blood corpuscles; the function of nutrition is disturbed, and the colorless corpuscles accumulate in a special manner in the capillaries of the skin, for the purpose of being eliminated from the body, this end being accomplished by the formation of an excess of epithelium, which peels off at the termination of the disease. But a patient may have scarlet fever without any redness of the skin, or there may exist more or less eruption on the surface of the body, and yet no exfoliation of the cuticle; it is thus the primary febrile symptoms of the disease may appear and subside. The patient seems to be fast getting well, but, as the abnormal blood corpuscles are still circulating in the blood, these appearances ought not to be relied on. They are, perhaps, insidiously accumulating in some of the glandular structures, laying the foundation for future scrofulous disease, forming tubercles in the lungs, or, if none of these things are taking place, their presence is shortly proclaimed by symptoms of dropsy; they are, as it were, thrown upon the kidneys, and produce a true inflammation in these organs, according to the terms of the preceding theory, for both the red and the colorless corpuscles are passing through the tissue, denoted by their presence in the urine.

These views of the phenomena of scarlet fever give the reason why it usually happens that it is those cases which present the mildest primary symptoms that are attended with the graver lesions afterwards, for the disease can never be considered as having terminated satisfactorily unless there has been a more or less copious exfoliation of epithelium. And what are the practical measures which the theory points out in those cases in which the natural effort has been insufficient—those in which the secondary symptoms arise? *Bleeding*, for the purpose of diminishing the amount of the colorless blood corpuscles in the circulation, and (by diminishing the volume of the blood) to recal into the current of the circulation many of those corpuscles which have become stationary in the oppressed and disordered tissues. *Emetics and brisk cathartics*, to remove all the worn out epithelium from the mucous tract of the alimentary canal, and, by their stimulant properties, to urge these tissues to renewed exertions in expending the accumulating colorless blood corpuscles to form new epithelium. *Baths and friction* to the skin upon the same principle; these measures being conjoined with, or followed up by, *pure air, exercise, appropriate diet, and invigorating tonics*. The extension and adaptation of these views to many other specific, inflammatory, or abnormal nutritive diseases, will readily occur to the mind of the experienced practitioner.

In the first series of these Researches it is stated that the colorless blood corpuscles imbibe water and increase in size, during which the outline of the central portion disappears, and the corpuscles are seen filled with molecules. The author now says that if a very dilute solution of acetic acid be added to the corpuscles, thus enlarged and altered by water, the central portion becomes corrugated, and collapses, appearing in the interior of the transparent outer tunic, or integument, either as a single more or less irregular shaped object, or as three or four separate bright granules; if, on the other hand, to corpuscles enlarged and altered by water, a similarly weak

alkaline solution be added, its effect will be to enlarge the corpuscles still more, and render the molecules within still more conspicuous, after which they burst open with considerable force, discharging a quantity of molecular matter, and a multitude of distinct molecules or granules. "Hence," the author observes, and to this remark we would invite particular attention, "the colorless blood corpuscles are among the most delicate tests we have of the acidity or alkalinity of the fluids with which they come into contact, and their vital functions, as well as their visible appearance, must be correspondingly modified."

Neither of the solutions above referred to could be discriminated by the taste from pure water, the acid hardly perceptibly; reddened litmus and the alkali was in a similarly dilute condition.

The author concludes his paper by remarking that the solidist and humoralist can neither of them maintain exclusive views, and the most philosophical course is to merge all differences on these topics in a vigorous prosecution of minute microscopical anatomy. As regards the forthcoming phases of medical opinion, the chemical investigator must necessarily fail of practical utility in the treatment of disease, if, by relying too exclusively upon the laboratorial results of his researches upon the metamorphosis of the living tissues, he overlook the fact that every product of vital action is the result of cell life. No reasoning from mere chemical principles can be made the basis of medical practice, to the entire exclusion of the varied and incomprehensible changes and combinations wrought upon the same materials by life. So, on the other hand, if the mere microscopical observer closes his eye upon the brilliant results of chemical science, the sphere of his usefulness will be equally contracted and obscure; whereas, by union and co-operation, harmony of result must ensue, and medical science will emerge from her present unphilosophical position.

CASE OF TUBERCULAR DEPOSIT WITHIN THE CRANIUM OF AN ADULT.

By HENRY SNOWDEN, Esq.

On the 28th of April last, was called to attend Mr. M., aged thirty-eight, for an hæmoptysis. He had had pulmonary complaint for some weeks previously, and presented the usual symptoms of tuberculous disease of the lungs. Had been a member of a temperance society for six years, and was a strongly built, muscular man. The usual treatment was employed, and after the first visit there was no return of the hæmoptysis. However, the chest symptoms grew worse, the cough was very troublesome, he had profuse night sweats, and he became emaciated.

In the early part of June he noticed that his memory failed him, and at times he was slow to reply, as if it required an effort to collect his ideas. There was no complaint of headache, and he attributed these symptoms to anxiety concerning his family affairs, which, during his illness, had given

him much trouble. On the 14th of July, on which day he was more cheerful, and seemed better than usual, he went into the country. On the 24th he returned home, and when I saw him he had all the symptoms of serious disease within the cranium. He was incoherent; his countenance was anxious; pupils dilated; extreme restlessness; pulse 120, and small. The next morning he was comatose; there was a constant twitching of the muscles; pulse 130. In the evening he was partially sensible when roused, and became very restless, constantly tossing his arms, or drawing up the bed-clothes about him. On the 25th there was coma, alternating with slight delirium; the restlessness and muscular tremors continued. From this day to the time of his death, which took place on the night of the 31st, he was not visited by me. The friends report that the symptoms continued the same, with increase of coma, and that there was no paralysis.

The body was examined fourteen hours after death, in the presence of Dr. Sandwith, who had seen the case with me during life.

There was considerable emaciation. In the head, the arachnoid membrane covering the upper surface of the hemispheres was here and there opaque, and a large quantity of fluid was contained in its great cavity. The pia mater was much injected. At the upper part of the left hemisphere, beneath the arachnoid and pia mater, and extending over a space occupied by five or six convolutions, were many white grains of tuberculous matter; at one point, on the margin of the great fissure, these were aggregated into a mass of the size of a bean. Beneath this the brain was softened, the softening being confined to the grey matter. The brain was generally vascular, but there was no other diseased appearance.

The lungs were studded with tubercles, some of which were in an advanced stage of softening. The mesenteric and bronchial glands, and the glands of the neck, were loaded with tuberculous matter.

Hull, August 14, 1843.

CASE OF FILARIA MEDINENSIS, OR GUINEA WORM.

TO THE EDITORS OF THE PROVINCIAL MEDICAL
JOURNAL.

GENTLEMEN,—As we have not frequent opportunities of observing this species of entozoa in our own country, perhaps you may not deem the following case unworthy of a place in your valuable Journal.

John Stavely, aged twenty-four; dark hair, and rather fair complexion, and a seaman in the merchant service, arrived at Cape Coast Castle, on the coast of Africa, in June, 1842. He remained at this station sixty-five days, during which period he was once on shore for about three hours. He wore no shoes, and found the sands and rocks so hot that he could not with impunity put his feet on the ground. Whilst on board, a considerable number of the Africans visited the ship every day. He saw many of them affected with Guinea worm, several of whom had leaves bound round their legs with shreds of the rind of trees, to cover the orifices caused by these worms, which discharged a good deal of matter.

Stavely thinks that he got his Guinea worm in the hold of the vessel, whilst stowing the palm oil casks

amongst the branches and leaves of trees. He enjoyed good health, excepting that he had a sore on the outside of the right leg, occasioned by a small boil.

He returned to England in August, and arrived at Southampton the 14th of October. He continued well throughout the voyage, and also after his arrival in England, till about the middle of May, 1843, when he perceived a sore on his left instep, which he attributed to a gall from his shoe; this continued with little pain or inconvenience in the form of a pustule for about a fortnight. It now became as large as a fourpenny piece; and out of its centre protruded a white cord-like substance about the size of a violin string.

Being on board the *Monarch* steamer, he showed it to the steward, who thought it a strange appearance. He then cautiously pulled it out of the pustule to the length of five inches, and cut it off.

The next day erysipelatous inflammation commenced, and gradually extended over the upper part of the foot and half way up the leg. He was now brought home, and placed under the care of Mr. List, surgeon, of this town. Several small abscesses formed in the course of the inflammation, all of which were opened; and in about seven days Mr. List succeeded in extracting the remaining part of the worm from the primary sore on the instep. The length of the worm was two feet and a half.

On the 23rd of May he perceived on the anterior part of the lower third of the left forearm a pustule similar to that which had formed on his left foot. As the pustule itched, he scratched off the point with his nail. This led him to discover a thread-like substance, which, upon being drawn out, proved to be the extremity of another filaria. It was distinctly seen to move, and became larger in circumference as it was cautiously drawn from the sub-cuticular tissue.

On the 27th of May, by the kindness of Mr. List, I was permitted to see the case. Erysipelatous inflammation had taken place in the leg; and a considerable length of the worm had been wound around a piece of rag, and was confined close to the orifice, from which it was gradually being extracted. The track of the worm can be easily traced under the cutis by the finger, and in its course several small abscesses are forming, which are attended with pain and itching. The worm, upon being drawn a little out, is round in form, about the size of the bass string of a violin, white in color, of gelatinous structure and appearance, and of sufficient tenacity to bear cautious traction.

It was extracted little by little every day, and wound upon the rag, till, in about a fortnight, it was all withdrawn. This worm measured thirty-two inches in length. Its head had been scratched off with the pustule which first formed on the arm; but its tail was perfect, tapering to a point, as in the lumbricus. Its surface appeared to be smooth, but upon examining it through a powerful lens, it was found to be made up of minute transverse rugae.

The inflammation subsided soon after the extraction of the entozoon, and although it had extended over a large space both of the leg and the arm, the system was but little disturbed by it. The urine, indeed, was high colored, the tongue somewhat white, but the pulse did not exceed 84 in a minute. The tortuous track of another worm can be felt and seen under the