CASE II.

A Chinese coolie, aged 30, was admitted to hospital on September 20th.

His illness had begun two years earlier with skin trouble of the right hand. About six weeks ago the left hand and both feet became similarly affected. He had had no other illness, but had suffered great privation of recent years. There were no signs of syphilis.

The patient was emaciated. The thoracic and abdominal organs were healthy, and the urine free from albumen and sugar.

On the right upper extremity the skin on the dorsal surface of the fingers, the hand, and the forearm to just a little above the elbow, and the fingers, presented an excoriated appearance with black pigmentation and thickening of the edges of the excoriated surface. There was a small patch of erythema on the flexor aspect of the limb extending just across the wrist-joint. The nails presented a remarkable appearance. They were partially destroyed; the stumpy remains of them were greatly thickened, heaped up, and irregular in outline. On the left side there was a dusky erythema on the extensor aspect of the limb, extending from the fingers to a little above the elbow. There was no apparent heat and no swelling of the part. Sensation to touch and temperature was absent over the whole area above described. Pain sensation was present. Motor power was normal.

The left lower limb on its extensor aspect from the foot to the knee presented a patchy erythematous appearance, as did the dorsum of the right foot. The sense reactions on the lower limbs, over the affected areas, were similar to those on the upper limbs. The knee-jerks were absent.

CASE III.

A Malay fitter, aged 23, had suffered from malarial fever a year or so ago. His present illness began about six weeks ago with tingling sensations in hands and feet. When seen by me about September 15th the dorsal surfaces of the hands, forearms, and feet presented a dusky, erythematous appearance. The zone of junction of skin and mucous membrane around the mouth had a similar appearance. Tactile sensations were absent over all these areas. Pain sensation was present. Temperature sensation could not be tested. The knee-jerks were present. This patient was under the care of a private doctor, to whom I am indebted for permission to include the case in my list. He was treated with tonics and rest. No blister formed in the erythematous areas. The skin cracked in many places. When last I saw him sensation was returning over the previously insensitive parts.

This form of neuritis is, as far as my observation goes, far from uncommon in the Straits Settlements. It would be of interest to ascertain whether it has been observed elsewhere. As to its causation, I can only repeat what I stated in 1905—that a lowered vitality, whether this result from syphilis, beri-beri, privation, or any other cause, seems to play a prominent part. In the three cases above recorded it will have been noticed that one patient had had virulent syphilis, another had been the subject of great privation, and the third had had malarial fever.

The symmetrical and wide distribution of the lesions suggests an origin in the central nervous system, possibly in the ganglia of the posterior roots.

In the BRITISH MEDICAL JOURNAL of February 22nd, 1908, Mr. G. Lenkhal Cheatle raised the interesting question whether cancer may be rendered possible only when there is a disturbance of the nerve supply of a part.

The comparative frequency with which cancer of the extremities is found located on the dorsal surfaces of the hands and feet, taken in conjunction with the possibly frequent occurrence of such trophic lesions as I have described, would seem to lend some confirmation to Mr. Cheatle's views.

I am indebted to the Principal Civil Medical Officer for his kind permission to publish these cases.

THE annual dinner of the medical students of the University of Liverpool will take place at the Adelphi Hotel on Saturday, December 19th, when the chair will be taken by Mr. Robert Jones, F.R.C.S.E., at 7.30 p.m. Tickets, 7s. 6d. each, and all further particulars can be obtained from the Honorary Secretaries, Mr. A. Adams and Mr. S. V. Tinsley.

WE notice that of the candidates who presented themselves for both parts of the Final Examination for the M.B., B.S. degree of London University in October, and were successful, as many as 18, or over 25 per cent. of the total were students of the London School of Medicine for Women. One of them was awarded honours in pathology. The University medal was borne off by a student of Guy's Hospital, Mr. H. O. Brookhouse, who was awarded honours in three subjects—medicine, surgery, and midwifery and diseases of women.

A NOTE ON THE ETIOLOGY OF BERI-BERI AND THE PRESENCE OF ARSIN IN RICE.

By C. N. SALDANHA, M.D.,

FORMERLY MEDICAL EXAMINER OF STATUTORY INDIAN EMIGRANTS.

THE medical officer of health for the Witwatersrand, Dr. Sansom, recently reported as follows to the Transvaal Health Department:

When importation of Chinese coolies was sanctioned a Government department was organized to deal with these labourers, called the Foreign Labour Importation Department, and I was appointed medical officer. In that capacity I was called upon to deal with the outbreak of beri-beri amongst Chinese in the Transvaal.

My reports show that up to date there have been 880 serious cases of beri-beri, and of these 120 proved fatal. Nearly all these cases occurred amongst the first shiploads arriving here recruited in Southern China, being mostly Cantonese. The disease showed itself very shortly after arrival here, and those who had to deal with these cases are convinced they were not recent ones, but that the disease had been dormant for some time, and that altitude and arduous labour made it disclose itself.

Beri-beri amongst these coolies was so severe, and treatment having failed to do any good, it was decided to repatriate sufferers, many of whom showed marked improvement directly they reached sea level; the most prominent symptoms were tachycardia and heart failure.

After this outbreak recruiting was stopped in Southern China; since then very few cases are notified to me amongst those coolies shipped via Tientsin.

The dietary scale on the mines is liberal, well-cooked, and of very good quality. I have taken samples from time to time, and the Government analyst has always given me a very satisfactory report on them; the rice is "cured" rice, and of very good quality.

I considered it advisable to have all the premises thoroughly disinfected after removal of beri-beri cases.

I cannot say what kind of rice the diseased coolies were in the habit of eating before they came here, but some people have told me that the rice in Southern China which the lower orders consume is unsatisfactory.

My investigations do not lead me to think that beri-beri originates here.

Since attention has been paid to the rice, and the coolies have been restricted to "cured" rice only, there has been practically no beri-beri during the last four years, though the number of the Chinese has increased to 50,000 or 60,000.

Rice, as harvested and with the husk still on, is called "paddy"; rice exhibits more varieties than any other known grain, and incidentally is subject to many ailments. Among them is a fungoid disease, which causes beri-beri in man, the active principle of which I have called "arsin."

In the process of curing rice, arsin undergoes fermentative changes, and is rendered inert and innocuous. If, out of a stack of diseased and arsin-containing paddy, one half be prepared as rice for the market by the "cured" process and the other half be converted into "uncured rice" by machinery, the cured rice will be comparatively safe, whereas the uncured will contain active arsin, mostly in the rice dust, which is simply fine bran not removed by winnowing, but bagged with the rice for the market.

Uncured rice has a more pearly and otherwise more attractive appearance than the cured; the custom is to pass the rice direct into the cooking pot as bought from the shop, dust and all. The poorer classes among the Chinese consume not only the rice but also the water in which it is boiled, which would contain most of the dissolved arsin. Hence beri-beri is generally prevalent among the poor Chinese, Malay, and other Mongolian races, who habitually use uncured rice. And at each meal they take unwittingly a small dose of arsin when their rice supply comes from mildewed paddy.

In some cases it causes diarrhoea, and the poison is probably thereby eliminated. The natives ascribe the diarrhoea to eating new rice. Generally toleration soon becomes established, and when the use of diseased uncured rice is persisted in, beri-beri results.

Arsin-containing rice emits an alliaceous odour when boiling. The fumes inhaled cause a pleasant sensation of fullness and exhilaration, somewhat resembling the effects of minute doses of alcohol. Arsin is a cumulative poison. In its initial action it is a cardiac sedative. In sows fed on the bran of the diseased rice oestrus is retarded,

and they generally become unfertile. The bran and the rice dust consist of the desiccated reddish-brown inner capsule of the white rice seed, and it is this capsule that is primarily affected by the beri-beri fungus.

Beri-beri is said to stick to certain ships and localities. The truth is that once diseased rice gets into a bin the rice dust sticks there, and infects subsequent stocks of rice coming from clean sources.

Beri-beri is neither contagious nor infectious any more than is alcoholic or arsenical paralysis, with both of which it has certain points of resemblance.

The neuritis in beri-beri is quite secondary, and very often in its earlier stages is of a transient character. The constant factor in the disease is vasomotor paralysis of terminal branches with tendency to chronic congestions of organs, in which they ramify.

I have already alluded to diarrhoea as an initial symptom, and occasionally, though rarely, the brunt of the malady in the last stages of the disease also seems to fall upon the alimentary tract. There are frequent discharges from the bowels, which soon become free of all faeculent matter, and then the discharged fluid, sometimes a pint or more at a time, looks just like water in which beetroot has been boiled. This may be called the haemorrhagic form of beri-beri, and is the most fatal.

The mortality-rate in beri-beri cases cannot be easily ascertained, as in any epidemic some are fresh cases, others are relapses—it may be the first, second, third, or fourth. Relapse is the rule in the disease. If the first attack does not kill, subsequent attacks will do so. There is no cure for beri-beri, though treatment may cure an attack as it does a bout of gout.

Among dietetic measures, pineapple juice seems to be of use. Tea and stimulants seem to mask the effects of arsin, and when systematically withheld from a staple diet of uncured rice, an epidemic of beri-beri is the usual result. Depressing circumstances favour the onset of the disease, so it has come to be considered as a disease of the coolie poor, just as scurvy was in the sweating days of old ships.

The morbid processes in beri-beri are distinctly biolytic, and when through accident of circumstance beri-beri and scurvy coexist together, the symptoms of each become intensified, and the prognosis of the complicated disease is grave indeed. But in its origin beri-beri is quite distinct from scurvy, and for an analogy we must look to ergotism through eating diseased rye bread.

Convulsions are unknown in the uncomplicated beri-beri, even in the haemorrhagic type. Lowered mentality and general despondency is characteristic of the disease throughout. Any exuberance of spirits or any improvement in that respect is a hopeful sign, and indicates the commencement of returning health. In some cases the temporary recovery is speedy; in others the paralytic symptoms persist for some time, it may be for months.

When for any reason uncured rice has to be used as a staple article of diet—Chinese always prefer the uncured to the cured rice, as the former has a more pearly appearance and makes a better show when cooked—wash the rice in cold water till the water ceases to be cloudy before putting it into the pot to boil, and skim while boiling.

These two procedures will remove most of the rice dust always to be found bagged with market rice.

The water in which the rice has been boiled must not be consumed, as it would hold in solution some of the arsin in the rice as bought from the shop. As the cookery books say, in properly cooked rice each grain must be separate.

The way the Chinese coolies cook rice is to make a sort of porridge, and they eat it as they would pea soup. Rice is also eaten raw in India in the form of beaten rice with a little cold milk and sugar to sweeten it. Beaten rice has the appearance of crushed oats, but is darker, having a full terra-cotta colour, the whole of the reddish-brown capsule being incorporated with the white starch seed by the beating process. Here, also, fermentation is complete, as in cured rice; and arsin, if present in the paddy, is rendered inert thereby.

These investigations were first conducted with Tamil assistants among Tamil people; Tamil for rice is "arsi"; the name "arsin" for the poisonous ingredient suggested itself.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PELVIC "BLOTCHES" AND THE ROENTGEN RAYS.

LAST year I contributed a short article to the BRITISH MEDICAL JOURNAL concerning "phleboliths" and the Roentgen rays. With improved technique still other shadows appear which by some observers have been referred to as pelvic "blotches." These "blotches" I have noticed frequently in a good pelvic roentgenogram.

In my experience they have only occurred in males, and they always occupy the same area—namely, a line drawn from the spine of the ischium to the symphysis pubis. They may be bilateral or unilateral, and vary in size from a hempseed to a broad bean.

It seems most probable that these shadows are cast by calcareous deposits in the vesiculae seminales, and in a recent case such deposits could be distinctly palpated on making a rectal examination on a case in which these pelvic "blotches" appeared.

Again, I have had the privilege of discussing this question with Professor Watson of Adelaide, and he is firmly convinced that this interpretation is correct; and he further states that frequently has he discovered such deposits *post mortem* in the vesiculae seminales surrounding a cystic dilatation.

These shadows might easily be mistaken for vesical calculi, and no doubt have very often been interpreted as such. Such a mistake may be avoided by remembering the constant position of these "blotches," and also the fact that generally vesical calculi occupy a central position.—I am, etc.,

L. HERSCHEL HARRIS, M.B., Ch.M.Syd.
Honorary Assistant Surgeon and Honorary Skiagrapher,
Sydney Hospital.

ANILINE DYE IN THE URINE.

THE following case seems to be of sufficient interest to record. A female child aged 12 years was brought to me, with a specimen of her urine, which was in colour a deep emerald green, but perfectly clear except for a deposit of mucus. There were no symptoms, though a natural anxiety was shown. The history was as follows. For a week the child had off and on passed this green urine. I discovered that she had been in the habit of helping herself at odd times to a considerable amount of her particular favourite variety of sweets. These proved on inspection to be "satins," ornamented with greenish lines, which gave a greenish stain when dissolved in water.

Mr. S. R. Trotman, the city analyst for Nottingham, very kindly analysed both the urine and the sweets, and found a large amount of green aniline dye.

There has been no recurrence of the condition since the destruction of the entire stock of sweets.

J. BERNARD THOMPSON, M.R.C.S., L.R.C.P.
Ruddington, Notts.

INSUFFLATION IN THE NEWLY BORN.

IN May, 1908, I attended a patient in her third confinement. The presentation was vertex, and the pelvis was of the small round type. As in the patient's two previous confinements I had to use forceps, and even then delivered with great difficulty.

The infant, a girl, showed no sign of breathing, and artificial respiration was tried for some minutes without any success. As a last resource I raised the infant in my arms and blew vigorously with her open mouth pressed to mine. I then compressed the thorax, after waiting a few seconds. After repeating these two actions three times, I was delighted to see the child inspire voluntarily. After a hot bath she settled down to breathe quite easily, and at the present date is a strong and healthy baby.

Manchester. O. H. Woodcock, M.B., Ch.B.

THE Royal Infirmary, Sheffield, has received a gift of £500 under the will of the late Mr. Joseph Tinker Dobb, chemist, drysalter, and steel manufacturer, of Sheffield.