had a blush of redness. A lumbricus\* was found in cavity measuring eleven inches in length. The contents of upper portions of intestines were dark coloured and semi-fluid: faecal matters of similar colour were found in colon. Patches of ulceration were discovered in both great and small portions of tube. Lumbrici, varying from two and a half to eleven inches in length, occupied the canal, and were situated both in duodenum, ileum, and colon.

Liver: Gall bladder green externally, and impacted with very green rosy bile, otherwise healthy. Weight of liver two pounds two ounces. Kidneys: Kidneys healthy. Coats of bladder thickened and contracted.

On laying open the spinal canal a good deal of blood was found diffused at inferior cervical and dorsal regions; the neuro-

lemma of cord had a yellowish-like lymph deposited on surface, which appearance could be observed more especially towards its termination. On carefully removing the sheath a beautiful network of vessels was seen ramified throughout the whole length of cord.

CASE 11.—Sara, a fine intelligent and lively boy, ætat. 10, a native of the Soosoo Nation, was received into hospital on the 17th of April, 1839, from on board the Portuguese schooner, "Labrador," affected with glandular swellings of both sides of neck, for which he was treated with iodine ointment, to which treatment they yielded. Bowels regulated by gentle purgatives. A few weeks thereafter he began to lose flesh, his appetite at same time declining. On the 2nd of May he was first observed to drop asleep while eating: on being roused he was seized with a universal tremor, the motions of his head resembling the symptoms produced by inebriation, the eyes bloodshot, pupils staring, look meagre and emaciated. Bowels costive, tongue white and loaded, pulse 84, skin below natural temperature.

Applicentur Hirud., No. xxx. temporibus. Bleeding to be encouraged as much as possible by flannel cloths dipped in warm water, then wrung, and applied as hot as possible, which are to be renewed at intervals.

R Spir. Vini. Rect. ʒij., Aquæ Font. lb. ij. The head to be kept constantly wetted by means of pledgets moistened with the lotion.

R Emplast. Vesicator. from occipital protuberance along the spine.

R Pulv. Jalapæ, gr. x., Calomel, gr. iv. M. Statim sumend.

These active measures, with repeated large doses of oil of turpentine (which certainly brought several worms away) conjoined, and the production of salivation, with the occasional use of the sulphate of quinine, combined with infusion of quassia, alleviated, although they failed to arrest, the progress of the malady, which terminated fatally on the 2nd of June.

Post-mortem Examination two hours after death.—Body much emaciated. Head: Skull cap with great difficulty torn from dura mater, to which it firmly adhered round the corona: about four ounces of blood, mixed with serous fluid, escaped on its removal: the skull itself appeared more than usually dense: minute injection of the arachnoid membrane; great engorgement of the vessels distributed over the convolutions; grey substance of brain of a rather paler colour than natural; choroid plexus pale: serosity between the convolutions. The ganglions of grey substance, corpora striata, and optic thalami, were

\* These parasitical intruders were found alive after removal from body.



softened. In the ventricles a small quantity of fluid was present: the principal arteries at base were enlarged and turgid. *Thorax*: A good deal of serum was found between pleura on opening thorax: the inferior lobe of left lung was found to cohere to superior surface of diaphragm to the extent of a half crown piece, where a yellowish exudation was abundantly poured out, and which was discovered to exist in considerable quantity about root of lung. Surface of lung was rose-coloured, from excessive congestion; on being cut into a reddish-like fluid oozed from every part. Right lung was also much engorged; pericardium collapsed; heart much loaded with fatty deposit, but of natural size. *Abdomen*: Stomach highly vascular between its great curvature and pylorus; intestines presented very considerable traces of inflammation in some points; spleen slightly enlarged; several lumbrici were present in small intestines; liver healthy; gall bladder filled with dark green bile; peritoneum exceedingly vascular; cortical substance of kidneys highly injected.

On sawing and chiselling out the vertical column to its termination, a considerable quantity of blood was found effused over cervical and dorsal aspects. Blood-vessels filled with blood were seen everywhere ramified in an exceedingly beautiful congeries of network over structure of cord.

**CASE III.**—John Silver, a liberated African of the Ackoo Tribe, *ætat.* 14, was sent to hospital on the 9th June, 1839, affected with lethargus, by which he was first attacked about three months previous to admission. When seen by me he lay upon his back in a state of stupor; pulse 90 and full: on application of light to pupil it remained uncontracted: on being roused he articulates with difficulty: he complained that he felt pain at lumbar sacral junction; expression of countenance stupid and vacant; the eye is bloodshot and listless; bowels open; tongue moist, clean at tip, but at base covered with green sordes; respiration natural; skin of natural temperature; slight rigidity of muscles of arm, accompanied by spasmodic motion of the fingers, with occasional slight jactitatory motion of the body; feet cold; says he passed several lumbrici prior to admission; states that he has not made water for many hours previous to admission.

Applicetur Cucurbitula to portion of spine complained of. Head to be shaved, and then apply thereto, so as to cover the scalp—

℞ Emplast. Lyttæ 6 × 4.  
℞ Pulv. Jalapæ. gr. x., Calomel, gr. v. M. Fiat Pulv. No. i. statim

sumend. Let his strength be supported with thin soup, arrow root, and agiddu, to which he is extremely partial.

**Vespere.**—In the same profound coma. Pulse 104, and full; skin hot; medicine has not operated. Flannel cloths to be immersed in boiling water and applied to feet and around ankles; but although the application had the immediate effect of rousing him, the relief was not permanent. The skin was slightly vesicated by the high temperature.

℞ Ol. Terebinth. ℥j., Mucil. Gum Arabic. ℥ss. M. Fiat haustus. Statim sumend.

**June 10th.**—During the night he lay on his back, from which posture he did not move. Blister applied to head has risen well; seven lumbrici, varying in length from four and three quarters to eleven inches, were evacuated: the fæces were of a dark green colour, being intermixed with a considerable quantity of mucus; in the course of twelve hours ℥v. of urine of a very high colour was passed; pain in back gone; complains of pain about left trochanter major, where there is some slight swelling.

℞ Submur. Hydrarg., ℥i., Pulv. Opil., gr. iss. M. Divide in Pil. No. vj. One of the pills every hour.

℞ Tinct. Sapon., ℥i. Embrocation to thigh.

**Vespere.**—Pulse 120, and full; skin hot; ℥iv. of urine of a pale yellow colour passed in the course of eight hours: during the day he would occasionally awake and converse with boys of the same age in the ward.

℞ Subcarb. Potassæ, ℥ij.; Mist. Camphor. ℥ij.; Antim. Tart. gr. ij.; Aq. Font. ℥viij. M. Fiat mistura; cujus sumat cochleare magnum quaque tertîa hora. The skin to be sponged with vinegar and water; pledgets, moistened with water, to be constantly applied to head; bottles of warm water to feet.

**11th.**—Pulse 80; skin cool; tongue clean at tip, but loaded with a grey fur towards base; gums swollen and tender; countenance mild; articulates with difficulty, but returns appropriate answers to interpreter; appetite improved; does not complain of pain; respiration natural. On applying ear to chest, the action of heart was violent, the impulse being extended over a considerable portion.

Pills to be discontinued.

℞ Solut. Chlorid. Sodæ, ℥j.; Aque Font. ℥xv. M. Fiat Solutio, with which the mouth is to be repeatedly gargled. A large blister to the calf of

each leg. The application of cold water to the head to be persevered in. Cold water also to be poured on the head from a tea kettle. Continue Mist. Diaphor.

**12th.**—Pulse 120; skin bedewed with a copious perspiration; blisters have risen well. At the evening visit the countenance was natural, and more lively: during the day he ate some fish, which he appeared to relish.

**13th.**—Makes no complaint; pulse natural and soft; tongue white and moist; extremities cold.

Apply bottles of warm water to feet; cold application to head to be continued; discontinue Mist. Diaphor.

**14th.**—Skin cool; pulse, although quick, is regular; bowels costive.

℞ Ol. Terebinth. ℥j.; Mucil. Gum Arabic, ℥ss. M. Fiat haustus.

**15th.**—Bowels open; evacuated several lumbrici: the discharge consisted of pure bile: the bedding has a urinous smell, from the involuntary discharge of urine.

**16th.**—Urine and fæces passed involuntarily; wine ordered ad libitum, but he continued to sink, and died at 2 o'clock A.M. of the 17th.

*Post-mortem examination five hours after death.*—Emaciation considerable. *Head*: The calvarium and dura mater being removed, the blood-vessels passing between dura mater and brain were found enlarged to the size of a crow's quill; retiform injection of the pia mater; a little serosity between membranes. On slicing the brain, many bloody points were discovered, closely congregated, both on medullary and cortical substances; investing membranes of ventricles highly vascular. Nothing particular in the cerebellum. Spinal marrow not examined. *Thorax*: The lungs were slightly congested, and of a rose colour. Deposited on inner and inferior aspect of left lung there was considerable effusion of yellowish lymph; heart enlarged, having its walls thickened; fibrinous clots were found in auricular and ventricular cavities; its parietes were loaded with fat. *Abdomen*: Stomach, at upper curvature, highly vascular; omentum loaded with fat, having its vessels highly injected with blood; liver, on being cut into, was found turgid with blood; gall-bladder loaded with dark green bile similar to what had passed by stool; intestinal canal contained the same coloured fluid, with here and there hardened scybala; four worms, from four to twelve inches in length, were also found; spleen of middling consistence, between the state of health and degeneration; blood-vessels of kidneys completely gorged with blood; bladder contracted.

**CASE 4.**—Thomas Caperhill, a Creole boy, *ætat.* 14, was admitted into Hospital on the evening of the 6th July 1839, affected with the decided and far advanced symptoms of lethargus. I was informed by the person who brought him to hospital that he was an orphan, his parents having died about six years ago, leaving him to the tender mercies of an individual residing at the village of Wellington, by whom he had been employed to cultivate his farm on the banks of the Quia River, at a distance from the residence of his assumed protector. From the same source I learnt that he had been attacked by the disease about five weeks prior to admission, and that no remedial means had been employed to check its progress. When seen by me he lay upon his back steeped in deep lethargic sleep; expression of countenance fatuous; skin rather hot; pulse small and irregular; tongue (which he had difficulty to protrude) covered at its base with grey sordes; bowels costive; respiration slightly crepitous; impulse of heart heard over a large space; pupils contracted; articulation indistinct and hesitating; spasmodic rigidity of upper extremities; feet cold.

Let the head be immediately shaved, and kept constantly wetted with cold lotion, pouring at intervals a stream of cold water over the head. Blisters to calves of legs. Apply boiling water by means of flannel cloths to feet and round ankles.

This application roused him, but the benefit was not permanent.

℞ Ol. Tigllii, gtt. i.; Calomel, gr. iv. M. Mor. sol. Fiat pil. No. i. Stat. sumend. Bottles of hot water to feet and legs. Let his strength be supported with arrowroot given at short intervals.

**July 7th.**—Blisters have risen well; bowels open, stools consisting of hard and dark coloured fæces; reclines on his back; pulse small, weak, and intermitting; urine discharged involuntarily; the skin around feet and ankles is slightly vesicated, the result of application of hot flannel; extremities cold.

Let the feet and ankles be dressed with ℞ Ol. Lini. Aquæ Calcis. aa. ℥ij. M. Continue cold lotion to head. Apply warmth to extremities by means of bottles of hot water. Wine to be allowed at short intervals.

During the night he expired.

*Post-mortem examination two hours and a half after death.*—*Head*: Skull cap with much difficulty separated from dura mater; a very large portion adhered very firmly to calvarium, so as to be removed along with it. Engorgement of the vessels which ru-



mify in convolutions; general injection of the arachnoid, which was red and thicker than natural. Both cortical and concretionary substances very red. To choroid plexus of left side there was a small hard tumor attached, of an oval shape and of a dark ash colour. Several ecchymotic spots on lateral parts of middle lobes. On the internal and external sides of olfactory groove of left hemisphere there was considerable ramollissement. Vessels ramifying on circumvolutions of cerebellum engorged. Spinal cord much congested; investing membrane of a rose colour. *Thorax:* Lungs were of a light rose colour, and congested every where with dark blood. Heart filled with very dark coloured blood. *Abdomen:* Omentum loaded with fat; minute injection of peritoneum; liver much gorged; gall bladder filled with very dark tarry-like bile; intestines filled with matter of a very dark green colour, being mixed at lower portion with hardened scybala; several lumbrici were also found among their contents. At upper third of jejunum there was an ecchymotic spot about the size of a half-crown piece; kidneys much loaded with fat, the cortical substance being engorged.

*Autopsia of a boy of the Bacongo tribe, et. 16, who died 14 days after admission to hospital, but whose case I did not note down.*

*Head:* Calvarium being removed, a great quantity of very dark coloured blood escaped. The dura mater was infiltrated with some fluid, which absorption failed to remove; glandulae paechioni enlarged; effusion of lymph over arachnoid membrane. On slicing the brain streaks of blood were observable; the ventricles were filled with bloody serum; choroid plexuses were turgid, small vesicles appearing on their structure. Over the corpora striata blood-vessels ramified in arborescent form; the circle of Willis was well marked, from the great turgidity of vessels; a netting of blood-vessels stretched over the pons varolii; the cerebellum and its coverings were equally congested. *Thorax:* On opening the thorax both lungs were found engorged; considerable adhesions to pleura costalis; pericardium collapsed; the heart was enlarged, its walls being thickened. On making a section through right ventricle, fibrinous clots three inches and a half in length were discovered, of very dark coloured blood; coagula filled the auricles.

*Abdomen:* On opening the abdomen, the liver was found enlarged and of a purple tint, some parts of its structure being infiltrated with bile. The gall bladder was distended with bile of a tar-like consistence and colour. The omentum was contracted and thickened, tinged of a yellow hue; the stomach contained a glairy fluid, the mucus being dotted over with grumous coa-

gula; the duodenum was also much studied; intestines being removed from body, washed, and slit open were found filled with lumbrici and hardened scybala; spleen softened; kidneys were normal; bladder thickened, and distended with urine.

In the case of a boy, et. 14, of Akoo tribe, who was admitted to hospital on 2d September, 1839, and who had been ill for six weeks prior to admission, dissection revealed sanguineous infiltration of cerebral substance, thickening of dura mater, and several spots of a black colour scattered over its structure. Along the course of longitudinal sinus it was marked of a brownish blue colour. Lungs were found with tubercles in first stage; hypertrophy of walls of heart. Several lumbrici were found in the intestinal canal, at its upper portion.

Dr. Copland, in Part II., section 25, page 345, of his valuable Dictionary, observes that in the dark races of man, worms, especially lumbrici, in the intestinal canal, are frequently connected with the origin of many maladies of remote but related organs; affections of the stomach, diarrhoea, colicky pains, &c. &c. very often arising from this cause. Those parasites, it will be noticed, were found in great numbers to be present, both during and after life in those cases.

In conclusion, I hope it will be conceded, that if the practice pursued in those cases proved unsuccessful, that circumstance may with propriety be accounted for from the advanced stage to which the disease had arrived prior to admission, or to its being subjected to medical treatment.

In Mary Coker's case the right lung weighed 14½ oz.; left lung, 5 oz.

In the case here alluded to the weight of brain was 3 lb. avoirdupois; liver, 2½ lb.; spleen, 9 oz.

AN INQUIRY INTO SOME OF THE CONSEQUENCES AND CAUSES OF FAILURE OF THE NEW OPERATION FOR THE CURE OF STRABISMUS OR SQUINTING.

By E. W. DUFFIN, Esq. Surgeon.

[For the London Medical Gazette.]

[Continued from page 243.]

MUCH diversity of opinion certainly prevails in regard to the functions of the oblique muscles of the eye; but if

we dissect them with very great care to their insertions, we must admit, whatever else we may call in question, that the direction of their fibres, as well as their ultimate attachments, warrant the conclusion that the function of the superior oblique is to roll the eye inwards and downwards, and that that of the inferior is to rotate the organ in the opposite direction. When both muscles contract at the same time, the effect will be to bring the eye forwards, and render it a little more prominent; thence proceeds one of the common results—increased fullness of the eye, when the adductor is divided.

But in what manner the superior oblique can assist in rotating the globe upwards and inwards, as Sir Charles Bell, Dr. Franz, and others have imagined, I am at a loss to comprehend. Were it indubitable that Dr. F. divided the tendon of the superior oblique in his operation, the result he relates would, of course, be conclusive that this muscle does by some means or other contribute to the performance of the movement in question.

The following case, an exceedingly instructive one, affords ground for believing that the only muscles requisite to enable the eye-ball to move diagonally upwards and inwards, i. e., towards the nasal process of the frontal bone, are the superior rectus and the adductor; although it is possible that the superior oblique, by rolling the globe downwards and inwards, may contribute slightly, in some individuals, in causing the pupil to approximate the inner canthus, but certainly not in directing it upwards. A man presented himself for operation who squinted in a most remarkable degree with the right eye, in the manner we have been discussing, viz., upwards and inwards; so much so, indeed, that, when the eye was at rest, fully a fourth part of the cornea was concealed from view. The gentlemen who examined this case previous to operation, viz., Dr. J. C. Williams, Mr. J. N. Thompson, of Nottingham, and Messrs. Smith and Walker, surgeons in the immediate neighbourhood of that town, were all convinced that either the superior or inferior oblique muscle was implicated in producing the deformity. From what I had experienced in similar cases, I was of opinion that the position of the eye proceeded from the conjoint operation of the superior rectus and adductor only,

the former pulling the globe upwards, whilst it was unnaturally tethered or bound down by the latter. On dividing the tendon of the adductor, and completely liberating the eye from all confinement on its inner aspect, it immediately darted directly upwards, so that one-third of the cornea was concealed under the superior palpebra, and the pupil was restored to the natural central line, but, of course, much above its proper situation. In this position the eye remained fixed, unless the patient made an unusual effort to look downwards, which he could never so effectually accomplish as to make the axis of the two eyes correspond, and obviate double vision. On the third day after the first operation I divided the tendon of the superior rectus by cutting down upon it anterior to where that of the superior oblique passes under it. This I did in the manner that I usually perform the operation on the adductor, by inserting a flat blunt hook underneath, and then snipping it across with a pair of scissors. The pupil immediately afterwards descended to its proper position in the centre of the orbit, vision became single, and the case went on satisfactorily in every respect afterwards. I have met with numerous other instances of precisely the same description, as regards the direction of the pupil upwards and inwards, but never in any other case found it necessary to divide any thing but the tendon of the adductor, and to liberate the eye from such abnormal connections as I have described, that tended to confine its inner aspect. When in the course of an operation, after cutting across the band of tendinous fibres by which the adductor muscle is inserted, the eye has been turned upwards and inwards, or in the contrary direction downwards, and towards the nasal canthus, I have always found some adventitious adhesion to be the sole cause of the movement, the contraction of the superior or inferior rectus not exceeding that which was natural to them, but productive of an irregular effect because exerted on a tethered globe.

We have stated that one of the immediate effects of the operation is a trifling projection of the eyeball; the extent, however, to which this occurs is very variable, and depends, I conceive, much upon the manner in which the division of the tendon has been accomplished.