CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE YEAR ENDED 30TH SEPTEMBER 1893.

45th and 46th Issues.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

SHANGHAI:
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National Oceanic and Atmospheric Administration

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December 20, 2000

INSPECTOR GENERAL'S CIRCULAR No. 19 OF 1870.

INSPECTORATE GENERAL OF CUSTOMS,

PEKING, 31*st December* 1870.

SIR,

1.—IT has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, etc. / Alteration in climatic conditions. }

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality. }

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. ALEX. JAMIESON, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 30th September—that is, for the Winter and Summer seasons.

4.— * * * * *

I am, etc.,

(Signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS,—*Newchwang*, *Ningpo*,
Tientsin, *Foochow*,
Chefoo, *Tamsui*,
Hankow, *Tainan*,
Kiukiang, *Amoy*,
Chinkiang, *Swatow*, and
Shanghai, *Canton*.

SHANGHAI, 15*th May* 1895.

SIR,

IN accordance with the directions of your Despatch No. 6 *A* (Returns Series) of the 24th June 1871, I now forward to the Statistical Department of the Inspectorate General of Customs, the following documents:—

Report on the Health of Chungking, pp. 2, 3;

Report on the Health of Pakhoi, pp. 8–11; each of these referring to the year ended 31st March 1893.

Report on the Health of Tientsin, p. 1;

Report on the Health of Wenchow, p. 21; each of these referring to the half-year ended 31st March 1893.

Report on the Health of Wuhu for the eighteen months ended 31st March 1893, pp. 4–7.

Report on the Health of Chefoo, pp. 22, 23;

Report on the Health of Shanghai, pp. 34–38; each of these referring to the year ended 30th September 1893.

Report on the Health of Ichang, pp. 24, 25;

Report on the Health of Kiukiang, pp. 26–28;

Report on the Health of Wuhu, pp. 29, 30;

Report on the Health of Wenchow, p. 31;

Report on the Health of Foochow, pp. 32, 33; each of these referring to the half-year ended 30th September 1893.

Notes on Diseases in North Formosa, pp. 12–20.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,

PEKING.

The Contributors to this Volume are:—

A. IRWIN, F.R.C.S.I. ..... Tientsin.

JAMES H. MCCARTNEY, M.D. ..... Chungking.

ROBERT H. COX, L.R.C.P.I., L.R.C.S.I. ..... Wuhu.

A. SHARP DEANE, L.R.C.P.I., L.R.C.S.I. ..... Pakhoi.

ALEXANDER RENNIE, M.B., C.M. ..... Tamsui.

J. H. LOWRY, L.R.C.P.Ed., L.R.C.S.Ed. ..... Wenchow.

E. W. VON TUNZELMANN, M.B., M.R.C.S. ..... Chefoo.

E. A. ALDRIDGE, L.M.&L.R.C.P.I., M.R.C.S. ..... Ichang.

GEORGE R. UNDERWOOD, M.B., C.M., L.R.C.S.Ed. ..... Kiukiang.

T. RENNIE, M.D., CH.M. ..... Foochow.

R. ALEX. JAMIESON, M.A., M.D., M.R.C.P. ..... Shanghai.

DR. A. IRWIN'S REPORT ON THE HEALTH OF TIENTSIN

For the Half-year ended 31st March 1893.

DURING the period under notice the health of the foreign community has been very good.

Two deaths occurred, one from puerperal convulsions and one from malignant scarlet fever.

A mild epidemic of influenza prevailed among the infantile portion of the community.

I append an extract from Dr. ROBERTSON'S health report on Tongshan for 1892. Dr. ROBERTSON, in his annual report on the working of the Tongshan Hospital, reports favourably on the health of the foreign residents.

In the early part of 1892, chiefly in February, and following in the track of influenza, which was epidemic both among foreigners and Chinese, a severe form of tonsillitis broke out among the coolie class, the throat affection in most cases being attended with unusually high fever and the congestion being so great as to cause severe dyspnœa. Both tonsils were usually affected and covered with a thick, tenacious secretion, diphtheritic in appearance, which failed to yield readily to treatment.

One foreigner succumbed to typhus fever.

Five births are recorded among the foreign residents; and during the summer two infants died from dysentery.

Dysentery, although prevalent among the coolies, was not so severe as in former years; and it is to be hoped that, owing to waterworks having been established and a main laid on to the village, dysentery and diarrhœa will be much less rife than formerly.

A comparison of the maximum and minimum temperatures between Tientsin and Tongshan was kept during June and July, and shows a lower temperature, on the average, in Tongshan.

The attendance at the out-door department of the Tongshan Hospital has increased considerably; and during the past year many accidents from the coal-pits and railways have been treated in the wards, where several operations have been performed.

It is to be hoped that the Imperial Railways extension to Shanhaikwan will afford facilities for the opening up of a seaside health resort for the Tientsin and Peking residents. Yang-ho-k'ou, a small port situated 15 miles south-west of Shanhaikwan, is suggested as a suitable spot, as it possesses a fine sandy beach and good water supply, and is only about 3 miles from the railway station, which can be reached in a little more than half a day from Tientsin.

DR. JAMES H. McCARTNEY'S REPORT ON THE HEALTH OF CHUNGKING

For the Year ended 31st March 1893.

IN beginning my brief Report, I wish to reaffirm what I have previously said, that Chungking, from its natural position, is more healthy than the average Chinese city.

There has been an unusual amount of sickness during the past year among both natives and foreigners. When foreigners fall sick here the cause, however, is generally other than climatic.

One foreign death occurred during the year (from cholera) and one birth.

The Customs staff has, as a rule, been healthy, with the exception of one member, who, having had cholera followed by chronic diarrhœa, was transferred, as a matter of necessity, to another port.

The diseases most prevalent in the Chungking district are the different forms of lung lesion, of which emphysema, bronchitis and phthisis constitute at least 99 per cent.

The contagious diseases commonly observed are small-pox, measles and chicken-pox. Typhoid is unknown. All forms of malaria are present, but that most frequently met with is a pernicious intermittent, which is very fatal among the natives.

Skin diseases, chiefly the different forms of tinea and itch, are common. I have seen four or five cases of lichen scrofulosus and three or four cases of leprosy; two of the latter were of the tuberculous and the others of the anæsthetic form. These were the only cases seen among several hundred skin patients. They did not remain long under treatment. The cases of lichen scrofulosus yielded readily to iodide of potassium internally and tar ointment externally.

Malarial diseases are most prevalent during autumn and winter.

In July and August the city was visited by an epidemic of cholera, the first for five years. The cause, no doubt, was the filthy condition of the streets and the extreme dampness and heat of the atmosphere. Reports vary as to the mortality, some placing it as high as 1,400. Among the foreigners there were three cases, with one death. I had about 20 cases, with 50 per cent. of recoveries. The treatment found most satisfactory was drachm doses of compound opium mixture (Squibb), and in case of collapse, hypodermics of ether and the hot pack. The disease always proved fatal in opium-smokers.

During the year some interesting surgical cases were under treatment.

I.—A boatman some months previously had dislocated his left hip. Attempts at reduction had been frequently but fruitlessly made, with and without chloroform. I at length decided to cut down and divide the Y-ligament of BIGELOW. When the head of the bone was exposed, the ligamentum teres was found to be ruptured and the acetabulum obliterated by inflammatory material which had been produced months before. It therefore seemed that resection of the head of the bone would offer the patient a surer

chance of a movable joint. This was accordingly done; the leg was placed in a fracture box and extension maintained by weights. In two months a long side splint was applied and the man was allowed to get about on crutches. The shortening will be about 1 inch, with perfect motion.

II.—A boy, 12 years old, highly scrofulous, with necrosis of the neck of the femur. The head of the bone was removed about $\frac{1}{4}$ inch below the great trochanter. Recovery in this case was slow, on account of the condition of the patient. He commenced to improve as soon as the bone was removed, and is now in good health, with a movable joint, but considerable shortening.

III.—A middle-aged boatman presented himself with the following history. About eight years ago he stepped on a nail, the nail penetrating the heel. The wound healed, but always gave him trouble. About a year ago he noticed a tumour springing from the spot where the nail had entered, which steadily, but almost painlessly, increased in size. A short time after the tumour appeared he noticed that the glands in the inguinal region were enlarging. I advised removal of the growth and glands, to which he consented. He made a good recovery, without any signs of a return of the tumour, which proved to be a sarcoma.

During the year 115 major operations and over 400 minor operations were performed.

METEOROLOGICAL TABLE, July to December 1892.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Highest.	Lowest.	Highest.	Lowest.	
	° *F.*	° *F.*	*Inches*	*Inches*	*Inches*
July	100	74	28.86	28.68	2.28
August	101	76	28.96	28.72	4.85
September	98	63	29.34	28.82	2.23
October	88	58	29.40	28.96	4.00
November	72	45	29.50	28.82	3.06
December	61	42	29.62	29.18	1.45

The above table was kindly furnished by Mr. LOVATT, of the Chungking Customs.

DR. ROBERT H. COX'S REPORT ON THE HEALTH OF WUHU

For the Eighteen Months ended 31st March 1893.

THE general health of the community of this port (now numbering 70 persons) for the above-mentioned period has been below the average of the last five years.

There were two births.

Two deaths occurred, both missionaries, one from enteric fever and the other from dysentery, for the medical treatment of the latter of which no aid was sought till the patient was *in extremis*.

Four cases of dysentery, two of enteric fever, one each of gonorrhœal rheumatism, pneumonia and renal colic, and several of malaria and diarrhœa were among the diseases treated.

A few cases of influenza and measles occurred on shore, but neither disease took the form of an epidemic.

For almost the whole time under review there has been at least one foreign gun-boat in port. On one of these, H.B.M.S. *Peacock*, a case of cholera occurred on the 5th October 1891, with a fatal issue in eight hours. No further cases occurred till the 20th, when there were two more deaths, and a third man was attacked but recovered. The German gun-boat *Wolf*, *en route* from Shanghai, brought here for burial the body of one of its sailors who died from the same disease. These, with the pilot of the s.s. *Fooksang*, who died on the 13th August 1891, made the number of burials in our new cemetery four from cholera; and, with the deaths of the two residents from enteric fever and dysentery, six in all within 12 months.

As there was no cholera among foreigners or Chinese on shore, it is difficult to account for the occurrence of the disease, but the supposition that the beer which the deceased sailors were known to have drunk at the local compradors' shops was diluted with foul water is the most probable explanation. Steps were taken to prevent the spread of infection from the ships to the shore. The houses which the sailors had frequented for the purpose of refreshment and the drink said to have been supplied were examined; the bakehouses were also inspected, and though the water used in making the dough might be of better quality (it being river water with the suspended matter precipitated by means of alum), nothing could be discovered to throw light on the source of the disease. After the departure of the *Peacock* for Chefoo there were no further cases. I must again allude to the advisability of having a place for the treatment of infectious cases and for the prevention of the spread of diseases liable to become epidemic.

Influenza made its appearance on board the French gun-boat *Inconstant* during her stay here from the 22nd to the 31st March 1892, when about half the ship's company were

attacked. They were treated at the hospital at I-chi-shan, which probably accounted for the occurrence of influenza among some of the foreign residents there later.

With the exception of the houses occupied by the Commissioner of Customs, British Consul, American Methodist Episcopal, Jesuit and Foreign Christian Missions, which are all well built and situated, the residences of the community are far from satisfactory. Over two-thirds of the foreigners here are quartered either in Chinese houses or in jerry-built houses constructed with little regard to climate or sanitary conditions. With such a state of things, zymotic diseases are inevitable.

Among the Chinese there was no serious epidemic during this period. Some cases of influenza and measles, however, were treated. Small-pox appears, of course, every winter. No cases of true cholera were observed.

The following surgical and midwifery cases are of some interest:—

Strangulated Hernia with Ulceration of the Intestine.—A Chinese farmer, aged 23, who had suffered from rupture since infancy (father and two brothers also affected), was admitted to the Wuhu General Hospital. Ten days previous to admission he had acute dragging pains in the tumour and abdomen, which, along with absolute constipation and frequent vomiting, had since continued. On examination the patient was found much emaciated, with tense protruding abdomen, weak thready pulse, dry brown tongue, and temperature 100°.4. The tumour was situated in the right groin, passing into the scrotum, was about the size and shape of a good-sized pear, and of almost cartilaginous hardness. As the patient's death, if unrelieved, seemed certain, I decided, notwithstanding his low condition, to operate at once. After thorough disinfection, and the administration of ether by Dr. STUART, a vertical incision 2½ inches long, with its centre over the external ring, was made through the skin. The coverings were then carefully divided on a director and the sac opened, exposing the gut, healthy in appearance. No vessels of importance enough to require ligatures were met, the slight hæmorrhage being controlled by pressure forceps. The external ring was small, not admitting the point of the finger. It was divided by an incision directly upwards. As the tumour still felt tense, an exploration of the sac was made, which revealed a very tight constriction some distance down its neck (*i.e.*, hour-glass constriction). This was also divided, with the result that a quantity of coffee-coloured fluid of a most offensive odour escaped. The incision was enlarged downwards, when the bowel was found ulcerated, and gangrenous below. As the patient showed alarming signs at this point, the anæsthetic was discontinued and restorative means were resorted to. On his rallying, the gut was quickly secured to the walls of the wound, which was then closed above by two silk sutures, and a large drainage-tube was inserted through the lower portion into the body of the sac. The wound was dressed with iodoform and absorbent wool, while a sponge was placed to catch the discharge from the drainage-tube, and directions given for its frequent removal and cleansing. Hot-water bottles were placed in the patient's bed and brandy and water given occasionally. The patient passed a good night and his appearance was much improved the following day, when the sac cavity was washed out and charcoal poultices applied. He was placed on milk diet. His condition continued favourable for the week succeeding the operation, the temperature ranging from 99° to 102°.

On the seventh day a diffuse swelling was first noticed between the great trochanter and the anterior superior spine, extending upwards beyond Poupart's ligament. Next day this showed a gangrenous point and was opened, when pus mixed with fæces was evacuated. A counter-opening was made at the most dependent part and a drainage-tube inserted. From this time the patient's condition improved. Fæcal matter escaped through the abscess cavity and at the seat of operation, and the fluid injected through the latter found a free vent from the former. A month after the operation the patient's friends considered

he was well enough to spend the Chinese New Year at home, and, in opposition to advice, removed him. A week later he was reported dead.

The mortality of this condition is very high—nearly 90 per cent. Owing to the extreme weakness of the patient, no elaborate operation could be performed. The appearance of the swelling on the seventh day was evidently due to the giving way of the coats of the paralysed gut above the ring. Recovery was expected as almost certain, and the premature departure of the patient, with the hardships of the journey, may be looked on as the cause of his death.

Maltreated Shoulder Presentation.—A Chinese woman, aged 23, married six years, the mother of two children, had been 54 hours in labour before my arrival. The membranes had been ruptured and a hand had presented for nearly 48 hours. The native midwives, in trying to assist nature and the patient, had wrenched the arm from the child at the elbow-joint. On my arrival I found the right shoulder of the child in the pelvis, with the remnant of the arm well down in the vagina. The labia were very œdematous. A couple of teaspoonsful of brandy were given and chloroform administered, which was easily taken. The patient was then moved to the edge of the bed, in the dorsal position, with the legs drawn up and supported. I then passed my hand, with difficulty, into the uterus, and after some time succeeded in grasping a leg (the left); then by pressing on the humerus, while my assistant aided by external rotation, the child was turned and the leg brought down. Chloroform was stopped after grasping the leg. Intermittent traction was employed while the patient was recovering from the effects of the anæsthetic, and the latter part of the delivery was accomplished by her expulsive efforts, aided only by the bringing down of the left and mutilated right arm. Fair contraction was obtained by friction of the uterus, there being no ergot at hand, and in half an hour the placenta was expressed by CREDÉ'S method. The uterus was washed out with carbolic lotion, and a binder applied. The patient was then placed in the semi-reclining position adopted by Chinese after parturition. The injection was repeated for four days. The patient made a good recovery.

Transverse Presentation; Right Arm and Right Foot prolapsed.—A Chinese woman, aged 38, multipara, had been in labour three days. The membranes had ruptured on the second day and the right hand of the child appeared at the vulva. On the morning of the third day the right foot also came down, both protruding—the hand blue and swollen and the foot white and bloodless—on my arrival in the evening. The patient, under the influence of chloroform, was brought to the edge of the bed, in the dorsal position, and supported on either side. When the urine was drawn off, a tape was fastened to the presenting foot by a clove-hitch. I then passed my right hand into the vagina, using the prolapsed arm as a guide, and made pressure with my fingers on the presenting ribs, while at the same time external pressure was made in a similar direction above the pubis with the left hand. After this had been continued for some time, with the right hand still in the vagina continuing the pressure, I pulled on the foot and tape with the left, and, as there were signs of yielding, also grasped the leg higher up with the right hand in the vagina, with the result that the leg and breech came down without much difficulty. The arms were brought down and the head followed, face to perinæum, without further trouble. The child was dead and the cord decomposed. The fluid following the birth was very offensive, from the meconium and products of putrefaction. There was no hæmorrhage. Ergot was given and the placenta expressed by CREDÉ'S method. The parts were then washed with warm carbolic acid lotion. The injection was continued for three days, and the patient regained her usual health without a bad symptom.

The following may act as a warning against the use of fire without proper ventilation:—

Poisoning by Charcoal Fumes.—A Chinese comprador on board a rice steamer loading at this port was, with a friend, allowed to occupy one of the passenger cabins during a very cold night in January last. He took in with him a small charcoal hand-warmer. In the morning suspicions were aroused by hearing laboured breathing in the cabin, the door of which (being locked on the inside) was at once broken open

and the inmates taken on deck. On my arrival I found the comprador—who had been lying on the settee, a foot or so from the ground—dead, and his companion, who was lucky enough to have chosen the upper berth, still breathing in the stertorous manner which had attracted attention. He was unconscious, with flickering pulse and dilated pupils. An inhalation of nitrite of amyl improved his breathing somewhat and caused an evacuation of the contents of the stomach, consisting of undigested rice. A blister was applied to the præcordia and hot-water bottles to his feet and body, while his limbs were vigorously chafed. Towards evening he was conscious and out of danger.

I append an abstract from the Customs meteorological observations, for which I am indebted to Mr. KINDBLAD, Acting Tidesurveyor and Harbour Master.

METEOROLOGICAL TABLE, October 1891 to March 1893.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Maximum.	Minimum.	Maximum.	Minimum.	
1891.	° *F.*	° *F.*	*Inches*	*Inches*	*Inches*
October	84	49	30.312	29.960	5.39
November	83	26	30.814	30.200	1.07
December	70	21	30.732	29.930	1.40
1892.					
January	62	20	30.750	30.000	0.46
February	63	20	30.651	29.753	3.18
March	72	22	30.551	29.732	2.35
April	89	33	30.513	29.610	5.92
May	91	44	30.420	29.712	4.09
June	92	55	30.100	29.510	3.69
July	100	68	29.970	29.600	2.80
August	100	70	29.983	29.690	4.73
September	97	52	30.530	29.706	2.72
October	83	41	30.500	30.000	0.28
November	79	24	30.653	28.832	1.04
December	64	25	30.742	30.053	0.68
1893.					
January	57	11	30.612	29.980	4.52
February	48	28	30.610	30.100	1.23
March	79	27	30.494	29.850	1.90

DR. A. SHARP DEANE'S REPORT ON THE HEALTH OF PAKHOI

For the Year ended 31st March 1893.

DURING the year since my last Report the health of the foreign residents and native population of this district has been very satisfactory: the latter escaped the epidemics usual at the change of the seasons, and no case of serious illness took place among the former.

One foreign male child was born.

Catarrhal affections of the air passages were prevalent during January and February, owing to sudden changes in the temperature; but all the cases were of a very mild character.

Diarrhœa, generally due to indiscretions in diet, was observed in July and August.

Two cases of a remittent type of fever occurred during October, supposed to be the result of chill caught in the evening after exposure to the sun on a trip into the country.

A general feeling of malaise; scanty, high-coloured urine; constipation and frontal headache for two days preceded the rise in temperature, which gradually reached 104° on the evening of the fifth day. The evening temperature fell steadily from the seventh day, and both cases were convalescent in 12 days dating from the first rise of temperature. The early morning temperature throughout the course of the fever stood at 99° or 100°.

A variety of herpes worthy of mention has been met with in seven cases during the past four years, occurring between the months from June to September. The localities affected were—

(1.) The anterior surface of the forearm, about 2 inches above the wrist, in one or two patches more or less uniformly circular.

(2.) The outer surface of the arm, just below the triceps, in one or two patches, longer than they were broad, from 1 to $2\frac{1}{2}$ inches in length.

(3.) The forehead, anterior and lateral aspects of the neck and behind the ears—in two, three or more lashes, as from the cut of a whip; straight as a rule, but sometimes zigzag or curved; running in any direction, or even crossing each other, as I have seen them on the side of the neck. These lashes vary in length from 2 to 7 inches, by about $\frac{1}{8}$ to $\frac{1}{3}$ of an inch in width, usually widest in the middle and tapering towards each end.

(4.) On the back of the neck, in one or two patches resembling those on the forearm.

(5.) On the leg. I met with one case in which the disease covered the anterior and outer surface from a little below the knee to the external malleolus.

In all the cases, no matter what the site of the affection, the symptoms and course were the same:—

A red spot first appeared, spreading towards the circumference in the case of the patches, or if on the face or neck it spread quickly lengthwise, forming a lash. On the second day of the eruption the skin was bright red, hot and itchy. During the following day vesicles appeared, and soon after a burning sensation set in, which was most severe in the patches on the wrist and on the back of the neck, in

consequence of these parts being exposed to the friction of the clothing. The burning sensation lasted about two days, and was followed by itchiness. The vesicles did not burst; their contents became milky, and they then dried up and the colour changed to a dark red. In the course of about 10 or 12 days, if the part was not scratched, the cuticle separated in one sheet, leaving a clean, unbroken surface of a dirty red colour which gradually faded away in about six or seven weeks.

This affection was most prevalent during the hot season of 1889, but I have had cases of it since. The disease did not seem to depend upon the state of the patient's health, but looked very much like a mechanical variety of herpes, possibly the result of contact with some insect.

Follicular abscesses of the external auditory meatus, ranging in size from a pin's head to that of a grain of No. 2 shot—not an uncommon affection here,—at times produce extreme agony.

In such cases I have found calcium sulphide, in hourly doses of $\frac{1}{6}$ of a grain, to be a most efficacious remedy, leaving nothing to be desired, and far superior to anodynes of any kind, hot fomentations, leeches, blisters, etc. Under this treatment the pain ceases in a few hours, resolution quickly follows, and it only remains to give a suitable tonic to bring to an end, in a few days, a condition too often of protracted duration.

Gonorrhœa is so common an affection that it is often looked upon as being of minor importance; and the patient not taking that care of himself which he should, the disease lingers on for months, and in some cases for over a year.

In its treatment under a tropical climate it is of the first importance that the patient should micturate copiously. Most men when constantly perspiring, as they do here, pass urine but three times in the 24 hours, in quantities of about 6 or 8 ounces at a time. It is of high specific gravity and colour, and is very irritating to an inflamed urethra. This, to my mind, explains most of the protracted cases; and I find that the disease will seldom last longer than from 16 to 22 days if the patient is inclined to carry out his instructions.

To commence with, stimulants are strictly forbidden; the diet is regulated; a suspensory bandage is worn; and no active exercise, long standing or walking is allowed. The patient should drink at intervals, daily, until a week after the discharge has ceased, as much barley water as he possibly can, except for an hour and a half before and after meals. If this does not cause a free discharge of pale, watery urine, small doses of citrate of potash added to the barley water will usually produce a copious flow. He should take 5 grains of the salicylate of soda three times a day, and use as an injection a warm solution of perchloride of mercury, of a strength of 1 in 20,000 of water, four or five times a day for three days (the injection may be commenced from the first appearance of the discharge). On the fourth day, unless contra-indicated, which I have seldom found it to be, the strength of the injection is raised to 1 in 16,000. From the sixth and every second day after, the water is diminished by 1,000, until the injection reaches 1 in 8,000, beyond which strength it is unnecessary to go. Usually, however, before this strength has been reached the discharge has ceased; but the patient should be cautious as to his mode of living for a couple of weeks longer, and continue to use for a while the injection at 1 in 16,000.

When this treatment is strictly carried out, gonorrhœa is not a protracted affection, and I have had no relapses among many cases treated during the past four years.

The native population in the immediate neighbourhood has not been visited by any epidemic since influenza was prevalent during February last year; but in a district near An-p'u (安舖), about 100 miles to the east of this port, bubonic plague carried off a large number of people during March and April.

I am informed by one of the French missionaries who has resided for many years in the neighbourhood of An-p'u that bubonic plague is endemic in a small district near that place, and that isolated cases will be found there at any time of the year, but that during the early spring of some years the disease occurs as an epidemic, and then the only chance of escape is to leave the district until after heavy rain has fallen.

Syphilis, in a mild form, is one of the most common affections met with; in fact, the population of the town may be said to be syphilised, and to this may be due the success attending the treatment of syphilis at the hands of the native medicine vendors, who are dealing with a modified form of the disease.

I have under daily observation four natives who contracted syphilis some three years ago, and who, as soon as the secondary eruption appeared on the face and limbs, consulted a Chinese doctor, and in the course of about a month were cured. They were, before they had the disease, and are still, as healthy-looking fellows as one could wish to see.

As a curiosity, I append copies of the prescriptions with which the men referred to were treated. The first is said to be the most efficacious, simply because it contains pearls and is more costly, thereby enhancing its virtue to no mean extent; it also causes less pain and griping than the second prescription, as the dose of the different ingredients is smaller.

℞ No. 1.—*Chung-ju-shih*, 鐘乳石 (stalactites—carbonate of lime), 0.10; *niu-huang*, 牛黃 (cow bezoar), 0.05; *hu-ma*, 胡麻 (linseed), 0.15; *ping-p'ien*, 冰片 (Baroos camphor), 0.03; *hu-p'o*, 琥珀 (amber), 0.05; *mo-yao*, 沒藥 (gum myrrh), 0.10; *shê-hsiang*, 麝香 (musk), 0.04; *ta-huang*, 大黃 (rhubarb), 0.50; *lien-ch'iao*, 連翹 (dried capsules of *Forsythia suspensa*), 0.10; *ti-ting*, 地丁 (a kind of herb), 0.10; *huang-pai*, 黃柏 (bark of the *Pterocarpus flavus*), 0.15; *chên-chu*, 珍珠 (pearls), 0.06; *t'u-pieh*, 土鱉 (a kind of beetle), 0.15; *chih-tzŭ*, 梔子 (berries of the *Gardenia florida*), 0.15; *san-hsien-tan*, 三仙丹 (red oxide of mercury), 0.03; *huang-lien*, 黃連 (root of the *Chelidonium majus*), 0.10; *shan-chia-p'ien*, 山甲片 (scales of the manis), 0.10; *huai-hua*, 槐花 (flower-buds of the *Sophora japonica*), 0.15; *t'ien-ch'i*, 田七 (root of the *Gynura pseudochina*), 0.15; *hsiung-huang*, 雄黃 (yellow sulphide of arsenic), 0.05; *ju-hsiang*, 乳香 (gum olibanum), 0.10. The ingredients are powdered and made into a mass with rice paste, and divided into pills, each weighing about 2½ grains.

℞ No. 2.—*Ts'ang-shu*, 蒼朮 (root of the *Atractylis ovata*), 0.30; *mu-t'ung*, 木通 (a species of clematis), 0.30; *kan-ts'ao*, 甘草 (liquorice root), 0.20; *hsiung-huang*, 雄黃 (yellow sulphide of arsenic), 0.30; *ch'ang-shan*, 常山 (root of the *Dichroa febrifuga*), 0.30; *shêng-ti*, 生地 (root of the *Rehmannia glutinosa*), 2.00; *huang-lien*, 黃連 (root of a species of *Chelidonium majus*), 0.30; *chin-yin-hua*, 金銀花 (flowers of the *Lonicera chinensis*), 0.30; *san-hsien-tan*, 三仙丹 (red oxide of mercury), 0.20; *shan-chia-p'ien*, 山甲片 (scales of the manis), 0.15; *ch'ê-ch'ien-tzŭ*, 車前子 (seeds of the *Plantago major*), 0.30; *ta-huang*, 大黃 (rhubarb), 0.30; *kuei-pan*, 龜板 (shells of the land tortoise), 0.30; *pieh-chia*, 鱉甲 (shells of the fresh-water turtle), 0.30. The ingredients are powdered and made into a mass with honey and sugar, and divided into pills, each weighing about 2½ grains.

The dose of either of the above mixtures is 10 to 15 pills, to be taken before each meal. In the case of the first, the patient, having taken the pills for a few days, is directed to be careful to wash out his mouth frequently with water in which green peas have been boiled.

Some strange substances enter into the composition of these pills, but it will be noticed that both formulæ contain arsenic and mercury. The course of treatment lasts for only 8 or

10 days, the patient being then given a tonic mixture, which completes the cure in about a month or six weeks; and as far as my observation goes, with reference to the above-mentioned four men, I must certainly say the results were most satisfactory.

With the exception of the latter part of the year, we experienced no abnormal changes, the four seasons following each other without any unusual atmospheric disturbance; and rain fell in sufficient quantities until October. During January we had strong northerly winds, and on the 16th of that month—although the appended thermometric readings do not show it—there was hard frost for 20 hours, which gave the most beautiful yet strange effect to the scenery of a country essentially tropical. Fine rain fell for some hours before the frost set in, and in consequence all the bamboos, palms, cacti and screw-pine (a wild variety of pineapple) were sheeted with ice, and every tree and shrub had large stalactiform masses of ice hanging from its branches. No one who had not actually experienced it could believe that the temperature would fall so low in a place so far south. Old men of the place said they had never witnessed anything like it before, and these, along with women and children, were busily engaged gathering the icicles into bottles. Some of the people did not even know what ice was, but simply said it came from heaven and that they heard the water therefrom was good for fever during the fifth and sixth months.

A slight shock of earthquake was felt at 11.15 P.M. on the 19th March, being the second that has been experienced here within the past two and a half years. Such a shock if it occurred during the busy hours of the day would pass unnoticed, and it is probable that many vibrations do occur of which we are unaware.

METEOROLOGICAL TABLE, April 1892 to March 1893. (Latitude, 21° 29′ N.; longitude, 109° 6′ E.)

MONTH.	THERMOMETER.			Rainfall.	MONTH.	THERMOMETER.			Rainfall.
	Highest.	Lowest.	Mean.			Highest.	Lowest.	Mean.	
1892.	° *F.*	° *F.*	° *F.*	*Inches*	1892.	° *F.*	° *F.*	° *F.*	*Inches*
April	93	56	75.70	2.66	November	89	50	71.55	0.87
May	93	64	79.90	11.58	December	75	45	56.76	2.13
June	93	71	83.60	24.94					
July	95	74	83.68	14.39	1893.				
August	94	72	82.82	23.34	January	80	32	57.90	0.37
September	98	65	80.80	9.20	February	72	43	54.16	1.10
October	90	60	76.05	0.44	March	81	46	63.58	2.69

NOTES ON DISEASES IN NORTH FORMOSA.

By ALEXANDER RENNIE, M.B., C.M.

IN discussing the distribution and prevalence of disease in Formosa, we may be pardoned for briefly alluding to the fact that the island is both geographically and to a certain extent ethnologically distinct from the mainland of China, and that consequently the types of certain diseases existing on the mainland may be considerably modified or even absent, and *vice versâ*.

(1.) GEOGRAPHICALLY.

Separated from the nearest point of the mainland by a channel only 70 miles in width and connected by a submarine bank submerged at a depth possibly not exceeding 40 fathoms, Formosa would at first sight appear to have been united to the mainland of China at no very remote geological epoch. For instance, we know that Borneo, which is separated from the Malay peninsula as well as from Java and Sumatra by a sea about 350 miles across and of almost similar depth to the shallow part of the Formosa Channel, formed part of the Asiatic continent at a comparatively recent period, from the fact that the species of plants and animals are almost as similar as though no separation existed. But if, instead of the depth of the intervening sea, we take the amount of individuality of the flora and fauna as a more reliable measure of the period of isolation, Formosa must be classed as one of the oldest of the so-called recent continental islands. For evidence bearing on this subject we are almost entirely indebted to the collections of SWINHOE and the researches of WALLACE concerning the geographical distribution of animals. From these we gather that although the chief types of existing Asiatic mammalia are found in Formosa, still out of 35 species 14 are peculiar, while out of 128 species of land birds no fewer than 43 are peculiar, to the island. Apart, however, from this striking difference in organic forms, a more suggestive feature is the affinity or identity of several with Indian, Malayan and Japanese species; in fact, as regards the avifauna, more than half have their nearest allies in those remote regions rather than in the adjacent continent. An examination of the Formosan lepidoptera bears out this affinity even more strongly.

So with the flora. Possessing much in common with the adjacent mainland, the vegetation generally is more tropical, while such plants as the rattan, the betel palm and the *Musa textilis*, which are Malayan forms and absent from the adjacent mainland, flourish luxuriantly. Making all due allowance for the part played by wind and tide in the transmission of seeds, plants or insects from the Malay Archipelago northwards, the general affinity is too marked to be explained by these natural agencies: it implies geographical continuity in the past.

To account, therefore, for the prevalence of Malayan and Indian forms, we must assume that Formosa formed part of the mainland at a period when Japan, Hainan and the islands of the Malay Archipelago were still attached to the continent, and that the species which

these remote parts now possess in common were then distributed over the intervening area. Subsequent to the separation these species became extinct on what is now the mainland of China, but preserved their individuality in the dense forests of the Himalayas and these remote islands. Formosa especially, with its partly tropical climate and lofty forest-clad mountains, afforded the necessary immunity from those adverse conditions that tend to the modification or extinction of a species.

Doubtless, in the line of the Bashee and Babuyan Islands, a direct connexion existed with the Philippines, which were in turn united to Borneo by way of Palawan and Sulu, and thus Formosa was in contact with what is now the Malay Archipelago. When this connexion was interrupted is a question of some difficulty. The greater depth (over 100 fathoms) of the intervening sea would lead us to suppose that the separation of Formosa from the Philippines occurred long prior to the date of its separation from the mainland; but, on the other hand, from Formosa southwards there are evidences of powerful volcanic action, which would explain the greater upheaval and subsidence necessary to effect this separation in a shorter time. Elevated coral formations in the southern portion of Formosa point to that recent submersion and subsequent elevation which is so marked in the Philippines, and which has led to the flora and fauna of the latter islands differing so markedly from those characteristic of the Malay Archipelago. Briefly, then, we infer that Formosa had a land connexion both with the mainland of China and with what is now the Malay Archipelago, and so formed a border of the once great Malayan extension of Asia; but evidence is lacking to show when the Malayan connexion was severed. Taking, however, into account the rapid changes produced by powerful volcanic action, it may be reasonable for us to suppose that this connexion persisted for some time after the separation of Formosa from what is now the mainland of China.

(2.) Ethnologically.

Broadly speaking, we may divide the inhabitants of the island into aborigines and Chinese.

(*a.*) *Aborigines.*—Whether these so-called savages are the descendants of the original inhabitants of the island or have supplanted a race long extinct is an unsettled point. However, we may assume that those occupying the mountains of the interior are the most typical of the existing races, from the fact that in these remote retreats they have been less exposed to the conditions that modify a species on the borders of civilisation. From these tattooed and untamed savages to the quiet and industrious dwellers in the lowlands, who in dress, habits and mode of life approximate to their Chinese neighbours, all phases of the civilising process may be seen. The former are named by the Chinese Chihoans, or unripe barbarians, while the tribes of the latter are variously known as Sekhoans, or ripe barbarians, Pepohoans, or barbarians of the plains, etc. The different tribes vary considerably in appearance and physique, but, generally speaking, the civilised aborigines, reared on a fairly substantial diet of rice and farm produce, compare favourably in this respect with their kinsmen on the mountains, who, subsisting chiefly by the produce of the chase, eked out by a scant supply of mountain rice or millet, are, from their arduous life, of slighter build but more wiry and

enduring. In spite of the many distinctions in dress, customs, dwellings, language and physical characteristics, a close comparison shows the many tribes to belong to one race and to be most nearly related to the Malays. They have thus been grouped as Malayo-Polynesian—a term which is, however, linguistic rather than racial, and used to include all the Oceanic races, with the exception of Negritos, Papuans and Australs. A wider knowledge has led modern ethnologists to limit the term Malay: it no longer denotes a fundamental type. They view the inhabitants of Malaysia as an intermingling in various proportions of three distinct races—the Mongolian, the Caucasian and the dark (Negrito or Papuan). Just as the fusion of all three has produced the tribes found in Eastern Malaysia, so the fusion of the two former has produced the Malay as we meet him in the west. According as the yellow or white element predominates, the nearer is the approach to the Mongolian or Caucasian type. Briefly, the true Malay is a variety of the Mongolian type.* The Malayan race as a whole closely resembles the East Asian populations from Siam to Manchuria.† The Formosan aborigines exhibit, in colour, language and type, differences sufficiently marked to warrant us in assuming that, though they are of Malayan origin, they are not all descended from the same stock.

Taking into consideration the migratory instincts of mankind, it is more reasonable for us to suppose that the Formosan aborigines are the descendants of immigrants driven hither by wind and wave from various points in the Pacific Ocean. Especially is this supposition probable as regards the tribes occupying the lowlands along the east coast, some of whom preserve traditions of their arrival from over the sea and, though not now a seafaring people, still commemorate the event. Even within the past 20 years natives of the Loochoo, Pelew and Philippine Islands have been driven by stress of weather on this coast. In 1886 we met one of the latter who had arrived in this manner 16 years previously; he still retained traces of his Tagalog dialect, but to outward appearance was indistinguishable from the Pepohoans among whom he lived.

(*b.*) *Chinese.*—According to their own records, the earliest knowledge the Chinese possess of Formosa dates from about A.D. 1430; and although from time to time junks got driven on the coast, and many settlers found employment during the Dutch occupation of the island, it was not until the expulsion of the Dutch by KOXINGA, in 1661, that emigrants from the mainland arrived in any number. The original settlers hailed from the neighbourhood of Amoy, and ever since the tide of emigration has been steadily flowing from Fuhkien, so that the prevailing dialect and customs are those of that province. The descendants of these settlers constitute the bulk of the agricultural and labouring classes, while there are a goodly number of northern men in official and military service, as well as Cantonese who engage in mercantile pursuits. In addition, there is a large Hakka population. The original Hakka settlers were drafted here years ago by the Kwangtung authorities, on account of lawlessness in that province; the congenial nature of the life has induced many of their friends to follow them. They are a hardy and industrious race. Settled along the savage borders, they form a buffer between the more timid Fuhkien settlers and the aborigines, and whether engaged in the camphor trade or reclaiming new territory, are the pioneers of Chinese civilisation.

* Professor KEANE, in *Nature*.

† WALLACE, *Malay Archipelago*.

Before proceeding to remark on the diseases prevailing on the mainland and in Formosa, it may not be out of place to allude briefly to the climate of the island. That of the northern part, to which our subsequent remarks on disease apply, is subtropical and differs considerably from that of the south, both in a lower mean temperature and a greater rainfall. The climate is considerably affected by the Kuro Siwo, or Japanese current—the Eastern homologue of the Gulf Stream,—which flows northwards along the east coast. During the north-east monsoon the wind blowing over this heated current gets surcharged with moisture, which it deposits as rain on the hills in the north of the island; consequently the rainfall in the north is abnormally heavy, that of Tamsui being about double that of the corresponding mainland, while the yearly rainfall of Kelung is close on 150 inches, about two-thirds of which fall between October and March. Formosa has appropriately been said to act as an umbrella to the adjacent mainland.

1.—Leprosy: Elephantiasis Græcorum.

Frequency.—Taking the seven years 1886–92, the proportion of leprosy cases to the total of all other diseases treated in the native hospital at Tamsui was 0.9 per cent.—a small percentage when compared with the returns from some of the hospitals on the mainland. (*Cf.* Canton hospital, 1892, 6 per cent.; Swatow, 1888, 4.8 per cent.)

Distribution.—Lepers are found all over the cultivated parts of the north of the island, but certain of the older villages are noted for possessing more than an average ratio. These villages are not to be regarded as so-called leper retreats, to which victims flock when conscious that they have contracted the disease, but simply as foci where cases of the disease have multiplied, these villages having been tenanted by ancestors of the lepers for several generations. It is not our object here to discuss the evidences of heredity or contagion, but merely to draw attention to the disease as it affects the different peoples. The greater number of cases are furnished by the agricultural population, who are the descendants of the settlers from Fuhkien, and the Hakkas, both of whom are affected in about equal proportion. A most noteworthy fact is that no cases have been met with among the aborigines. Of the diseases of the uncivilised aborigines little is known, but among the 30,000 or more Pepohoans who are scattered over North Formosa we have had abundant opportunities for observation, both in hospital practice and when visiting their villages. We have never seen a single case; and this observation is corroborated by the Rev. Dr. Mackay, who informs us that during the 20 years he has worked among these people he has not seen a single leper. When we remember the rapidity with which leprosy spread among the natives of the Sandwich Islands subsequent to the arrival of the Chinese in 1848, this fact is very striking, especially to those who are not inclined to regard this spread as a mere coincidence, but as due to a contagium conveyed in the persons of the immigrants or to some article of diet introduced by them. There, a race untainted by the disease prior to 1850 presented 15 years later, among a population of 67,000, no fewer than 230 lepers; here, in North Formosa, Chinese have been settled for over 200 years, mixing and to a slight extent intermarrying with the aboriginal tribes, and yet, so far as we are aware, no case of leprosy has been recorded among the latter.

2.—Elephantiasis Arabum and Lymph Scrotum.

Frequency.—In seven years, 1886–92, only six cases presented themselves for treatment at the Tamsui native hospital—a per-centage of 0.03. In the parts of the Fuhkien province from which most of the Formosan settlers are derived the disease is a most common one (in Amoy hospital about 2 per cent.). Of the six cases, four were suffering from elephantiasis of the leg and two from lymph scrotum.

Distribution.—Of two patients we obtained no history; one was a visitor from Canton; while the remaining three were settlers from Fuhkien and had most probably contracted the disease before leaving that province. I append brief notes of one case:—

Poah, aged 34, farmer; formerly resided in Chinchu (Fuhkien), but six years ago came to Formosa. When about 18 years of age he began to have attacks of intermittent fever, which frequently recurred. The groin glands enlarged during attacks of fever, but subsided afterwards, each successive attack leaving them larger. Is quite positive that the disease commenced at Chinchu, where, he says, it is very common. No family history.

12th September 1889.—Removed scrotum, weighing 8½ lb.

5th October.—Patient left for home.

On several evenings the blood of this patient, and also that of another who resided for a short time in hospital, was examined microscopically, but on no occasion was the filaria sanguinis hominis observed.

It appears, therefore, that this affection is exceedingly rare, if not entirely absent, in the case of those born in and never resident out of the island. This circumstance is possibly explained by the curious fact that the filaria-nurturing mosquito which forms the intermediary host of the parasite is not native to Formosa.*

3.—Parasitic Hæmoptysis, produced by the Distoma Ringeri vel Pulmonale.

A full account of this parasite, simultaneously described by Dr. Manson and Professor Baelz, may be found in the Customs *Medical Reports*, xx and xxii.

Frequency.—Of patients attending the Tamsui hospital about 0.9 per cent. are affected. The affection is, however, more common than these figures show, many regarding it as too unimportant to require treatment.

Beyond the expectoration of dull brick-red sputum, laden with the characteristic ova, the symptoms and signs of the presence of the parasite in the lungs may be *nil*. After remaining thus quiescent for months or even years, some exciting cause, such as violent exertion or shouting in a fit of anger, may produce most serious hæmorrhage. As seen in Formosa, the disease does not seriously interfere with the duration of life. It may co-exist with tubercular disease of the lungs, as in the following case:—

Kao, aged 33, Hakka female; suffered from hæmoptysis for six years. Ova abundant. Dulness over right apex. Tubercle bacilli in sputum.

8th August 1891.—Injected 1 milligramme Koch's tuberculin. No reaction.

10th August.—Injected 2 milligrammes Koch's tuberculin. Temperature at 8 P.M., 101°.8. Malaise, cough and expectoration of blood so free as to forbid a continuance of this treatment.

* Dr. Myers, Customs *Medical Reports*, xxi and xxiii.

Distribution.—The chief centre is Hsin-chu (Teckcham), on the west coast, but the disease is fairly common over the north of the island, affecting both Chinese and Pepohoans alike. We have not observed a case among the uncivilised aborigines of the mountains. Chinese from the mainland are prone to contract the disease. As Dr. MANSON has shown, the ova are readily hatched in water, and in this vehicle the embryo may enter the human subject. It is most probable, however, that before being able to maintain its existence in the human lung it has to undergo further development in some intermediary host; it may thus be swallowed with the host, or in water into which it has escaped from the host. Otherwise, it is difficult to understand why the affection has not extended to the mainland of China, whither so many have returned affected from Formosa and have continued to expectorate ova-laden sputum, which would readily become water-borne. The stray cases we have met on the mainland have all a history of former residence in Formosa. The disease seems to be limited by the geographical distribution of the intermediary host—whatever that may be—to Japan, Corea and Formosa. This fact is interesting, in view of the evidence as to a previous land connexion of Formosa with Japan. This connexion doubtless existed by way of the Meiaco Sima and Loochoo Islands, but, from the comparatively slight similarity in species, must have been interrupted long prior to the separation of Formosa from the mainland and from Malaya. It is somewhat remarkable that parasitic hæmoptysis has not been reported from the Philippine or other islands lying in the same volcanic belt as Formosa and Japan.

4.—TINEA IMBRICATA.

The first case of this epiphytic skin disease noted in China is the one described by Dr. MANSON. His patient had contracted the affection in Singapore, whence he had returned to Amoy 17 years previously. Struck at once by the appearance of the affection as contrasted with ordinary body ringworm, Dr. MANSON, on examination, recognised certain distinctions which he regarded as sufficiently important to justify a separate nomenclature. As compared with tinea circinata, these differences are briefly as follows:—Tinea imbricata avoids hairy situations, does not extend deeper than the mucous layer of the epidermis, the fungus is more abundant, the chains of spores are more numerous than the mycelial threads, and the spores are usually oval or rectangular, rarely globular.*

Dr. TILBURY FOX, however, regards the affection as ordinary body ringworm, flourishing more luxuriantly on account of a moister climate and personal habits, and classifies it, along with other Eastern forms of ringworm, under the heading of tinea circinata tropica. Dr. GUPPY, who most fully describes the disease as seen by him in the Solomon Islands, appears to favour the latter view, remarking that when the white man there contracts the affection it manifests itself in the form of "dhobie itch."

Frequency.—About 0.9 per cent. of the patients attending the Tamsui native hospital are affected; but this by no means represents the frequency of the disease. The chief centres are distant two or more days' journey—a distance which precludes many from seeking relief

* Customs *Medical Reports*, xvi.

from the itching they complain of in hot, moist weather. From the hospital reports we find that tinea circinata is approximately five times more frequent than tinea imbricata.

Distribution.—The affection is comparatively rare among ordinary Chinese, who suffer chiefly from the common body ringworm, but is extremely common among the Pepohoans of the Kapsulan plain and the Hakkas, who are brought most in contact with the aborigines. The aborigines of the mountains appear to suffer much less than the civilised aborigines of the plains.

Whether or not the distinctions alluded to above are sufficiently marked to warrant a separate designation, the appearance of the affection is striking. In extreme cases the whole body, except the scalp, presents a furfuraceous appearance, owing to the loosened epidermis, which is arranged in a series of wavy lines with a more or less concentric pattern—circles start from various centres and meet each other. After a few baths in the sulphur springs, whither we usually send these patients for preliminary treatment, the loose epidermis is detached, leaving the skin less rough and displaying admirably the highly ornamental pattern which represents the mode of extension of the fungus.

Personal habits seem to bear little relation to its spread. In a tribe of semi-civilised aborigines inhabiting the Kilai plain, on the east coast, we found quite 6 per cent. affected, and yet these are the most cleanly people we have seen on the island. Every village possesses its separate bathing-places for men and women, whither they repair for the daily bath, and they are just as cleanly in their dress and household arrangements as they are regular in their ablutions.

The affection is undoubtedly the one we so often come across in the narratives of travellers visiting the islands of the Pacific Ocean and erroneously called by them ichthyosis, pityriasis versicolor, psoriasis, etc. It is identical with the affection known in Polynesia as Tokelau ringworm. Within the memory of man it has invaded several of these islands, notably Samoa and Tokelau, where it was previously unknown, and thence may be traced back to its source in the Solomon Islands, where Dr. GUPPY estimates that about two-fifths of the population are affected.*

Coming to the Malay Archipelago, which more immediately concerns us, we find reference made by WALLACE to "the scurfy skin disease so common amongst savages."† He seems to be of opinion, however, that the affection bears some relationship to diet, the well-nourished Malay or Dyak suffering slightly as compared with tribes obliged to subsist on badly cooked green vegetables.

In DAMPIER'S *Voyage round the World* reference is made to the disease as the narrator observed it in Mindanao and the Ladrones.

It will be gathered, therefore, that the affection is one essentially peculiar to Malays and Papuans; that it may spread to Chinese living under the same climatic conditions; and that whether or not the fostering cause may be the moist, warm climate, the fungus flourishes with a luxuriance not observed on the mainland of China.

* For further references, see *Notes by a Naturalist on the "Challenger,"* MOSELY; also *Cruise of the "Marchesa,"* GUILLEMARD.

† *Malay Archipelago.*

The spread of the disease is somewhat interesting on account of its bearing on the origin of the Formosan savages. Throughout the Malay Archipelago and Polynesia its spread appears to be co-extensive and contemporaneous with the migrations of settlers from island to island across wide tracts of sea, and so no doubt it was introduced into Formosa by the representatives of one or more of the present tribes whose original home was one of the Pacific Islands.

5.—Fevers.

Any notes on the diseases of Formosa would be incomplete without a reference to the fever which has earned for the island such an unenviable reputation. All forms of malarial intermittent are common, but the tertian type is most frequently met with. The severe bilious remittent and continued forms from which foreigners suffered so much in the earlier days after the opening of the port are now extremely rare. The latter was characterised by high fever with no remission, violent gastric disturbance and brain symptoms.*

Among the Chinese we have occasionally seen a fever of this type; it is extremely fatal and uninfluenced by the ordinary remedies for malarial fever. A genuine case of typhoid we have not seen; but since, as regards foreigners, the field of observation is very limited, and as regards Chinese, the diagnosis, in the absence of unequivocal symptoms or a postmortem examination, is open to doubt, one cannot dogmatise on the point. Generally speaking, foreigners suffer much less from malaria than in former days—an improvement due probably to better house accommodation and improved hygienic surroundings.

Frequency.—About 25 per cent. of the patients attending the Tamsui hospital suffer from diseases of malarial origin—a per-centage far higher than anywhere on the mainland. This greater prevalence may be accounted for by the volcanic soil, by the rank vegetation resulting from the excessive rainfall, and chiefly by the fact that, as regards cultivation, the island is comparatively new, having been mostly virgin soil prior to the advent of the Chinese, about 200 years ago.

Distribution.—The most unhealthy districts are the valleys between the hills and the flat lands lying between the mountains and the sea, such as in the Kapsulan plain and the neighbourhood of Tamsui.

It is interesting to note the degree in which the different inhabitants are affected. One would naturally expect to find the aborigines of the mountains enjoying the greatest immunity, but when we take into account their precarious existence and comfortless dwellings in the damp forest, we need not wonder that they are in this respect little better off than the civilised aborigines of the lowlands. Most of the latter occupy the villages dotted over the Kapsulan plain—an extremely fertile country on the east coast, north of Su-ao Bay. They are agriculturists, and raise their rice and other crops in the Chinese style. To this mode of farming they are comparatively strange, for although a good deal of land was under cultivation during the Dutch occupation of the island, it is not likely that an irrigation system was adopted by these Pepohoans until after the arrival of the Chinese. A traveller through the plain at once notes

* Dr. Johansen, Customs *Medical Reports*, xxviii.

the anæmic appearance of these people. The healthiest appear to be the semi-civilised tribes occupying the lowlands along the east coast. Their houses are constructed of wood, with floors of rattan raised 2 feet above ground; the thatch is sufficiently thick to defy the heaviest rainfall, and altogether their dwellings are models of comfort and cleanliness. They raise excellent crops of millet, Indian corn, peaches and other fruits, but employ no irrigation system. They are well nourished, and both in healthy appearance and physique present a most striking contrast to their anæmic Pepohoan neighbours.

Of the Chinese, northern men suffer most severely, especially the soldiers, who are mostly natives of Anhwei and adjoining provinces. On arrival they are strong, healthy men, who appear to have suffered little, if at all, from malaria. Having to live mostly in earthworks, their surroundings are very unfavourable. They succumb readily to attacks of fever, while those less severely affected convalesce slowly, developing a well-marked malarial cachexia, with intense anæmia, swelling of the lower limbs and puffing of the face—an appearance simulating beri-beri. Albuminuria and paralytic symptoms are absent. The mortality in the summer months is excessive.*

Chinese native to the island suffer in a less degree. Through residence for several generations they have undergone a gradual process of acclimatisation, and so have acquired a partial immunity. Splenic enlargement, often extreme, and irrespective of age, is quite a common condition among them. In appearance and physique they are decidedly inferior to the northern men. Attacks of fever are more rare and less severe, but, on the other hand, they suffer much from rheumatism, brow-ache, neuralgia and other masked forms of malaria.

* Customs *Medical Reports*, xx and xxxiv.

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 31st March 1893.

IN spite of the very severe winter, there has not been a great deal of sickness among the foreign residents of this port. Not for over 20 years has the district experienced such cold weather. The Chinese suffered severely, and I believe there were many cases of frostbite, though only two came under my notice.

There has been one death, from enteric fever.

The following cases have been under treatment:—

Amputation of fingers.	Frostbites.
Bronchial catarrh.	Palmar abscess.
Cardiac failure.	Pleuritis.
Chronic dysentery.	Pulmonary congestion.
Enteric fever.	Stabbing wounds of face and back.

Enteric Fever.—The patient was a chief petty officer of H.B.M.S. *Linnet*. He was landed from the ship on the 26th January, having been ill since the 10th January, and he died on the 2nd February. No postmortem was made, but from the collapse at the end it was clear that perforation had taken place.

Appended is an abstract from the Customs meteorological observations taken at Wenchow (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ 28½″ E.).

METEOROLOGICAL TABLE, October 1892 to March 1893.

MONTH.	BAROMETER.		THERMOMETER.		RAINFALL.	
	Maximum.	Minimum.	Maximum.	Minimum.	No. of Days on which Rain fell.	Quantity.
1892.	*Inches*	*Inches*	° *F.*	° *F.*		*Inches*
October	30.336	29.890	80	60	2	2.05
November	30.486	29.670	76	42	15	2.60
December	30.500	30.030	63	36	5	1.70
1893.						
January	30.500	29.950	63	25	5	1.67
February	30.490	30.028	59	33	14	5.06
March	30.500	29.820	70	40	18	4.01

REMARKS.—15th and 16th January: snow, 1 inch. 12th and 14th February: snow, 2 inches.

DR. E. W. VON TUNZELMANN'S REPORT ON THE HEALTH OF CHEFOO

For the Year ended 30th September 1893.

DURING this period the health of the foreign community at Chefoo has been good. Nothing worthy of particular note has occurred, except a small outbreak of typhoid fever in the last quarter of 1892 (four cases) and a somewhat more extensive one of measles (10 cases) in the spring of 1893. In the latter case the infection spread from the Collegiate School to the children in the Settlement.

The number of visitors during the summer was considerable. Excluding those who came in a bad state of health, to recuperate, they for the most part enjoyed good health, no serious cases of illness coming under my care.

Two deaths have occurred among the residents—one from drowning, one (a member of the Customs out-door staff) apparently from cardiac failure; he was found dead in bed, to which he had retired the previous evening, after long exertion and exposure to a bitter wind and rough sea, without any complaint of ill health. Another death, of a visitor, is elsewhere referred to.

Eight births have taken place, five females and three males. The mothers have all had normal recoveries.

One child, a female, died three hours after delivery. The mother was an elderly woman, in indifferent health. The first stage of labour lasted for nearly three days, inefficient pains coming on at long intervals and dying away without succeeding in rupturing the membranes, though the presentation was normal and there was no obstacle to delivery. Finally, the membranes were ruptured and the child extracted with forceps without difficulty. It was nearly asphyxiated when born, and though resuscitated by artificial respiration, lived only for three hours.

The other cases were normal in all respects, except that in one the arm presented externally and podalic version was required. There was also one premature delivery, at the sixth month, on the third day after the onset of typhoid fever; the mother recovered.

A somewhat curious fact may here be noticed. Two of these eight mothers were Japanese, and they nursed their children without difficulty. With the six European mothers it was otherwise. The one whose child died had no milk at all, a phenomenon readily explicable by the state of her health; the other five, however—all of whom were in good, most of them in robust, health,—were unable to nurse their infants for more than a few weeks, the milk rapidly failing both in quality and quantity. Whether this is usual among European women in China I do not know. Its explanation, if bringing it into relation with other phenomena of similar import may be considered an explanation, is probably to be found in DARWIN'S well-known

observations on the extreme susceptibility of the reproductive system to changed conditions of life. If it proved to be the usual result of these changed conditions, its importance, as bearing on any question which might in the future arise as to the suitability of China as a habitat for our race, is very obvious.

In conclusion, I am anxious to acknowledge my indebtedness to my friend and colleague, Dr. DOUTHWAITE, of the China Inland Mission, for invaluable assistance on many occasions.

TABULAR STATEMENT of CASES treated in the CHEFOO GENERAL HOSPITAL.

Case.	DISEASE.	Sex.	OCCUPATION.	Days in Hospital.	RESULT.
1	Typhoid fever	Female		22	Recovery.
2	,, ,,	Male	Sick-bay staff, R. N.	25	,,
3	Remittent fever	,,	I. M. Customs staff	6	,,
4	Typhoid fever	,,	Clerk	23	,,
5	Dysentery, chronic	,,	Officer, merchant marine (English)	13	,,
6	Pneumonia and delirium tremens	,,	I. M. Customs staff	28	,,
7	Varioloid	,,	Merchant	21	,,
8	Intermittent fever	,,	Officer, merchant marine (Russian)	14	,,
9	Typhoid fever	,,	Sailor, Japanese navy	6	Death.
10	Bright's disease	,,	Officer, revenue steamer *Feihoo*	10	,,
11	Dysentery, acute	,,	Officer, merchant marine (English)	14	Recovery.
12	,, chronic, and hepatic abscess	,,	Clerk	3	Still in hospital (30th Sept.).

REMARKS.—Case No. 9 was admitted in an almost moribund condition, delirious and extremely feeble. Case No. 10 on admission was very anæmic and dropsical, urine very scanty and loaded with albumen. Two years previously he had suffered severely with similar symptoms; had never been well since. Total suppression of urine occurred on the fourth day after admission. He was kept alive for six days, chiefly by means of jaborandi, supplemented occasionally by hypodermic injections of pilocarpin. Ultimately he died of uræmia. Case No. 12 was a visitor from Shanghai. His dysentery speedily ceased under treatment, but symptoms of hepatic abscess supervened, and on 12th October he left by steamer for Shanghai, where he died about a fortnight later.

DR. E. A. ALDRIDGE'S REPORT ON THE HEALTH OF ICHANG

For the Half-year ended 30th September 1893.

THE following abstract is from the meteorological observations taken at the Custom House:—

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	THERMOMETER.				BAROMETER.		RAINFALL.	
	Highest.	Lowest.	Average Highest.	Average Lowest.	Highest.	Lowest.	No. of Days.	Quantity.
	° *F.*	° *F.*	° *F.*	° *F.*	*Inches*	*Inches*		*Inches*
April	98.0	46.0	72.3	58.7	32.24	29.58	8	4.09
May	99.5	51.0	84.0	63.0	30.08	29.52	12	7.25
June	102.0	60.0	85.8	69.7	29.93	29.58	11	6.89
July	101.5	70.0	94.7	75.3	29.75	29.42	15	9.67
August	104.0	69.0	95.8	74.6	29.92	29.37	4	2.50
September	99.0	59.0	85.6	66.6	30.08	29.71	10	6.76

The summer, preceded by an unusually warm spring, was short in duration and the heat was never particularly trying. This was the result of plenty of rain, which always has the effect of lowering the temperature for some days, and thus it is that a wet summer is welcomed by foreigners at Ichang. The rainfall was 37.16 inches, falling on 60 days, during 336 hours.

The health of foreigners has during the last six months been good. There were two births—one male, one female. There was one death, from malarial fever with dysentery. The more important diseases attended were—

Dysentery, 2 cases; remittent fever, 1; intermittent fever, 3; gravel, with the passage of calculi large enough to twice cause temporary stoppage of urine from impaction in the urethra, 1; bronchitis, 1; fractured rib, 1.

The fatal case was that of an energetic medical missionary, not three years resident in China, who through the summer had been overworked, often having to expose himself to the sun or be for hours in close, unhealthy apartments in the native city, and this was most injurious to one who had naturally a weak heart. When summoned to see him on 26th August, he was found to have a very feeble, quick, hardly-countable pulse, high fever and dysenteric motions. The dysentery was soon stopped by opium and ipecacuanha, but quinine had little effect on the temperature. Digitalis and stimulants were administered to keep up the circulation, and paraldehyde in full doses was given to relieve the insomnia,

which was the most distressing of the symptoms present. But all was of no avail, death taking place early in the morning of 30th August.

I have never known less sickness among the Chinese. A cool summer generally means an unhealthy one at Ichang, but this year was an exception. There was no return of the 1892 cholera epidemic, and there was very little of the usual malarial fevers. The country-people had a very prosperous year, their three principal crops, wheat, rice and cotton, being remarkably good. There has been general contentment, with the result that a better feeling was shown towards foreigners.

DR. GEORGE R. UNDERWOOD'S REPORT ON THE HEALTH OF KIUKIANG

For the Half-year ended 30th September 1893.

THE health of foreigners residing at this port has, during the past six months, been about the average. We had a comparatively cool summer, and people generally have suffered less from the effects of heat than in 1892.

As usual, we were fortunate in having no epidemic of any kind. There were three cases of typhoid fever, two in the Concession and the third in the city. In all, the disease ran a favourable course, with the exception of one, in which necrosis of a portion of the tibia was a sequela. With several possible sources of origin, it is most probable that river water, contaminated by the excreta of typhoid patients in native boats anchored in the creek above the Concession, was the medium by which the contagium was carried in two of the cases. At the same time, it must not be forgotten that our milkmen, who live outside the Concession, are Chinese, and do not recognise, in washing their dairy utensils, any important difference between water apparently pure and water which has been boiled. It would be unfair to them to suggest a more direct use of impure water, because the milk supplied is certainly good and there is plenty of it. In the Concession there is, fortunately, no system of drainage except for rain water, refuse water being emptied into the river; so that sewage gases do not count in the etiology of disease. With regard to the case which occurred in the city, as it entails much less labour on the water coolies to get the domestic supply from a well near at hand than from the river, whence they ought to bring it, one can readily understand the cause. In the city, too, one may be poisoned by sewer gas. Last year a foreigner living in a native house there had a severe attack of typhoid. His bedroom was close to the flagged front courtyard of the house, and in a corner of this court the shutters used for enclosing the guest hall in winter were piled up. The patient got well, and cold weather coming, he had the shutters taken from the corner. Soon after his attention was attracted to a flag—in the corner—which had a stone resting on it, and around this stone the surface of the flag was always damp. Under the stone was a round opening, 2 inches wide, and from this came an odour which had often been noticed without the cause being discovered. The flag was raised, and on digging a little a large brick-built sewer was exposed, which ran across the court parallel to the street close by, and doubtless across the courts of adjoining houses. It was only partially closed, and the stench was intolerable. The foreigner changed his residence as soon as possible. There were no cases of other continued fevers.

Twenty-three residents—a large proportion in a population of 100—had malarial fever in one form or other. In most instances it might be described as "a touch of fever," lasting for a day or two only. Two cases were more persistent, and in one of them the temperature

rose daily to 104°–105°, falling afterwards to 98°.4–99°. Quinine proved effectual after seven days. The other patient had repeated attacks during the summer, and arsenic had a better effect than quinine. A change to Chefoo completed the cure.

For the Chinese in and around Kiukiang the season was certainly an unhealthy one. Continued fevers were prevalent, and in the autumn the number of those who suffered from malarial affections was quite beyond the average. 3,854 patients came to the hospital for treatment, and of these, 461 were taken in. Many of these latter were kept in only one or two days, for some minor operation. 504 came suffering from ague. The varying ratio between the different forms of this affection as the season went on is very interesting. In the first three months, quartan was the more prevalent; but in the last three, tertian and quotidian predominated enormously.

	Quotidian.	Tertian.	Quartan.
April	3	3	24
May	4	7	16
June	4	17	7
July	27	55	8
August	32	111	22
September	53	101	9

There were a very few cases of mixed forms.

Sixty-nine cases of continued fever—typhoid, typhus and simple continued—were treated. These ailments were very prevalent outside, and only a small proportion came to the hospital, the majority of those who came being men whose homes are at a distance and who earn their living in Kiukiang. Those living in the neighbourhood, when very ill and not expecting to recover, prefer to stay at home and die there, and even of those in the hospital, when there is no longer any hope, a large proportion are taken away by their friends.

In the half-year 298 ophthalmic patients were examined. As usual, the majority were suffering from affections of the lids and conjunctivæ, and many cases were so advanced that little could be done for them. Only nine cataract cases were seen. The following is perhaps worthy of record:—

Chu, a boy of 14, came from Fu-chou, Kiangsi, complaining of blindness and pain in his left eye and of epileptiform attacks. He was pale and delicate-looking, and all the time held a handkerchief over his left eye, now and then mopping up the tears which would flow on the least exposure to light. There was also photophobia of the right eye, with a certain amount of injection, but vision was not impaired. He said that four months before coming he had accidentally cut his eye with a fish-bone, and all his ailments had followed on this injury. There was a scar on the lower and inner angle of the left eye, at the junction of the sclerotic and cornea—involving the latter,—about 4 millimètres in length, and the iris was bound to the posterior corneal surface at the scar. The pupil was drawn towards the scar and all but occluded, and the tension of the eyeball was - 2. At least once daily he had an epileptiform attack, one day more another day less severe in character. Enucleation was performed, and the case went on all right. The first time the bandage was taken off there was a slight seizure, which was not repeated. For nearly three weeks the boy kept the handkerchief over the stump, more from habit than necessity, it would seem, and then gave it up altogether. With the removal of the left eye, the irritability of the right disappeared, and he left at the end of six weeks quite well.

Another eye patient, suffering from acute conjunctivitis, was treating himself in a way not seen at the hospital before, though it is well known in the neighbourhood. He was wearing, under the upper lid of his right eye, the solid end of a marine univalve shell. The apex was rounded off, and the surface towards the open end was ground smooth, the whole presenting the appearance of a split pea. The smooth flat surface was towards the eyeball and the rounded surface of the extremity of the shell towards the conjunctival surface of the upper lid. It would certainly have an effect in acute conjunctivitis, though not the desired one. I am afraid that foreign patients would not tolerate that method of treatment; but the native seems not only to endure it, but to find it not unpleasant. The same shell is used in dystocia, the patient swallowing it, and labour coming to an end soon after; and it is said that one specimen is not infrequently used for both purposes. These shells are sold by Buddhist priests in this neighbourhood.

Of opium suicides, 22 were treated, and of these, 12 were seen in August and September. There were nine deaths—a large per-centage, but this is not to be wondered at when one considers that the would-be suicide has probably been under the influence of the drug for hours before being brought to the hospital and often has to be carried a long distance. It is very difficult in this part of China to learn how much opium has been taken, and when; and one very rarely learns the true motive. Desire for revenge seems, in very many instances, to be the chief reason. In one case lately the motive alleged was the curious one that the patient's tailor had made a new garment so badly that she preferred death to wearing it. The stomach pump was for her a disagreeable but efficacious necessity; and the tailor has doubtless many times since regretted his want of care.

Two cases of self-inflicted injury, and from very different yet thoroughly Chinese motives, came under observation:—

Tai, aged 24, residing near Shui-chang, as a last resource, cut a piece of flesh from his left arm, to make a revivifying soup for his aged father. The circular wound, on the outer side of his upper arm, was about 2 inches in diameter, and a piece of muscular tissue, as well as the overlying cellular structures, had been cut away. It healed readily enough. The filial piety of his boy was of no avail, for the old man swiftly passed away.

Ablation of the penis was the injury in the other case. The inflicter was in the hands of yamên runners, to be taken to Kiukiang on a charge of having committed theft near his home, a few miles from here. He was very much afraid, and getting hold of a pair of scissors, he all but completed separation. The anterior part of the organ was hanging by a tag of skin when he arrived at the hospital three days after. The hæmorrhage must have been considerable, and he used it to the utmost advantage. The runners were so much alarmed that they let him go and, fearing to be accused of his death, started at once for home.

DR. ROBERT H. COX'S REPORT ON THE HEALTH OF WUHU

For the Half-year ended 30th September 1893.

THE general health of the foreign community of this port, now about 60 persons, was below the average standard during the six months under review. This result was probably due to the exceptionally cool summer. The climate during July and August resembled that of September (our most unhealthy month) in ordinary years, and malarial fevers, as they usually do, made their appearance with the cool weather.

There were two births. One of the children died a few weeks later.

The majority of the cases treated were remittent and intermittent malarial, all of which yielded to the exhibition of quinine, with the exception of one, in which it failed, though persevered in for nearly a month. A voyage seaward, however, resulted in recovery, improvement beginning immediately on leaving the port.

Two cases of dysentery were successfully treated by milk diet and ipecacuanha.

It is much to be regretted that most of the dwelling-houses of the foreign residents are situated on low ground, only a few feet above the river at high water, when there is plenty of high ground some little distance inland, where malarial infection would not be so likely to occur and where the excessive heat of the summer would be tempered by refreshing breezes. The missionaries have shown more forethought in the selection of sites. With the exception of the house occupied by the Commissioner of Customs, the best positions are those of the various mission buildings. The members of the only mission (lately established) here who are, as yet, badly housed—and who lost two of their number from dysentery last year—very wisely decided to spend the hottest part of the year at the summer resorts of Japan and Chefoo, with a most satisfactory result as far as health was concerned. Such a procedure, however, is not open to all.

There has been no epidemic among foreigners during this period.

Among the Chinese the past summer will be long remembered as one of almost universal sickness. At Wuhu and in all the rice-growing country round malarial fevers and dysentery created great havoc among the natives. During the last three months, on all the approaches to the native town, patient after patient might be seen in the early morning being carried in to seek advice and treatment from the native medical practitioners, whose houses were crammed and the traffic in the street impeded by those seeking admission. Much rice has been left rotting in the fields, for want of reapers to gather it, and during the harvest wages in many districts were increased fourfold.

A pestilence of some sort was reported from two or three districts, each about 20 or 30 miles from Wuhu; but such information on the subject as could be obtained tended to prove that the disease was remittent fever. It certainly appears to have none of the characteristics of the bubonic plague of the South. The following is a summary of the information supplied me on the subject:—

The incubation period is unknown. The invasion is sudden, the patient having felt perfectly well the day before its onset. More males than females are affected, and of these the majority are young. The people in the country were first attacked, latterly those in towns. The symptoms given include fever; excessive sleepiness; flatulence and vomiting, the matter ejected being of a "greenish yellow" colour; constipation; intense headache; pains in the back, abdomen and limbs. There is no eruption on the skin. Emaciation is looked on as a favourable sign. A crisis appears to take place about the 10th day; those surviving that period usually recover. Cases are mentioned where as many as seven deaths have occurred in one house.

For the appended meteorological table I am indebted to Mr. Tidesurveyor and Harbour Master KINDBLAD.

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	THERMOMETER.		BAROMETER.		RAINFALL.
	Maximum.	Minimum.	Maximum.	Minimum.	
	° *F.*	° *F.*	*Inches*	*Inches*	*Inches*
April	85.0	41.0	30.400	29.600	3.30
May	91.5	49.0	30.160	29.600	6.11
June	97.0	51.0	30.092	29.690	7.29
July	99.5	68.0	29.940	29.580	3.19
August	98.0	63.0	30.100	29.600	3.12
September	92.0	64.0	30.258	29.700	6.31

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF WENCHOW

For the Half-year ended 30th September 1893.

THE health of foreigners was good during the past six months, though the summer has been a trying one, owing to the damp heat which prevailed. During September there was much sickness among the natives, chiefly diarrhœa and fevers.

The following cases have been under treatment:—

Burns of hands.	Incised wound of scrotum.
Diarrhœa.	Remittent fever.
Hepatic congestion.	Uric acid calculus.
Gout.	Worms.

Incised Wound of Scrotum.—In May a somewhat unusual case came under my care. A native was brought to my house in a chair, suffering from a wound in the scrotum, and he had evidently lost much blood, as his clothes were saturated. His story was that while hanging up some clothes he fell from the wall and was hurt. Subsequent inquiries changed the tale. The patient, after having drunk a fair amount of samshu, repaired to one of the brothels of the city, and there received from one of the inmates the wound he showed. After cleansing the parts thoroughly, I found a clean incised wound, measuring $1\frac{1}{4}$ inch. Five sutures were required to bring the edges together. Fortunately there was no injury to testicle or penis. Under iodoform dressings the wound healed kindly.

I append an abstract from the Customs meteorological observations taken at Wenchow (latitude, 28° 1′ 30″ N.; longitude, 120° 38′ $28\frac{1}{2}$″ E.).

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	BAROMETER.		THERMOMETER.		RAINFALL.	
	Maximum.	Minimum.	Maximum.	Minimum.	No. of Days on which Rain fell.	Quantity.
	Inches	*Inches*	° *F.*	° *F.*		*Inches*
April	30.340	29.650	74	50	18	3.53
May	30.200	29.740	81	60	13	3.38
June	30.054	29.730	87	60	17	8.40
July	29.940	29.568	91	74	11	6.05
August	30.036	29.670	90	75	15	6.17
September	30.140	29.394	93	75	19	11.11

DR. T. RENNIE'S REPORT ON THE HEALTH OF FOOCHOW

For the Half-year ended 30th September 1893.

THE health of foreign residents and natives during the period under notice was unusually good. In May and June, among natives, a mild epidemic of scarlet fever existed, and four cases occurred among the foreign children of one of the large missionary societies; towards the end of September several cases of influenza were observed among Europeans and natives; but in the intervening months little sickness of any sort occurred either among Europeans or natives. Neither diarrhœa, usually more or less common among Chinese during the hot months, nor anything of the nature of epidemic cholera prevailed.

Among foreign residents in the port and neighbourhood there were four births and three deaths. The causes of death were as follows:—

1. A child, aged 7 years, died (in the interior) of malarial fever and cerebral congestion.

2. An Eastern Portuguese, aged 56 years, who declined a surgical operation for scirrhus of the tongue, died of hæmorrhage, from extension of the ulceration to the internal carotid artery.

3. A European, aged 35, died of cerebral hyperæmia and cerebral meningitis, not of climatic origin.

For the following extracts from the Pagoda Anchorage Customs meteorological tables I am indebted to Mr. H. A. MCINNES, the Harbour Master:—

METEOROLOGICAL TABLE, April to September 1893.

MONTH.	WIND.					BAROMETER.				THERMOMETER.					WEATHER.		
	No. of Days N. to E.	No. of Days E. to S.	No. of Days S. to W.	No. of Days W. to N.	No. of Days Calm.	Highest by Day.	Lowest by Day.	Highest by Night.	Lowest by Night.	Maximum.	Minimum.	Mean.	Averages.		No. of Days Rain.	Rainfall.	No. of Days Fog.
													Wet Bulb.	Dry Bulb.			
						Inches	*Inches*	*Inches*	*Inches*	° *F.*	° *F.*	° *F.*	° *F.*	° *F.*		*Inch.*	
April	18	6	2	1	3	30.42	29.83	30.39	29.81	84	41	62.5	64.17	61.19	10	4.57	6
May	21	5	1	2	2	30.24	29.80	30.21	29.73	86	56	71.0	71.71	69.75	12	4.61	4
June	11	2	14	3	...	30.11	29.75	30.16	29.82	95	64	79.5	79.59	76.59	10	2.88	2
July	10	5	13	2	1	30.03	29.62	30.02	29.65	99	73	86.0	82.02	78.45	8	9.98	...
August	16	3	12	...	...	30.10	29.73	30.12	29.80	96	76	86.0	83.06	80.45	4	1.74	...
September	25	2	2	1	...	30.15	29.55	30.15	29.62	96	72	84.0	81.01	78.77	17	12.63	...

On the whole, the summer could not be considered excessively hot, but the mean of the minima for the hot months was unusually high. Changes of temperature were slight and infrequent, and although many complained of warm, uncomfortable, sleepless nights, still to the equable condition of temperature may be attributed the healthy summer and the absence of bowel affections so frequent in seasons noted for great changes of temperature.

The rainfall was small and fitful.

Early in September we were visited by a severe wind storm, but, on the whole, there was less atmospheric disturbance than usual.

DR. ALEXANDER JAMIESON'S REPORT ON THE HEALTH OF SHANGHAI

For the Year ended 30th September 1893.

THE autumn of 1892 opened with the violent typhoon of the 8th to the 12th October, in which the *Bokhara* was wrecked and which inflicted incalculable loss on the native fishermen and junk-traders along the coast. Shanghai and the surrounding district suffered but little; indeed, if we except a slight storm on the 10th November, a furious tempest on the 23rd of the same month, and one brief disturbance on the 27th December, the closing months of the year may, from the point of view of atmospheric commotion, be described as calm and uneventful. The drought of summer and early autumn persisted through October, and was shared by the entire coast. The rainfall was one-sixth of the average, and the number of wet days was but four, against an average of 10. On two of these four days, moreover, the fall consisted of the lightest imaginable showers. The long period of dryness, which had reduced cultivators to despair, came to an end in November, when, in spite of long intervals during which no rain fell, both the number of rainy days and the amount of rain were largely in excess of the average. December, however, was again considerably below the average, the amount of rain being but one-sixth of the mean for that month during the 20 previous years. The winter was excessively severe. In October the mean temperature was 2°, and in December 4°, below the average; and although the mean for November was 2° higher than that calculated, this was due to extreme variability, inasmuch as periods of unusually low temperature were registered during the month. The first frost for the season occurred at 2 A.M. on the 26th November, and the remaining days of the month were intensely cold and perfectly dry. This marked the beginning of winter. In December there were but few days on which the mercury did not fall to 32° or below it. The maximum temperature registered in October was 80° (6th); the minimum, 42° (30th). In November the maximum was 73°.6 (9th); the minimum, 26°.6 (27th). The maximum for December was 62°.8 (30th); the minimum, 21°.7 (18th).

The year 1893 began with great severity. Snow fell heavily, and from the middle to the end of the month snow storms occurred frequently along the entire coast, extending as far south as the tropic of Cancer. Snow continued to fall throughout the first half of February. There were no great atmospheric disturbances during the first quarter of the year, the one thunder storm which visited the neighbourhood of Shanghai having passed at some distance from us, so that only its far-off echoes were heard. January and February were intensely cold, due in the former month, when the mean temperature was 5° below the average, to relatively short spells of extreme cold with snow, but in the latter, with a mean 3° less than the mean for 20 years, it was due to the low temperature of the entire month. Thus while from 7 P.M. on the 12th January to 11 A.M. on the 20th the mercury never rose to 32°, the

maximum temperature for the month was 61°.3 (on the 7th), and the minimum—which was the lowest ever registered at Zikawei—was 10°.22 (at 7 A.M. on the 19th). The maximum for February was 51° (on the 23rd), and the minimum, 22°.6 (on the 12th). Spring came in with March, for after the 5th there was no more frost. The average for the month was almost exactly that calculated from previous years, but the variations were very wide. The maximum temperature registered in March was 72° (28th); the minimum, 23° (1st). January was rainy in the intervals of freezing. The number of rainy days was 50 per cent., and the quantity of rainfall 33 per cent., higher than the average. Rain fell every day between the 6th and 13th and between the 26th and 31st. The rainfall in February was one-half, and in March three-quarters, of the average. In the latter month most of the fall was registered on two days, the 8th and 18th.

April, May and June were calm, only two short heavy blows having occurred in April and one in June. The wind hardly stirred along the coast in May. Neither temperature nor rainfall departed very widely from the average. The mean degree of heat was nearly uniform throughout April, except for one burst of exceptionally high temperature between the 21st and 26th, during which the weather would have been perfectly dry but for a short hail storm on the 22nd. The maximum temperature for April was 82° (on the 23rd); the minimum (on the 6th) was 36°.3. The rainfall was 28 per cent. below the average. In May there were no periods of wide range of temperature. The maximum, 86°, was recorded on the 23rd; the minimum, 45°.7, on the 3rd. There were five days of heavy rain, distributed at equal intervals through the month, the rainfall being thus brought to 18 per cent. above the average. Otherwise, short and light showers were of frequent occurrence. June was marked by wide variations in the degree of heat. The maximum temperature, 100°.4, was reached on the 29th; the minimum, 56°.2, was registered on the 2nd. The rainfall was 23 per cent. below the average. The beginning of summer may be dated from the last week of May.

July was tempestuous: the roll of distant thunder was heard frequently, and there were three particularly heavy blows corresponding to three typhoons which approached Shanghai on the 13th, 21st and 29th respectively. The wind was southerly throughout the month, and the temperature, although not exceeding the average, ranged very high with wide variations to points unusually low. The nights were excessively hot, and during the torrential rains of the middle of the month the weather was singularly oppressive. The maximum, 100°.4, was registered on the 8th, and the minimum, 71°.4, on the 16th. Although the number of wet days was exactly the mean of the previous 20 years, the quantity of rainfall was less than the average by nearly 25 per cent. August was calm. Storms in the distance were frequently heard, and there were two short but heavy gales on the 11th and 15th corresponding to typhoons. The temperature as to height and range closely resembled July: the nights were generally hot, and this heat was, as in the preceding month, rendered more trying by torrents of rain on the first five days, the 11th and 31st, and during the period extending from the 15th to the 25th. The quantity of rainfall was more than double the average. The maximum temperature was 98°, on the 3rd, and the minimum, 66°.6, on the 25th. Autumn may be said to have begun in the middle of September, when the north-east monsoon was established. Notwithstanding this, the latter days of the month were extremely hot. Typhoons were

frequent on the coast, but only one approached Shanghai, causing a gale on the 3rd. The mean temperature of September was unusually high, 2°.5 above the average. The maximum temperature was 92°, on the 25th, and the minimum, 62°, on the 16th. As in August, heavy rains, especially during the first nine days, intensified the effects of severe heat. The number of wet days was 16, as against an average of 11, and the quantity of rainfall was 16 per cent. greater than the mean.

The years 1892 and 1893 were marked by the absence of cholera among the foreign residents in Shanghai, and, so far as is known, by the infrequency of the disease among natives.

Small-pox was unusually prevalent and fatal among foreigners during the early months of 1893.

In one semi-confluent case in a man bearing excellent childhood marks of vaccination, and whom I had myself revaccinated successfully six months before, severe periostitis of the crests of both tibiæ occurred a few weeks after his discharge, and lasted for a little more than a month. The pain, which was extremely severe, was most intense at night. There was no reason to suspect syphilis. Superficial necrosis of bone was threatened, but was fortunately escaped. I had never before observed this sequel of small-pox, and it must, I think, be rare.

The disease made its appearance during the last three months of 1892, and caused a miniature panic among the community, the members of which presented themselves literally by hundreds for revaccination. There were several cases of varicella and of measles in November, and parotitis was of frequent occurrence from December onward. All the ordinary catarrhal affections were common, such as simple and inflammatory diarrhœa, bronchitis and pharyngitis. There were many cases of ordinary intermittent fever, mostly quotidian, though a few were of true tertian type.

I am convinced that in many instances quotidian fever is wrongly diagnosed as tertian, in consequence of neglect to observe the bodily temperature at night. It often happens that a patient who has a shiver, rise of temperature and sweat on alternate days, sleeps badly on alternate nights, is disturbed by horrible dreams and wakes drenched in perspiration or with a sensation of extreme weakness. I have notes of many such cases, where the temperature taken between 1 and 4 A.M. has been as high as 103°. Very frequently also, in apparently quotidian cases, there is a night or rather early morning paroxysm; and in such cases it generally happens that the day maximum is reached about 5.30 P.M., and the night maximum about 3.30 A.M. The recognition of the exact form of the daily curve is of great importance as a guide to the most effective administration of quinine with respect to time. Commonly, I think, the best results are obtained from two doses given about 9.30 A.M. and 7.30 P.M.

Several cases of congestion of the liver, due apparently to malaria, came under my care during the winter of 1892–93.

During the first three months of 1893 eruptive fevers increased in frequency. I have already mentioned the large mortality due to small-pox. Measles, chicken-pox and scarlatina, though by no means epidemic, were widely spread. The prevalence of catarrhal affections, already remarkable during the early winter months, continued, laryngitis and pneumonia appearing now more often.

I encountered none of the graver forms of malarial disease during the spring and early summer months. Hot weather coming on early, several cases of heat malaise presented them-

selves in May and June, and I found obstinate sleeplessness, due to some vague climatic condition, a constant cause of complaint. Certain years, of which 1893 was an example, bring, along with the appearance of the spring fruits (mangoes, mangosteens, fresh lichees and strawberries), what may almost be called epidemics of urticaria. Whether the greater frequency of this tormenting condition is due to anything special, not always present, in the fruit eaten, or to some fugitively increased liability to intoxication dependent on an unknown atmospheric condition, I cannot say. Probably to the latter, inasmuch as all the fruits mentioned, those grown in Shanghai as well as those imported from the south, appear to acquire temporary virulence.

The causation of urticaria is exceedingly capricious. In winter mollusca and crustacea sometimes are and sometimes are not almost inevitable in their effects. In spring the fruits mentioned above, and fish at all times, may induce the disease in persons not specially sensitive. The familiar varnish poisoning, more often due to inhalation of the varnish vapour than to actual contact with the varnish itself, occasionally attacks people who at other times can safely defy it. It is true that as a general rule people are either always obnoxious to the action of this poison or always completely resistant, but exceptions are now and then observed. I had once a lady under my care who was unaffected by any of the ordinary causes of urticaria, but who invariably suffered horribly whenever she ate cold mutton.

Small-pox continued to occur during the summer. There were two cases in the General Hospital in July. Remittent fever of the old-fashioned type was unusually frequent in early autumn. Heat malaise was, of course, common, and I heard of, but did not see, cases of sunstroke.

Unsuspected cardiac weakness often betrays itself under the stress of great atmospheric heat, especially when accompanied by saturation of the air with moisture. The large amount of alcohol consumed in the form of more or less diluted cooling drinks contributes largely to this result; while the often unreasonable quantity of liquid swallowed, irrespective of its nature, induces distaste for food, and, especially when poured into the stomach immediately before, during, or immediately after meals, is an obvious cause of dyspepsia, the stomach juices being so weakened by flooding that they are incapable of exerting their natural and necessary solvent action on food.

Several cases of whooping-cough were noted among children, but they were not sufficiently numerous to constitute an epidemic. True dysentery, requiring specific treatment, became common, and diarrhœa, always prevalent during the hot months, and caused or aggravated by personal imprudence in diet or by exposure to the chances of sudden chills, helped to swell the sick lists. There was, however, but one fatal case. In several instances dysenteric symptoms supervened on what at the beginning was simple catarrhal diarrhœa; but rest in bed, with careful attention to diet and the minimum of medicinal treatment, generally sufficed to allay them.

I believe that a great deal of confusion would be avoided if the term "dysentery" were applied to these cases of inflammatory diarrhœa with tormina, tenesmus and expulsion of blood and mucus, but in which the general reaction is not marked; and that of "specific ulcerative colitis" to true tropical dysentery which requires specific treatment with ipecacuanha.

The following death returns are noteworthy chiefly on account of the large mortality from small-pox and from diseases of the nervous system, and the absence of both cholera and dysentery as causes of death.

Deaths among Foreigners from 1st October 1892 to 30th September 1893.

Cause of Death.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Total.
Small-pox	...	...	2 1*	2 2*1†	1 2*	1 1*	1*	...	...	...	...	...	14
Scarlet fever	...	...	...	...	1*	...	1†	...	...	...	...	...	2
Measles	...	...	...	...	...	1†	...	...	...	...	...	...	1
Enteric fever	1*	1	...	...	...	...	1*	1	...	...	...	1*	5
Remittent fever	...	...	...	...	...	...	...	...	...	...	...	1†	1
Diphtheria	...	...	...	...	...	...	1†	...	...	...	...	...	1
Tuberculosis	1	...	...	...	...	...	...	...	...	...	...	...	1
Phthisis	1 1*	...	...	...	...	...	1	1	...	1	1*	...	6
Bright's disease	1*	1	...	...	...	...	...	...	...	...	...	...	2
Alcoholism	...	...	1	...	...	...	...	...	...	...	...	...	1
Asthenia	...	...	...	...	1†	...	...	...	...	...	...	...	1
Atrophy	...	...	...	...	...	...	...	...	...	...	...	1†	1
Anæmia	...	...	...	1*	...	...	...	...	...	...	...	...	1
Old age	...	...	...	...	...	...	...	...	...	...	...	1	1
Meningitis	...	...	...	...	...	...	1	1†	...	...	...	...	2
Hydrocephalus	...	...	...	...	...	...	...	...	1†	...	...	...	1
Hemiplegia	...	...	...	...	1	...	...	...	...	...	...	...	1
Apoplexy	...	...	...	1*	2	1	1	...	1	...	1	...	7
Cerebral abscess	...	...	...	...	...	...	...	...	...	1*	...	...	1
Cerebral embolism	...	...	...	...	...	...	1	...	...	...	...	...	1
Insolation	...	...	...	...	...	...	...	...	...	...	1*	1	2
Encephalitis	...	...	...	1†	...	...	...	...	...	...	...	...	1
Epilepsy	...	...	1*	...	...	...	...	...	...	...	...	...	1
Convulsions	...	...	...	...	...	1†	...	1†	...	...	...	...	2
Acute mania	1*	...	...	...	...	...	...	...	...	...	...	...	1
Beri-beri	...	...	...	...	...	...	...	...	...	1*	...	...	1
Heart disease	1*	...	...	...	1	...	...	...	...	1	...	...	3
Bronchitis	...	...	2	2	...	...	1†	...	...	...	...	...	5
Pneumonia	...	...	...	1†	...	1	...	...	1*	...	...	...	3
Atelectasis	1†	...	...	...	...	...	...	...	...	...	...	...	1
Peritonitis	...	...	1	1	...	...	...	...	...	...	...	...	2
Acute colitis	...	...	...	...	...	...	...	...	...	...	...	1†	1
Diarrhœa	...	1	...	...	...	...	...	1†	...	1	...	...	3
Hepatitis	...	...	...	...	...	1	...	...	...	...	...	...	1
Cirrhosis of liver	...	...	1	...	...	...	1*	...	...	...	...	...	2
Cancer	...	...	...	1	...	...	1	...	...	...	...	...	2
Disease of bone	...	1*	1 1*	...	...	...	...	...	...	...	...	...	3
Tumour	...	2	...	...	...	...	...	...	...	...	...	...	2
Injury and accident	...	1*	...	...	...	...	...	...	...	...	1*	...	2
Drowning	...	...	...	...	...	...	1 1*	2*	...	...	1*	1*	6
Uncertified	1	...	...	...	...	1	1*	1*	...	...	...	...	4
Total	9	7	11	13	9	8	14	8	3	5	5	7	99

* Non-residents (35). † Children (17).

II.—SPECIAL SERIES.