CHINA.

IMPERIAL MARITIME CUSTOMS.

II.—SPECIAL SERIES: No. 2.

MEDICAL REPORTS,

FOR THE HALF-YEAR ENDED 30TH SEPTEMBER 1887.

34th Issue.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

SHANGHAI:
PUBLISHED AT THE STATISTICAL DEPARTMENT OF THE INSPECTORATE GENERAL OF CUSTOMS.
AND SOLD BY
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LONDON: P. S. KING & SON, CANADA BUILDING, KING STREET, WESTMINSTER, S.W.
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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*, *Takow*, *Kiukiang*, *Amoy*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

SHANGHAI, *21st December 1889.*

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 Foochow, pp. 3–6;

Report on the Health of Tamsui and Kelung, pp. 7–11;

Report on the Health of Amoy, pp. 12–14; each of these referring to the year ended 30th September 1887.

Report on the Health of Chefoo, pp. 1, 2;

Report on the Health of Hoihow (Kiungchow), pp. 15–16;

Report on the Health of Shanghai, pp. 17–23;

Report on the Health of Pakhoi, p. 31; each of these referring to the half-year ended 30th September 1887.

Clinical Studies of disease as observed in China, pp. 24–30.

Psilosis or Sprue, or Diarrhœa, pp. 32–36.

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:—

W. A. HENDERSON, L.R.C.S.Ed., L.R.C.P.Ed. ..... Chefoo.

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

A. RENNIE, M.B., CH.M. ..... Tamsui and Kelung.

B. S. RINGER, M.R.C.S., L.S.A. ..... Amoy.

J. H. LOWRY, L.R.C.P.Ed., L.R.C.S.Ed. ..... Hoihow (Kiungchow).

R. A. JAMIESON, M.A., M.D., M.R.C.S. ..... Shanghai.

R. H. COX, L.K.&Q.C.P., L.R.C.S.I. ..... Pakhoi.

C. BEGG, M.B., CH.M. ..... Hankow.

DR. W. A. HENDERSON'S REPORT ON THE HEALTH OF CHEFOO

For the Half-year ended 30th September 1887.

THE health of the foreign community during the late hot season was good, deviating but little from its usual excellent standard, and compelling me to seek material for this Report among the natives. In my last Report the establishment of a native hospital in the town was announced, and an account of the disorders met with was given. Now I would merely supplement what was then written.

In all, 5,725 persons applied for relief. In May and June continued fever was epidemic. Of persons stricken, 189 presented themselves, of whom 126 were in May and 63 in June. Six only exhibited the characteristic mottling of typhus. The probable cause of continued fever, other than typical typhus, at this season is that the poor, during the increase of temperature in spring and summer, do not completely discard their winter clothing, saturated as it is with secretions, other insanitary conditions doubtless co-operating. Cholera broke out towards the end of September, carrying off several hundreds of people, which numbers rumour greatly exaggerated. In connexion with this outbreak it is to be noted that the season was very dry. For the six months beginning with May and ending, as I write this Report, with October, the rainfall was but 10.75 inches; rain fell only during 172 hours, and the mean range between wet and dry bulbs was 7°.5. The well water, upon which the people entirely depend, became very low, and quite inadequate for sanitary purposes, while there was only half the average autumn crop. Further, it is to be remembered that the population is excessive, and that there is much poverty. It is said that formerly 5 *mow* of land was necessary for the support of an adult, but that since the introduction of the sweet potato, 40 years ago, 1 *mow* suffices.

Among the surgical cases the two following are the most interesting:—

In June a soldier came to the hospital in a dying state from paralysis of the abductor muscles of the larynx. As he was in a state of partial collapse from the rapidly developing asphyxia, tracheotomy was at once performed, when free respiration was established. He was extremely emaciated, with a history of specific disease and recent continued fever. After the operation he soon began to put on flesh. Treatment has failed to relieve the paralysis; still he enjoys life, and is employed as a gatekeeper in a neighbouring barrack. When expressing gratitude he closes the tracheal opening with his finger, and so he can grunt his thanks, but should the finger be retained for any length of time, asphyxia sets in.

Another case illustrates the aptitude of the Chinese for surgery. The patient, a man of 60, had both nostrils filled with polypi, and a very large one growing from the posterior nares, hanging downwards into the pharynx and pressing forward the soft palate and uvula. A snare was extemporised, the noose of which I passed round the polypus in the left nostril, and left the case in the hands of my assistant LI SE-GU, telling him to keep the noose tight till the polypus came away, and that I intended to similarly strangulate the others. Upon my return I found that he had removed all the polypi. He had passed the snare

along a nostril, bringing the noose down into the pharynx, slipped it over the tumour till it surrounded the root growing from the posterior nares, which he accordingly strangulated. Though this is the only way in which the noose could have been applied, yet for a Chinaman, without any literature on the subject or knowledge of the operation further than the anatomy of the parts indicate, to spontaneously attempt such a procedure is certainly worth noting. The whole mass which he thus removed weighs 3 oz.

The following table of temperature is from Mr. E. V. BRENAN'S meteorological record for 1887:—

———	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	°	°	°	°	°	°	°	°	°	°	°	°
Mean maximum.....	32	40	50	65	73	84	86	88	77	73	60	46
Mean minimum.....	23	27	33	46	55	66	70	73	63	54	39	27

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

For the Year ended 30th September 1887.

DURING the year among foreign residents few cases of serious illness occurred, although the unhealthy conditions existing at the close of the past year were for some time continued into the present year.

In the course of the 12 months there were seven births and one death.

The cause of death was acute tuberculo-pneumonic phthisis. Deceased, aged 29 years, had, previous to coming here, resided about eight months in Singapore. During the latter period of his residence in the South, he had felt generally ill and had suffered much from dysenteric diarrhœa. The voyage up the coast had, he thought, brought on a fresh cold. On arrival in Foochow, on the 25th November 1886, he was very ill, terribly emaciated, with clubbing of fingers, and complained of a troublesome cough. Examination of the chest showed that he not only suffered from bronchial catarrh of recent origin, but that for some time more serious lung mischief must have existed. He also suffered from diarrhœa, but no organic disorder of liver or spleen could be detected. When he went to Singapore he weighed 156 lb., and on arrival here, although 6 feet in height, he weighed only 125 lb. There was considerable pyrexia, and his case seemed anything but hopeful. The sudden change of climate at such an advanced stage of the disease seemed to give it fresh vigour. In spite of every comfort and the administration of suitable food and remedies, there was no attempt at improvement. Soon, large cavities formed in both lungs, and night sweats, diarrhœa, hectic fever, with increasing loss of flesh and strength, caused death by exhaustion on 29th January 1887.

The diseases prevalent among foreign residents were as follows:—In October and November intermittent fever, remittent fever, congested liver, dysentery, and carbuncular boils were unusually abundant; many children suffered from impetigo contagiosa; trifling wounds refused to heal; and, generally, people felt out of sorts. During December, January and February six cases of small-pox after vaccination, remarkable for the severity of their general symptoms and abundant eruption, occurred. In January, February, March and April catarrhs, sore throat, muscular rheumatism, urticaria, neuralgia and sciatica were frequently noticed. In May and June ague and diarrhœa were the prevalent troubles. From this date up to the end of the 12 months, excepting boils, the ordinary climatic diseases were rare. In August two residents, suffering from functional disorder of the nervous system, caused by excessive mental and bodily fatigue and the hot summer, were sent home. One case of miscarriage and six cases of profuse menorrhagia seemed to me to be entirely due to the excessive and prolonged heat of the past summer. In July and August I met with two cases of acute pneumonia, a disease which at this season is rarely encountered in Europeans.

Both patients were healthy males, under 20 years of age. In both only the lower lobe of the right lung was affected. The exciting cause was, doubtless, exposure of the perspiring body to a breeze at night. As a predisposing cause, excess of food and wine at table and drinks between meals may have had considerable influence in rendering internal organs more liable to inflammatory conditions. Both cases terminated in complete recovery. In one of them the antipyretic properties of antifebrine were well illustrated. On the second evening of illness a temperature of 104°.5 was accompanied by much prostration and head symptoms. A 10-grain dose of antifebrine dissolved in a wine glass of weak brandy and water was given. In 20 minutes the action of the remedy commenced, and in an hour the temperature fell to 101°.8. Sleep for seven hours followed, when a temperature of 102° was recorded. During the first 24 hours of administration of antifebrine, 30 grains in 3 doses were required to keep the temperature under 103°, but on the four following days 20 grains daily in 5-grain doses sufficed to keep the temperature under 102°. Three hours after the third dose of 10 grains had been given, there was some blueness of the lips and nails, but otherwise the remedy acted in a most satisfactory manner. Thirst, headache, depression and other feverish symptoms for a time disappeared. The reduction of temperature was accompanied by profuse perspiration, which soaked sleeping-clothes, sheets and mattress.

In January an elderly China resident had a severe attack of renal colic. At once measures to relieve pain were adopted, and the milk and lithia-water treatment commenced.

After drenching for three days, six renal calculi, about the size of peas, and composed of uric acid, were passed. Out of a residence of 30 years in different ports in China, this patient had on two occasions spent seven years in Foochow. While here he had frequently suffered from renal colic (although no calculi had been observed to pass till his present illness) and rheumatism, whereas in other ports he had never suffered from either of these diseases.

In May an adult male resident had a slight attack of measles.

During the year there was no typhoid fever.

In the course of the past six months a sanatarium was built on the most northerly of the mountain ranges which surround the valley in the centre of which the foreign houses are built. It stands on the side of a hill, at an elevation of about 2,400 feet above the sea level. While the hillside affords to the house ample protection from the full force of a north-east wind, there is no barrier to the free circulation of pure mountain air from all other directions. An adjacent spring gives an abundant supply of clear, cold water. From the house and from the numerous walks among the neighbouring mountain tops, views varied in magnificence and extent can be had. Until the middle of August the building was not ready for occupation, but the benefit to health derived by ladies and children who spent the remaining six weeks of the hot season there was most remarkable. From readings of standard maximum and minimum Fahrenheit thermometers placed in the dining-room of the sanatarium, the highest temperature recorded from 21st August till 30th September was 82°, on 21st September; and the lowest, 65°.5, on 15th September. The average of the maxima for this period was 75°, and the average of the minima 68°. The temperature ranged from 10° to 15° below that in houses in the Settlement.

In spite of cooling breezes on most days, the past summer was considered by old residents the hottest experienced for many years. In July and August there were few days on which the thermometer did not mark higher than 90°.

For the following extracts from the Pagoda Anchorage meteorological tables I am indebted to the Harbour Master:—

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.	Max.	Min.	Mean.	Averages. Wet Bulb.	Averages. Dry Bulb.	No. of Days Rain.	Rainfall.	No. of Days Fog.
1886.						*Inches.*	*Inches.*	*Inches.*	*Inches.*	°	°	°	°	°	*D. h.*	*Inches.*	*D. h.*
October	20	4	1	4	2	30.47	29.91	30.37	29.90	91.0	60.0	75.50	68.00	75.00	3 0	0.26	1 0
November	21	3	1	4	1	30.50	29.98	30.45	30.00	78.0	63.0	70.50	58.00	64.00	1 0	0.07	2 0
December	17	3	...	10	1	30.54	30.13	30.48	30.15	71.0	38.0	54.50	49.75	54.75	2 12	1.43	...
1887.																	
January	21	3	...	5	2	30.58	30.05	30.46	30.08	72.0	43.0	57.50	51.75	55.50	8 0	6.50	4 0
February	18	4	...	4	2	30.62	30.09	30.57	30.14	74.5	38.5	56.50	56.00	51.00	7 0	1.34	2 0
March	18	7	1	4	1	30.44	30.00	30.58	29.96	76.5	41.5	59.00	54.00	57.50	8 14	3.94	6 0
April	13	9	2	5	1	30.45	29.84	30.40	29.85	88.0	43.0	65.50	59.50	67.25	7 8	3.29	3 0
May	16	6	2	5	2	30.20	29.77	30.26	29.88	88.0	53.0	70.50	67.00	71.50	8 6	2.96	2 0
June	5	4	15	3	3	30.15	29.67	30.07	29.71	96.0	66.0	81.00	75.25	80.25	4 11	2.07	...
July	10	7	8	4	2	30.13	29.60	30.10	29.60	100.0	68.5	84.25	78.25	86.00	9 8	9.72	...
August	4	9	9	6	3	30.28	29.67	30.11	29.69	101.0	72.0	86.50	77.75	89.75	2 0	0.20	...
September	21	3	3	2	1	30.16	29.58	30.15	29.64	98.0	72.5	85.25	75.25	83.00	12 12	5.56	...

Among natives, in October and November remittent fever was said to have been more prevalent and more fatal than it had been for 20 years. In winter and spring small-pox, chicken-pox, measles and mumps were unusually common; five cases of scarlet fever, with one death, were treated at the American Methodist girls' school. I heard of no other cases of this disease. In the course of the summer several cases of beri-beri among Cantonese residents came under observation; but the hot season was a remarkably healthy one, and natives were free from other diseases of an epidemic nature.

In the place of the native hospital on Changchow Island, which was accidentally burned down in May 1886, the combined generosity of native officials, foreign residents, and native merchants enabled us to procure a more open site, and erect thereon a more substantial and commodious building. Through the aid of members of the Chamber of Commerce a woman's ward was added, and dedicated to the memory of the late Sir HARRY PARKES. The new hospital, though a little more inconveniently placed for city patients, removes, by its isolated position, the constant dread of a fire arising in native property and attacking a crowded hospital with a narrow entrance, which, while the old institution was in use, existed. In April the department for out-door patients was completed, and in June we were ready to receive in-patients. From the increasing numbers of both classes of patients, the new hospital seems to be highly appreciated.

In October, about Foochow and neighbouring districts an epizootic, due to a species of ascaris infesting the intestinal canal of common fowls, proved very fatal among their young.

Chickens so affected suffered from diarrhœa, became emaciated, looked dispirited, and in a few days died. At the outset of the epizootic, in one of the districts whence the fowl supply for the Foochow market is chiefly derived, three natives, after partaking of a meal in which boiled fowls formed a prominent ingredient, died. It was known that the fowls eaten had been infested with entozoa, and the cause of death in the three Chinamen was attributed to a poisonous condition of the flesh of the fowls produced by their worm guests. A philanthropist caused placards recording the event and supposed cause to be circulated throughout the district. The dread inspired by this prevented for some weeks the local consumption of domestic fowls. Foochow poulterers took advantage of the scare to cheaply replenish their stores; but, unfortunately for the dealers, the placards soon followed, and fowls were rendered for some weeks unsaleable. Nothing could be learned of the symptoms preceding the death of the natives; but unless the fowls contained entozoa of the trichina type, some other article of the meal must, I think, have caused death. Here, round worms are very frequently and tape worms are sometimes found in the intestinal canal of fowls. Occasionally chickens suffering from diarrhœa and emaciation die in numbers, and an inflamed intestinal tract, ulcerated here and there, and containing numbers of round worms, is the only apparent cause of death. Both foreign residents and natives must daily consume fowls that have been the hosts of such parasites, but hitherto no harm seems to have resulted.

In September, rinderpest was prevalent in native and foreign dairies.

DR. ALEXANDER RENNIE'S REPORT ON THE HEALTH OF TAMSUI AND KELUNG

For the Year ended 30th September 1887.

DURING the period under review the health of the foreign community has been satisfactory. The climatic conditions have been excellent, with the exception of a higher than average thermometric range during the summer months. Still, the comparatively cool nights rendered the season on the whole far less trying than it proved at the northern ports of China.

Cases of malarial fever have been much fewer and less severe than during the corresponding period of last year. This immunity may be attributed in part to three causes: (*a.*) Less amount of rainfall. The rainfall during the summer months, the period which more immediately concerns us, was, during the six months ended 30th September 1886, 43.54 inches; and during the six months ended 30th September 1887, 33.86 inches, *i.e.*, 20 per cent. less during the summer of this year. Rainfall undoubtedly influences the prevalence of the fever, although experience shows that its effect is manifested, not during the period of rainfall, but in the dry and hot weather succeeding. A soil flooded in the rainy season gives off a certain degree of moisture in the dry season. According to WENZEL'S observations, the temperature curve precedes the fever curve by 20 to 25 days, so that three weeks of increased temperature appear to be the period necessary for the production of the malarial poison and the outbreak of fever. (*b.*) The prevailing winds during June, July and the beginning of August were westerly. These sea breezes are attended with much less fever than the usual land breezes sweeping over a large extent of malarious country. (*c.*) The cessation of earthwork operations in the neighbourhood of the Settlement. During the French invasion and subsequently, great activity was manifested by the Chinese military authorities in throwing up lines of earthworks for coast defence. As I mentioned in a previous Report, the freshly upturned soil was a fertile source of the disease, both to the soldiers engaged in the work and to residents in the vicinity. During the present year the military force has been turned to account in railway construction in another part of the island, and the building of forts in this neighbourhood has been temporarily abandoned.

Here, as in all malarious countries, cases of relapse after years of immunity are occasionally observed; and the rarer cases, wherein the first attack of fever occurs after return to a non-malarious country, come to our knowledge. It seems at first sight rather difficult to fit a germ theory of causation to these instances. The explanation may perhaps lie in the supposition that the heat regulating nervous centre once disordered readily loses its controlling influence when the system is strained by undue exposure to heat or cold; or that the micro-organism possesses to a remarkable extent the property of lying dormant for years.

There are two births to record during the year, and one death. One of the children died when four weeks old.

The mother when confined was suffering from an attack of intermittent fever, and probably from this cause labour came on a week or two before the expected time. During the confinement the temperature fell, but rose again the following morning. On the second day after delivery the child was observed to be feverish, and remained so for two days, the temperature reaching 103.°2. It then became normal, but rose again to 101.°5 on the third day following, and again intermitted for one day. After the first week the temperature remained normal, but the child was weak and assimilated little nourishment, and gradually sank from inanition. During the first week there was no appearance of thrush or any other cause to account for the rise of temperature.

Indian authorities state that the children of parents who have suffered much from malarial fever are often born with a peculiar tint of skin, and splenic enlargement, characteristic of malaria, *i.e.*, a malarial diathesis, which in after life gives a type of periodicity to any other febrile illness. Such was not the case in this instance. Both parents were healthy, and had suffered very little from malarial fever. The child seemed to have acquired it from the circulation of febrile blood immediately prior to delivery.

The community has, as regards non-climatic diseases, been extremely healthy; there are no cases worthy of record. The number of residents is much the same as last year; possibly during the construction of railways and other improvements there may be a slight temporary increase.

Among the natives the mortality from all causes has been less than during the previous year. Cases of fever were not numerous until after the end of July. During September a few cases of cholera were reported in Bangkah, a large town situated on the river about 12 miles inland. I had not an opportunity of seeing any of these cases, but from the symptoms described, rapid fatality, two or more deaths in one house, there are good grounds for believing that the disease was a form of cholera.

In Kelung the mortality has been excessive. In the spring of this year the construction of a railway from Kelung to Twatutia was commenced. Within 1½ mile of Kelung the line runs through a hill, and it is in the excavations for this tunnel and cuttings on the hill-side that men up to the present have been chiefly engaged. The number of soldiers actually employed has varied; about 2,400 were drafted for this work, but the full number has not been employed at one time. For the three months ended with August, the mortality from all causes was set down as 493; for September, returns are not forthcoming. For the six months ended 30th September a mortality of 800 is certainly not over the mark. Among the dead are one general and several officers.

The actual mortality, however, by no means represents the loss. Many who recovered are so weak as to be useless for further operations. The prevailing disease was malarial fever, and the duration of the attacks varied from 3 to 20 days. A few cases of insolation also occurred. With the more marked variations of temperature that occur in August and September, diarrhœa became prevalent, and cases have increased in frequency and severity up to the present both among the soldiers and the natives of the town. Many cases were due to errors of diet, but doubtless many more were due to exposure. In the warm nights these men drop off to

sleep with no more protection to their abdomen than that afforded by the clothing they have worn during the day. In the low temperature just before dawn that is experienced towards the end of summer, those chills are received which form the starting-point of severe diarrhœa.

When we consider the insanitary condition of the camp and surroundings, the only wonder is that the mortality was not greater. The men were accommodated in tents and huts erected in the vicinity of the cuttings, and had to contend with a blazing sun by day, and a bed on damp ground with exposure to freshly upturned soil by night.

No attention was given to the disposal of sewage or refuse, although this point was strongly urged by the engineer in charge. In the absence of latrines the night-soil was deposited everywhere about the place to pollute the atmosphere in dry weather or to be washed by the rains into the pools and small streams whence cooking and drinking water was obtained. On reference to former *Medical Reports* I find that in 1877 in Kelung soldiers suffered in a similar manner. The mortality, however, was not so great. Of 1,500 men landed in February of that year, about 300 had died before the end of September.

It is striking to note the severity with which soldiers suffer from climatic conditions in this island. They are mostly drawn from the northern provinces of the empire. Although in point of physique they are far superior to the natives of the island, they are by no means so well fitted to withstand the sickness attendant on the work they are engaged in. The worst cases of malarial fever and malarial cachexia I have seen have been in northern men employed in railway work, or from the Kelung coal-mines. It is not the degree of fever that is noteworthy so much as the rapid exhaustion, and, in cases that recover, the marked anæmia and prolonged debility following in its train. It is possible that in the case of the inhabitants of the island a gradual process of acclimatisation is going on whereby the type of the disease is modified in each successive generation, so that although physically inferior they suffer less from the endemic disease. It is merely extending to the race what we observe in the individual. A man who on first arrival has had one or more attacks of intermittent fever may in course of time cease to suffer in this manner, although occasionally afflicted with other ailments of a less marked malarial origin, such as neuralgia, brow-ache, rheumatism, etc. These latter complaints are extremely common among the natives of the island. A sanatarium on Palm Island would be invaluable at the present time, although it should comprise no more than a place of shelter. Lying at the entrance of Kelung harbour, within immediate reach of the mainland, and exposed to the cool Pacific breezes, it would form an invaluable resort for invalids conveyed thither in the hot months of summer.

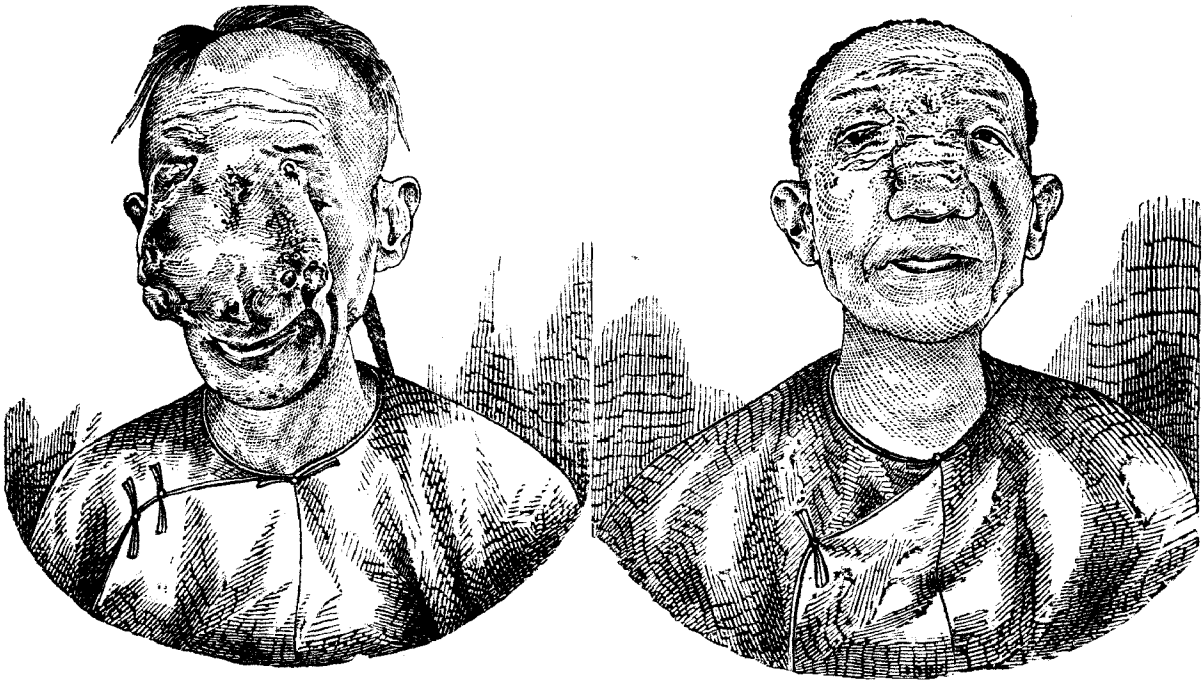
During June and July, when so many men were on the sick list as almost to bring the work to a standstill, it would probably have been a saving of men and money to have suspended operations until able to work under more favourable conditions.

In the Mackay Hospital over 3,400 new cases were treated during last year, comprising the usual diseases met with in Chinese practice. In the after treatment of eye operations, such as iridectomy and cataract, I have observed great benefit from the use of salicylated isinglass plaster as recommended by Dr. CHISHOLM.* In Chinese practice patients cannot always be kept

* *Lancet*, 1886, ii, 296.

in darkened rooms, or so carefully watched as in hospitals at home, and consequently will sometimes satisfy their natural curiosity by removing the bandage. Besides the risk of iritis from such a procedure, there is a chance of septic inoculation from wiping with a dirty napkin. In cases of purulent and gonorrhœal ophthalmia where only one eye is affected, the plaster affords protection to the sound eye. It is light and cool, and at the same time keeps the eyelids firmly closed.

Tumours, chiefly fibrous and fatty, have been numerous. I append illustrations of a case of myeloid sarcoma of the nares:—



The bones and cartilages of the nasal cavity were completely disorganised; fragments of the superior maxillæ and frontal bone were removed in the *débris*. Posteriorly the tumour was more solid; there, owing to the difficulty of breathing, I could not accomplish complete removal. I could with difficulty secure sufficient sound skin to form a covering, but the progress of repair was satisfactory. The patient was a Hakka, 46 years of age. He was rather wasted, and suffered from anasarca, but when he returned home, at the end of three weeks, had improved in these respects.

Of leprosy, 32 cases came under treatment, chiefly of the tubercular form. In early cases I have observed improvement follow the administration of chaulmoogra oil internally, and gurjun oil, emulsified with lime-water, externally. The improvement is so gradual, however, that many lack the requisite patience to continue the treatment for a long period. Still, there are not a few who have followed it out steadily for over a year. In advanced cases no treatment is of any use.

Twenty-six cases of endemic hæmoptysis were treated. Much temporary improvement was observed from the inhalation of turpentine.

Appended is a table of meteorological observations kindly supplied by Mr. Harbour Master McINNES:—

Month.	Thermometer.				Barometer.		Rain.	
	Highest Reading.	Average Highest.	Lowest Reading.	Average Lowest.	Highest.	Lowest.	Number of Days.	Rainfall.
1886.	°	°	°	°	*Inches.*	*Inches.*		*Inches.*
October	90.0	81.0	60.0	68.5	30.34	29.80	8	1.90
November	82.0	72.0	53.5	61.5	30.43	29.84	11	4.76
December	73.0	65.5	44.0	54.0	30.45	30.10	6	5.73
1887.								
January	76.0	66.5	49.0	56.5	30.37	29.96	14	6.66
February	76.0	63.5	46.0	54.0	30.53	29.99	15	5.47
March	72.5	55.5	47.5	55.5	30.36	29.93	16	7.89
April	85.5	74.0	48.0	62.5	30.40	29.85	11	6.03
May	86.0	81.0	59.0	69.0	30.12	29.82	9	4.69
June	95.0	89.0	66.0	75.0	30.05	29.75	2	0.38
July	98.0	90.0	70.0	76.0	30.14	29.55	13	12.83
August	96.0	90.5	73.0	75.5	30.14	29.59	3	1.78
September	95.0	89.0	72.0	76.0	30.14	29.55	10	8.15

DR. B. S. RINGER'S REPORT ON THE HEALTH OF AMOY

For the Year ended 30th September 1887.

DURING the past 12 months 10 births have to be recorded, of which one was still-born, one was premature and died two hours after birth, and in one case animation, which was suspended at birth, was restored by the usual means, but the infant died the next day. The other cases were normal.

In the case of the still-born child a prolapse of the funis occurred during the labour. The prolapsed portion was replaced within the uterus by means of a loop of string threaded through a gum-elastic catheter, but at each severe pain it again protruded, and although repeatedly replaced, it was finally compressed between the fœtal head and the pelvis. The forceps was applied, but the child was dead when extracted.

In the case of suspended animation, the mother (a primipara) was in a state of great exhaustion, consequent on chronic diarrhœa, from which she had suffered for weeks previous to delivery. The child was small and ill-nourished, and only survived one day. The labour was lingering, and afterwards the diarrhœa continued, the patient remaining very weak and taking but little nourishment. The lochial discharge was scanty but not unusually offensive. On the 3rd day feverish symptoms set in, but no abdominal tenderness existed. Quinine was given, which produced deafness but did not reduce the temperature, which reached 107° on the evening of the 4th day after delivery, when the patient became unconscious and died next morning.

Two other fatal cases occurred, one resulting from remittent fever following attacks of diarrhœa and bronchitis, and the other from concussion of the brain, caused by the patient falling down a steep flight of steps on to a tiled floor below. He became insensible some minutes after the injury, and died in a few hours. The base of the skull was probably fractured, as there was considerable bleeding from one ear.

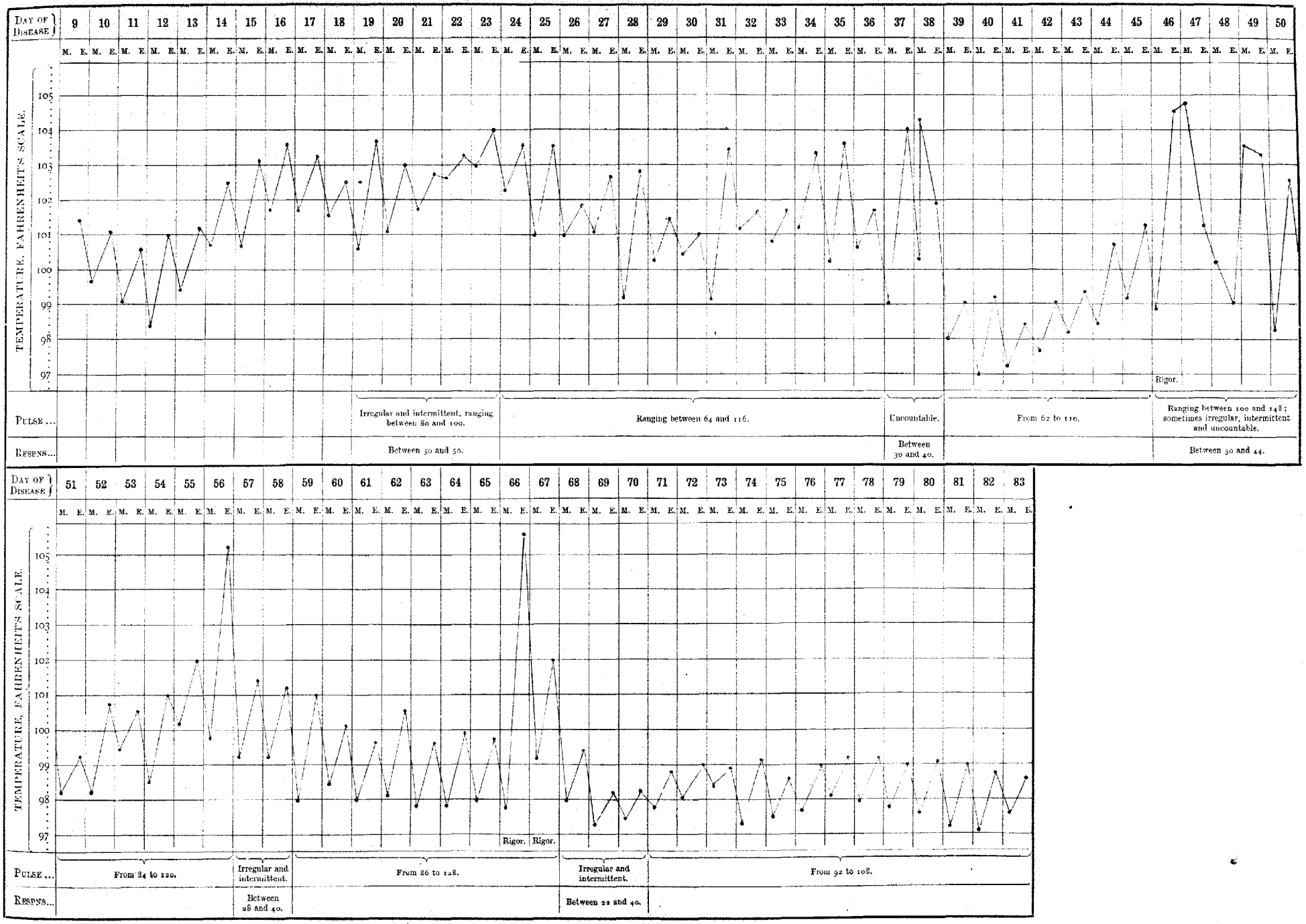
In the summer months, as usual, diarrhœa, hepatic congestion, febrile disorders and boils were the most frequently attended complaints.

In the latter part of 1886 and early in 1887 a case of remittent fever occurred of such unusual duration and severity that I report it somewhat fully.

In November Mr. ——, a robust and powerful Englishman, who has spent 15 years in China, left this port for Shanghai, whence he started in a house-boat on a shooting excursion. After 12 days' journey the boat was moored one night up a creek surrounded by swampy, flat country. The next morning Mr. —— felt feverish, but thinking it unimportant he remained in the boat for several days before returning to Shanghai, where, finding his symptoms still continued, he proceeded without delay to Amoy.

On the afternoon of the 13th December, which was calculated to be the 9th day of the fever, the temperature was 101° F.; skin hot and dry, but no headache, and the patient did not seem in much distress.

Clinical Chart of the Case of prolonged Malarial Remittent Fever.



He was, however, confined to the house and treated with quinine; and on the 16th December the temperature became normal, rising again the same night to 101°. As will be seen by the chart annexed, a variable high temperature persisted, with but very few intermissions, for 68 days, during which time it had twice risen above 105°. Slight wandering and incoherence were noted on a few occasions, but as a rule, even with the highest temperatures, the brain was perfectly clear. There was subsequently a daily fall below normal for a fortnight, after which the patient became convalescent, and took a voyage to England, and out again to China *viâ* America, and up to date has had no return whatever of the fever. The case was diagnosed as one of malarial remittent fever, and in this I was supported by two other professional opinions.

There are several points of interest in this case. I would specially call attention to the extraordinary duration of the fever, and, notwithstanding the long sustained high temperature, the subsequent complete recovery. It will be observed that several sudden rises of 5° or 6° took place in a few hours; and though they occurred more or less periodically, the intervals were not sufficiently exact to enable these exacerbations to be anticipated with any degree of certainty, although an effort in this direction was of course made. The treatment chiefly relied on was quinine and arsenic alternately and in combination. Whenever an unusually high temperature was reached, as soon as it was found to be clearly on the decline, a 20-grain dose of quinine was exhibited, and repeated if depression was not too great. Some complications rendered it necessary to be extremely cautious in the administration of drugs. For example, at an early stage of the disease the heart was found to be very weak, though no organic disease could be discovered. A short trial of digitalis was made, but produced no marked benefit. Sometimes a systolic murmur could be heard at the apex, and after the temperature had been very high the pulse would become irregular and intermittent and often so feeble as to be quite uncountable. The patient was nursed and watched constantly night and day by thoroughly reliable and intelligent friends, who carried out all instructions most minutely, and met such conditions as that just mentioned by the judicious administration of stimulant and nourishment in small and repeated quantities. But for this, and had the patient been left to himself at night, I have not the slightest hesitation in stating that recovery would have been impossible.

Again, a considerable amount of œdema of the lungs existed, also an elongated and irritable condition of the uvula, which produced a most distressing and troublesome cough. A portion of the uvula was therefore removed, with some relief to this symptom, though not, of course, complete, as the accumulation of mucus in the bronchial tubes had to be expelled from time to time. The bowels were sometimes constipated, and much flatulent distension occurred both of the stomach and intestines, which produced great discomfort, while rendering the pulse irregular and intermittent. Great relief was obtained by a purge of calomel, rhubarb and ginger. So sudden on some occasions was this change in the action of the heart that a professional friend, while watching the case with me one day, expressed surprise at finding the pulse irregular and intermittent which I had pronounced regular five minutes before. We observed later on that moving the patient on to his right side would often steady the pulse, which was irregular and intermittent while lying on his left side. Towards the end of January some pain on defæcation was complained of, and on examination a fissure of the anus was found to exist. This probably was the cause of a gland in the groin becoming inflamed; the small abscess resulting, however, was opened and soon healed, as did also the fissure, without operation. To add to the patient's sufferings, about this time a bed-sore threatened on the left hip, but was fortunately averted by frequently bathing the part with whisky and removing pressure as much as possible. During the last few weeks of the fever considerable œdema of the left foot and leg took place, the cause of which was not very clear. It gradually passed off, however, as the patient grew stronger. As a rule, during this attack no cold stage was noted, except on two or three occasions just previous to a rapid rise of temperature. The first happened on the 46th day; the patient was in bed in the same room as usual, where a fire was carefully

maintained day and night, and under precisely similar circumstances to those previously existing. He had taken 20 grains of quinine in the morning and two 3-minim doses of FOWLER'S solution during the day. At 7 P.M. he took some boiled fish, toast and whisky and water with some enjoyment, as he had done for several days previously, a little appetite having returned with the few days' low temperature noted on chart. At 8.30 P.M., without warning, he was suddenly seized with a most violent fit of shivering, lasting an hour, and followed by a rise in temperature from 101° before the meal to over 104° at 9.30 P.M. There was also slight bilious vomiting. This was the most marked rigor, the others being much shorter and less violent.

It is very interesting in studying this chart to observe the tendency towards an intermittent type; for instance, on the 12th, 28th, 31st and 37th days, also more frequently later on. This peculiarity in malarial remittent fever of long duration I have not uncommonly noticed in many cases treated in North Formosa and elsewhere, also that the interval of intermission becomes longer as the fever approaches its termination.

The temperature in the case under review was taken every few hours day and night, but for convenience the chart records only the lowest morning and highest evening temperatures, except in one instance (38th day), where it was necessary to make a double record in the morning, as on that day the highest point was reached before noon, after which it began to fall.

In the treatment of these prolonged cases, more especially where the heart's action is feeble and sometimes intermittent, I must here record my strong belief in the profound importance of nursing and constantly watching the patient day and night; and I would lay particular stress on this last point, as the night watch is not always easy to arrange in private houses. At this time, though the patient may not, and usually does not, sleep for long together, still he assumes an apathetic condition, with such absolute indifference to surrounding circumstances that I am satisfied, in some cases, death might take place before he would either take or call for food and stimulant or request the fire to be renewed.

It was a satisfactory feature of this case that, except on a very few occasions when the temperature reached a great height and was accompanied by slight bilious vomiting for a short time afterwards, the stomach retained food. Nourishment consisted chiefly of strong soups, broths and milk; as a stimulant, whisky was employed and proved most valuable. Furthermore, the indomitable pluck with which the patient maintained throughout his long and painful illness a hopeful view of his own condition, the persevering and uncomplaining manner in which for many weeks, hour after hour, he swallowed everything put to his lips, and his cheerfulness, even when it was evident his life was hanging by a thread, his voice having sunk to a whisper, his temperature being over 104° and pulse uncountable, were important factors in the prognosis, and elements of the utmost value in leading to the favourable issue.

DR. J. H. LOWRY'S REPORT ON THE HEALTH OF HOIHOW (KIUNGCHOW)

For the Half-year ended 30th September 1887.

DURING the period under review the general health of foreigners resident at this port has been fairly good. No one has been under treatment suffering from the effects of malaria.

There have been two deaths, one from chronic alcoholism and one from cholera.

The summer has on the whole been a cool one. Last year more rain fell during the first part of the half-year, while this year it will be observed from the meteorological table that more rain fell during the latter part. Two typhoons were experienced during September.

So far as I can learn there has been no serious epidemic among the natives around Hoihow. No doubt there have been deaths from summer diarrhœa, as there are at nearly every port in China during the summer months, but there has been no outbreak of cholera.

Dr. MCCANDLISS has kindly furnished me with some details as to the work done at the Mission Hospital at Kiungchow during the period 1st April to 30th September. 4,668 cases were treated as out-patients, and 145 as in-patients. Of these, 161 cases were treated for intermittent fever, 45 for remittent fever, 72 for enlarged spleen, 41 for dysentery, 11 for chronic diarrhœa and 1 for sporadic cholera. Dr. MCCANDLISS informs me that a large number of natives suffer from asthma; and in children, with few exceptions, he finds that santonine effects a cure.

Cholera.—On 25th September 1887, H., æt. 30, Customs Tidewaiter, came off steamer duty shortly before 6 A.M. The water being low, he had been about two hours in the boat coming ashore. On reaching his house he was immediately seized with violent purging and vomiting. The purging must have been severe, for he fell twice in his attempt to reach the bedroom upstairs. At 7 A.M. the skin was cold and clammy, and cramps in the feet and calves were violent. Chlorodyne (which was vomited), mustard plasters on abdomen, hot-water bottles, friction, and $\frac{1}{6}$ grain morphia hypodermically, constituted the treatment. The stools were passed in bed, and the secretion of urine was suppressed. Thirst was intense. Four hours after seizure the skin was shrunken; pinched expression; eyes sunken. At 10.30 A.M. purging ceased, and from this time there was no further vomiting, but nausea was constant. LIEBIG'S extract of beef with brandy was now given cold at intervals. Pulse at wrist could not be counted. At 11 A.M. cramps more severe, affecting chest muscles; patient becoming very restless; paroxysms of dyspnœa; gasping for breath; characteristic voice. At noon patient passed into stage of apathy, and died at 12.30 P.M.

Rigor mortis set in rapidly, and muscular contractions were visible in the thighs for a short time after death. I had no time to take temperature readings. Ice is not procurable at this port; I mention the fact, as it might seem strange that the patient was not given it to suck.

All the information that I was able to get from H. was that on the steamer the previous evening, after dinner, he had felt very thirsty, and had drunk five tumblers of water, the fifth tumbler containing

some whisky. None of the officers or crew of the steamer suffered, and there was nothing in the dinner to cause any gastric trouble. Only Hongkong water, filtered, was used for cabin purposes. No one on board heard H. complain of sickness, but it was thought strange that he should ask for whisky, as he rarely took any form of spirit. As I have mentioned in another part of this Report, no cholera cases have been reported in this neighbourhood. H. for some time had not been in very robust health.

ABSTRACT of METEOROLOGICAL OBSERVATIONS, taken at the Custom House by Mr. Harbour Master MÜLLER, for the Six Months ended 30th September 1887. Latitude, 20° 3′ 13″ N.; Longitude, 110° 19′ 3″ E.

MONTH.	WIND.							BAROMETER.		THERMOMETER.		No. of Days Fog.	No. of Days Rain.	Rainfall.
	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 Variable.	No. of Days Calm.	Average Hourly Force.	Highest.	Lowest.	Highest.	Lowest.			
							Miles.	*Inches.*	*Inches.*	°	°	*D. h.*	*D. h.*	*Inches.*
April	12	3	...	...	15	...	3	30.28	29.80	90	63	1 0	0 9	1.6
May	10	10	...	...	11	...	3	30.04	29.80	94	75	...	1 8	5.3
June	...	12	...	...	18	...	3	29.98	29.69	96	75	...	0 16	3.3
July	5	8	3	1	14	...	3	30.00	29.40	91	73	...	2 12	10.8
August	2	10	...	...	19	...	3	30.02	29.77	93	75	...	2 12	7.2
September	12	4	4	...	10	...	4	30.06	28.95	86	75	...	4 0	12.9

REMARKS.—On 21st September a typhoon was experienced. At 9 A.M. the barometer stood at 29.68, and continued falling until 7 P.M., when the lowest point was reached, 28.95. At midnight the reading was 29.37. The wind during the day shifted from N.N.W. by N. and E. to S. On 26th September another typhoon was felt, but less severe; the lowest reading of the barometer was 29.20.

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

For the Half-year ended 30th September 1887.

ABSTRACT of METEOROLOGICAL OBSERVATIONS taken at the Observatory of the Jesuit Mission at Zikawei, for the Six Months ended 30th September 1887. Latitude, 31° 12′ 30″ N.; Longitude E. of Greenwich, 8h. 5m. 45s. *

DATE.	Barometer at 32° F.	Thermometer. Diurnal Mean Temperature in Shade.	Thermometer. Extreme Temperature in Shade.	Amount of Vapour in the Air per Cubic Foot.	Humidity, 0–100.	Ozone, 0–21.	Velocity of Wind per Hour.	Mean Direction of Wind.	Total Evaporation during Month.	Total Rainfall during Month.	No. of Days Rain during Month.
1887.	*Inch.*	°F.	°F.	*Grains.*			*Miles.*		*Inch.*	*Inch.*	
April... Max...	30.330 (3)	71.1 (14)	87.6 (17)	4.650 (10)	89.8 (1)	16.7 (1)	42.87 (27)				
Mean	29.978	60.0	...	3.857	67.2	10.3	15.53				
Min....	29.955 (10)	43.0 (2)	35.6 (1)	1.388 (3)	48.7 (25)	6.0 (25)	1.19 (6)	S. 35°.7 E.	5.79	1.46	6
Range	0.375	28.1	...	...	41.1	10.7	...				
May..... Max...	30.116 (11)	75.0 (31)	84.9 (31)	6.141 (9)	98.0 (13)	15.5 (27)	44.25 (5)				
Mean	29.917	65.8	...	4.968	72.5	11.2	13.85				
Min....	29.572 (27)	56.8 (3)	46.4 (3)	2.577 (14)	28.0 (14)	7.5 (23)	0.74	S. 58°.8 E.	4.73	3.57	15
Range	0.544	18.2	...	...	70.0	8.0	...				
June ... Max...	30.021 (2)	80.2 (25)	91.6 (1)	10.245 (24)	91.3 (20)	16.7 (19)	41.56 (3)				
Mean	29.712	72.4	...	7.129	42.8	12.1	10.80				
Min....	29.440 (13)	67.3 (5)	62.6 (1, 10)	3.642 (2)	55.4 (2)	6.5 (2)	0.62 (17)	S. 62°.7 E.	2.29	11.01	18
Range	0.581	12.9	...	...	35.9	10.2	...				
July..... Max...	30.024 (3)	88.1 (17)	97.9 (16)	11.45 (7)	91.7 (1)	15.0 (1)	45.16 (26)				
Mean	29.545	80.2	...	7.87	79.5	6.6	16.65				
Min....	29.411 (26)	69.1 (1)	63.5 (3)	6.09 (3)	73.4 (20)	4.0 (11, 12, 30)	0.621 (3)	S. 74°.7 E.	3.83	6.60	12
Range	0.613	19.0	...	...	18.3	11.0	...				
Aug. ... Max...	29.921 (31)	86.4 (6)	98.6 (11)	10.46 (11)	84.9 (31)	7.8 (10)	31.93 (1)				
Mean	29.650	83.5	...	9.15	76.2	5.9	10.31				
Min....	29.450 (3)	79.0 (2)	73.2 (2)	7.34 (1)	72.4 (27)	4.0 (28)	0.621 (28)	S. 39°.6 E.	3.99	2.40	6
Range	0.471	7.4	...	...	12.5	3.8	...				
Sept. .. Max...	30.135 (30)	81.8 (12)	90.7 (21)	10.214 (12)	92.6 (1)	13.5 (28)	27.32 (22)				
Mean	29.936	74.9	...	7.375	79.0	8.7	12.42				
Min....	29.585 (12)	64.0 (30)	61.0 (30)	0.910 (30)	66.9 (30)	4.0 (8)	2.48 (3)	N. 66°.7 E.	2.99	9.27	13
Range	0.550	17.8	...	...	25.7	9.5	...				

* Position of British Consulate-General, Shanghai:—Latitude, 31° 14′ 41″ N.; longitude, 121° 28′ 55″ E. of Greenwich.

NOTE.—The figures in parentheses indicate the days on which the observations to which they are appended were made. Under the headings "Diurnal Mean Temperature in Shade," "Humidity," and "Ozone" they indicate the days on which the *mean readings* were respectively highest and lowest.

For the above table I am indebted to the kindness of the Rev. Père CHEVALIER, S.J., Director of the Zikawei Observatory.

It will be observed that although rain was distributed over many days in May, June, July and September, the rainfall was not excessive, sudden and heavy but short showers accounting for most of it. At Zikawei the lowest temperature observed at night was 35°.6 F., on the 1st April, and the highest 98°.6 F., on the 11th August. These figures do not correspond precisely with observations in the settlement, where the lowest temperature registered was 32° F., on the 3rd April, and the highest was 98° F., on the 17th July.

The summer may be described as severe, the range of temperature being wide within limited periods of time. Thus, the minimum and maximum respectively for April were 32° on the 3rd, and 87° on the 17th; for May, 44° on the 6th, and 80° on the 23rd; for June, 58° on the 5th, and 83° on the 24th; for July, 60° on the 3rd, and 98° on the 17th; for August, 70° on the 2nd, and 97° on the 15th and 16th; for September, 62° on the 30th, and 92° on the 9th. April was dry, while the other months were mostly dry with infrequent showers and an occasional torrent. The temperature at night was commonly very high, even in September remaining several nights at 80°. Hence much malaise, aggravation of symptoms in fever cases, and serious interference with the progress of convalescents. Obviously, the effect of a given summer on the health and comfort of a community depends, other things being equal, on the height of the night temperature minima much more than on the height of the day maxima.

The diseases prevalent among foreigners were intestinal and other catarrhs, affecting adults and children alike, varying in intensity from mild conjunctivitis to dysentery; enteric fever, mostly of a benign type; hepatic and renal congestions, which, along with dyspepsia, anorexia and sleeplessness, were in part the result of intense heat, and in part due to the means adopted to render the heat more bearable. Here may suitably be mentioned cases of simple ardent fever, vertigo, and ardor urinæ with, rarely, some true cystitis, due directly to the heat; and of menorrhagia as an indirect effect. Four cases of small-pox occurred in my practice, an unusually large number. Many cases of intermittent fever and of acute and muscular rheumatism and neuralgia were observed, and a few of phthisis, bronchitis and pleurisy. It happened, perhaps merely by chance, that I observed an unusually large number of cases of skin disease of the most various kinds, distributed pretty evenly through the months, and boils added greatly to the discomfort of (mostly) new-comers. There was the usual contingent of venereal affections, alcoholism, etc. Among the diseases of children should be specially mentioned whooping-cough and varicella, of both of which many cases were seen. Lumbricoid worms were also of very frequent occurrence.

I had three cases of cholera in private practice, one of which was fatal in 14 hours. All three cases presented themselves in September.

The patient in the fatal case was treated with friction with mustard, hot bottles to the trunk and extremities, blisters over the course of the vagi in the neck, ice to suck, sulphuric acid lemonade as a beverage, and camphor in saturated alcoholic solution every half-hour. Urgent dyspnœa was the prominent symptom in this case. There was no purging after the second hour from the commencement of the attack. The postmortem examination, made 1½ hour after death, was almost entirely negative. Rigor mortis was very strongly developed; the posterior surface and all the dependent parts of the body were covered with livid patches; the ears and hands were purple. There was no starting of muscles. The interior of the thorax was intensely hot, but the degree of heat was not ascertained by the thermometer. All the cavities of the heart were tightly distended with fluid and very loosely coagulated blood. The lungs

were somewhat paler than they normally are, but were not collapsed. Much blood poured from the pulmonary arterial branches on section. There were no pleural adhesions, and no ecchymoses on the pleura or pericardium. The small intestine was distended with "rice water." The liver, kidneys and spleen were all of normal appearance, showing no engorgement. The bladder was empty and strongly contracted.

In July a large number of deaths from sunstroke were reported as happening among the Chinese in the settlement; and in August cholera spread widely among them and proved extremely fatal.

With the exception of a certain amount of drainage extension in Hongkew, no sanitary works of any magnitude have been undertaken by the Municipal Councils during the period under review, but the routine of garbage and night-soil removal, sink-cleansing and drain-flushing has been carried out efficiently in the parts of the settlements frequented by foreigners. The Chinese quarters deserve, however, much more attention than they receive. Sooner or later the Councils will have to deal with the question of overcrowding in common lodging-houses, and other houses nominally private but in reality brothels.

There has been no cattle disease worth mentioning during the summer half-year.

The annexed Table of Burials in the Foreign Cemetery has been compiled from the municipal registers.

BURIAL RETURN of FOREIGNERS for the Half-year ended 30th September 1887.*

CAUSE OF DEATH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	TOTAL.
Small-pox	1‡‖	1‖	1‡	1†	...	...	4
Typhus fever	...	1†	...	...	...	...	1
Enteric fever	1†	*f* 1	...	1†	..	1‖	4
Remittent fever	...	...	...	1	1	*f* 1 *f* 2‡‖	5
Alcoholism	...	...	...	2	1 *f* 1	...	4
Cholera	...	...	...	...	2 *f* 1‡	1 *f* 1 *f* 1‖ 8† / *f* 1‡ *f* 1‡‖	16
Phthisis	1‡	...	1†	1†‡	1	1†	5
Bright's disease	...	...	2‡	...	...	1‡	3
Sunstroke	...	...	...	1 1†	...	...	2
Dysentery	...	...	...	...	1	1 *f* 1 *f* 1‖ / *f* 1† 1‡	6
Apoplexy	...	...	...	1	...	*f* 1	2
Disease of cord	...	...	...	1†	1†	...	2
Spinal meningitis	...	...	...	...	...	1	1
Heart disease	...	...	1	1 *f* 1 1†	...	*f* 1‡	5
Hydropericardium	...	...	...	1	...	...	1
Peritonitis	...	...	...	...	1†	...	1
Hæmatemesis	1‖	...	...	...	...	...	1
Acute and chronic diarrhœa	...	...	*f* 1	...	*f* 1	1†‖	3
Cholera infantum	...	...	...	...	*f* 1‡‖	...	1
Cirrhosis of liver	1†	...	...	...	...	...	1
Hepatic abscess	...	*f* 1	...	...	...	1	2
Cancer of uterus	...	...	...	*f* 1	...	...	1
Fractures and contusions	2†	...	1	1†	...	...	4
Drowned	...	2†	...	1†	...	...	3
Uncertified	...	...	...	1†	...	...	1
TOTAL	7	6	7	18	12	29	79

* Not including deaths (if any) among the Catholic religious bodies and the Japanese; exclusive also of premature and still births.

† Non-resident. ‡ Asiatic or Eurasian. ‖ Infant. *f* Female.

Subtracting from the total of 79 deaths 7 due to accident, of which 3 were by drowning, there remain 72 deaths to be attributed to disease. There were 12 deaths among children, thus distributed:—5 of European birth, children of residents; 2 children of European visitors; and 5 non-Europeans. The age of the oldest child was 9 years; that of the youngest was 30 hours. The foreign adult mortality from disease was therefore 60, or, excluding 10 adults of Asiatic birth, the European adult mortality was 50. Out of this number 21 were non-residents. The mortality among resident European adults was therefore 29.

I.—Causes of Death from Disease among Resident European Adults.

Enteric fever	1 (female).	Sunstroke	1
Remittent fever	3 (1 female).	Apoplexy	2 (1 female).
Cholera	4 (1 „).	Spinal meningitis	1
Phthisis	1	Cardiac diseases	4 (1 female).
Alcoholism	4 (1 female).	Diarrhœa and dysentery	5 (3 females).
Cancer	1 (female).	Hepatic abscess	2 (1 female).

18 males and 11 females, against 14 males and 9 females during the last previous corresponding period.

II.—Causes of Death from Disease among the Children of Resident Europeans.

Small-pox	1	Dysentery	1 (female).
Enteric fever	1	Hæmatemesis	1
Cholera	1 (female).		

3 males and 2 females. There were no deaths among European children during the summer half-year of 1886.

III.—Causes of Death from Disease among Non-Resident European Adults.

Small-pox	1	Disease of spinal cord	2
Typhus fever	1	Cardiac disease	1
Enteric fever	2	Peritonitis	1
Cholera	8	Cirrhosis of liver	1
Phthisis	2	Uncertified	1
Sunstroke	1		

21 males, against 19 males during the corresponding period of 1886.

IV.—Causes of Death from Disease among Children of Non-Resident Europeans.

Diarrhœa	1	Dysentery	1 (female).

V.—Causes of Death from Disease among Non-European Adult Foreigners.

Small-pox	1	Bright's disease	3
Cholera	2 (females).	Cardiac disease	1 (female).
Phthisis	2	Dysentery	1

7 males and 3 females, against 5 males in the corresponding six months of the previous year.

VI.—Causes of Death from Disease among Non-European Foreign Children.

Small-pox	1	Cholera	2 (females).
Remittent fever	2 (females).		

1 male and 4 females, against 1 male and 1 female in the previous summer six months.

We may note as something phenomenal in Shanghai the death of a foreign infant from small-pox in May. The child was three months old and was unvaccinated. The three cases of remittent fever which proved fatal among Europeans were certified as "pernicious."

One of these I saw in consultation. The patient, who had no malarious history, had an abortive sunstroke on the 11th July, which laid him up for two days. On the 14th he played in a cricket match under a blazing sun, and spent the evening at lawn tennis. While thus engaged he suddenly began to shiver, his skin became burning hot, and he presently burst into a profuse perspiration. His friends made him drink half a tumblerful of brandy. When seen at 9.30 P.M. he was semi-delirious, talking incessantly and so restless that no accurate observation of his temperature could be taken. The mercury, however, speedily rose to 104° F. in the axilla. His pulse was slow, full, but extinguished by the slightest pressure. On the 15th his temperature throughout the day was about 102° F.; he remained in a shaded room, and his skin was thickly covered with prickly heat. He felt so well that he was anxious to go to his office. On the 16th he had dressed to go to business when he suddenly became comatose and died before assistance could reach him. One hour after death the temperature in the axilla was 110°.6 F.

I was disposed to class this as a fatal form of the "fièvre de surmenage" which will be found described on page 26, but the patient's medical attendant would not accept this diagnosis.

Death from pernicious fever among the children of Malays should be of frequent occurrence, judging from the conditions under which these unfortunates live in the marshy back slums of Hongkew. Two fatal cases are reported, but it is probable that this number by no means adequately represents the mortality.

To deny absolutely the existence of a dangerous and even fatal form of remittent fever in Shanghai would no doubt be rash and unjustifiable in face of the number of deaths, diminishing, however, year by year, certified as attributable to it. But this I can positively say from my own experience, that whenever a fever lasting more than a week; presenting exacerbations and remissions which may or may not correspond respectively to evening and morning hours; with slight and irregularly recurring rigors and sweats, languor, anorexia, nausea, sleeplessness, headache or lumbar pain, restlessness; wherein the temperature varies in an irregular manner through the 24 hours between 101° F. or a little lower, and 103°.5 F. or a little higher; where the cardiac action, at first unchanged, loses in force and increases in frequency as days pass by; where there is furred tongue, thirst, yellow diarrhœa or obstinate constipation; where quinine has little effect or none—whenever such a fever has under my hands proceeded through stages of increasing gravity to a fatal termination, and that I have been able to secure an autopsy, I have invariably found, in greater or less development, the intestinal lesions of enteric fever.

Yet, up to 20 years ago it was held as a pious opinion by the earlier practitioners that enteric fever was unknown in Shanghai. I have still a keen recollection of the scornful pity bestowed on my inexperience when, coming in 1868 straight from a large fever hospital in Ireland, I insisted that a case which I had been invited to see in consultation as a very menacing form of remittent was really one of enteric fever. It was my first case in Shanghai. The patient, who had already been ill for more than a fortnight, died 48 hours later, exhausted by perfectly characteristic diarrhœa, which had been sedulously kept up by the administration of from 45 to 60 grains of quinine daily, and by reckless abuse of exclusively milk diet. A large and sudden hæmorrhage was the immediate cause of death. This bad beginning naturally impressed me deeply, and very careful registration and comparison of the multitude of cases of fever which have come under my observation in the 19 years which have since elapsed lead me to confirm the assertion which I have already often made in these Reports, that the great majority of fevers which are classed as obstinate remittents are really enteric.

No less than 5 females fell victims to cholera out of a total mortality of 16, a circumstance, I think, unprecedented here, where the exciting causes of this disease usually

seem to be exerted almost exclusively on men. Two were infants, a fact in itself sufficiently uncommon; two were Asiatic adults; and one was a European living under apparently excellent hygienic conditions. One-half of the total number of fatal cases came from the shipping.

It is significant that 13.8 per cent. (4 deaths out of 29) of the adult European mortality was due to alcoholism.

In the absence of any local registration of disease it is impossible to give the average per-centage mortality of the forms of enteric fever encountered in Shanghai. But considering the frequency with which cases of the disease present themselves, four deaths in six months does certainly not represent a high fatality. Two of these deaths occurred in non-residents, in at least one of whom the disease was already far advanced when the patient arrived in Shanghai. One occurred in the case of a male child aged 3½ years, regarding whom I have no particulars. The fourth case, in a woman aged 40, was under my care.

She was an overworked and underfed woman who had passed though many attacks of remittent and intermittent fever. On the 23rd May, after five days of paroxysmal shivering, for which she had treated herself with quinine, she was found in the evening with a temperature of 104°.5 F., severe interscapular pain, and frequent stools of typhoid character. Next day she was sleepless, delirious and so restless that no satisfactory temperature observation could be taken. Her tongue was brown and baked, with red, fissured tip and edges. She was ordered into hospital. For the next two days her condition remained unaltered, except for the supervention of intense pain in the muscles of the back on any attempt at movement. There was unceasing fly-catching, searching for objects under the bedclothes and starting of the tendons in the forearm. Evening temperature, 105° F.; respiration, 60; extremely deaf. Profuse sweating, tearing up of night-dress and bedclothes during the night of 26th–27th, followed by coma vigil. On the 27th she was insensible; finger and toe nails blue. Temperature in evening, 105°.2 F. On the 28th she died in the early morning, not having regained consciousness.

The only fatal cases of Bright's disease occurred in Malays.

Dysentery and diarrhœa were not prevalent. The total mortality from all forms was nine; of these, three were in European children, two were in male European residents, three were in European resident females, and one in a male Asiatic. It happened that out of the nine fatal cases five occurred in females.

Two of the male cases were men broken down by excesses of all kinds, one of the females had been exhausted by a severe attack of small-pox immediately before her fatal illness, while another was in the same condition as the men just referred to.

In the case of hæmatemesis in an infant, fatal in April, though hæmorrhage from the stomach appeared to be the immediate cause of death, the pathological condition lay much deeper.

The child was born on the 19th April 1887. The mother had borne three children previously. The first labour had been tedious, but terminated naturally; the second had been terminated with forceps, the medical attendant explaining that future labours would probably be at least equally difficult. This was before the mother left England. In November 1885 I delivered her at term with considerable difficulty, the head being arrested at the brim by a smooth bony outgrowth from the anterior surface of the body of the first piece of the sacrum. It was a true exostosis, the condition known as spondylolisthesis being completely absent. The child was apparently dead, but recovered eventually and lived. In June 1886 the mother again became pregnant, and I was anxious to induce premature labour at the seventh month, but

was not permitted to do so. When labour set in I found that the growth had enlarged considerably, but was still smooth, presenting an ellipsoidal surface, and encroaching on the inlet to such an extent as to reduce its antero-posterior diameter to a little over 3 inches. The pains were slight and infrequent, and with the aid of an occasional dose of chloral were rendered bearable during 24 hours, a fair amount of sleep being obtained and sufficient nourishment taken. Twenty-six hours from the commencement the os was well dilated, the contractions regular and powerful, but the head remained perfectly movable above the brim. An attempt to extract with BARNES's forceps failing through repeated slipping, I applied TARNIER'S instrument, and after 20 minutes of moderate traction the child was delivered. For a couple of minutes it did not breathe, but soon appeared to recover completely. The position of the blades of the forceps was marked by superficial bruises, but the skin was not broken. There was a deep depression of the skull above and in front of the left ear, corresponding to the sacral exostosis. The child took food and slept naturally for 24 hours. It then had a slight convulsion of the right arm, began to breathe with great rapidity and shallowness, and could no longer swallow. Its skin meanwhile became pungently hot. Four hours after the onset of the symptoms it vomited about 4 ounces of blood and died in a general convulsion. No postmortem was permitted. No doubt the left motor region of the cerebral cortex had sustained injury by the bulging inward of the parietal and frontal bones, and mechanical injury may also have been inflicted on the medulla oblongata by the forceps traction. The cause of the hæmatemesis is not, however, clear. Turning might perhaps have succeeded better, but the case lay within, though barely within, the limits of forceps application.*

* Pregnancy occurred again in December 1887. Early in July 1888 I induced premature labour, delivering without any difficulty a strong female child weighing 5 lb.

CLINICAL STUDIES
OF DISEASE AS OBSERVED IN CHINA.

INTRODUCTION.

THE following studies are neither more nor less than abstracts from a vast collection of careful records which have accumulated in my case-books during the last nineteen years, together with obvious inferences from them. They deal primarily with forms of disease observed in Shanghai, but wherever necessity and authority exist for modifying any description so as to make it applicable to China in general, the fact will be indicated and the modification made either in the text or notes. They are essentially clinical, but it would have been impossible, even if it had been altogether desirable, rigorously to exclude some few paragraphs devoted to pathology and others detailing anatomical appearances. Senior practitioners will find in them only reminiscences of their own observations, but junior men may derive some advantage from the gift of ready-made experience. Every statement of fact has been repeatedly verified, and every deduction has been conscientiously weighed. The faults that cannot fail to be found will therefore be errors of omission; the nature and form of these studies are too modest to admit of many errors of commission.

CHAPTER I.

SIMPLE CONTINUED FEVER.

BY this term I mean to indicate an affection characterised by high bodily temperature and other manifestations of the febrile state, not contagious, having no specific eruption, unaccompanied by structural complications, and usually of brief duration.

Under it cases of abortive enteric fever are doubtless often classed. To it also is occasionally attributed the malaise accompanied by slightly increased temperature, without any noticeable periodicity, from which at any season of the year old malarious patients are liable to suffer. Worms or other mechanically irritating matters in the intestines of young adolescents,

in whom the spinal cord has lost the excessive excitability of the infantile period of life, not infrequently cause sharp febrile symptoms instead of the muscular twitchings or general convulsions which would betray their presence in earlier years. In these cases of febrile reaction against gastric or intestinal irritation, there is, however, often a tendency to assume the remittent type which is sufficient to suggest a correct diagnosis. On the other hand, it has happened that the initial symptoms of enteric fever in children have been treated with anthelmintics, with results the reverse of salutary. It is often impossible to establish the diagnosis between abortive typhoid and a non-specific fever; but in cases with a history of previous malarial attacks, and where the fever, though continued, is really of malarial origin, the rapidity with which quinine acts beneficially suffices to indicate the true nature of the affection.

Setting aside these sources of fallacy, this form of fever declares itself, in the vast majority of instances, in hot weather, and assails, by preference, new arrivals. Its commonest antecedents are imprudent exposure to the sun, exercise in superheated air, sudden chill with arrest of perspiration, or over-indulgence in stimulating food and alcoholic liquids. Mental fatigue and emotional shock should also be cited as causes; at all events, they certainly exasperate the action of the other causes enumerated. In one case related farther on the only assignable cause was exposure to the gases arising from the decomposing contents of a cesspool.

The attack is generally of short duration when simply and judiciously treated, although the initial symptoms are often alarming enough. It may, however, last for several days and entail a lengthy convalescence. Every degree of severity is encountered, from mere malaise to a condition of great gravity. In a case of average violence the face is flushed or very pale, the conjunctivæ injected; there is intolerance of light, intense throbbing headache, often accompanied by severe lumbar pain and cramping pains in the extremities, sleeplessness; dry pungent skin, with an axillary temperature of from 103° to 105° F.; rapid bounding pulse, palpitation on exertion; white or brown loaded tongue, usually with red edges, complete loss of appetite, urgent thirst, nausea; diminished urinary secretion. The bowels may be either costive or relaxed. Dyspnœa may or may not be present. Vomiting is not constant, but when it occurs the vomited matters consist at first of undigested food, then of tenacious mucus, and finally contain much bile as the attack is beginning to pass off.

This array of symptoms declares itself without warning in the course of a few hours. As a general rule, confinement to a dark room, complete mental and physical rest, ice to the head, saline laxatives and diaphoretics, with iced lemonade in small quantities at a time, suffice to bring the attack to an end within 48 hours; sweating, diuresis and fetid stools marking its termination. When it proves more obstinate, general treatment with the cautious exhibition of quinine, salicylate of sodium or antipyrine may be required for a longer or shorter period. In the early stage quinine only adds to the distress. Occasionally, nervous exhaustion from persistent sleeplessness appears to maintain the fever, which vanishes immediately after sound sleep has been procured by a dose or two of chloral with digitalis. Recurrence after complete defervescence, which frequently characterises this fever elsewhere,* is seldom observed here.

* For instance, Guadaloupe: GUEGNAN, in *Archives de médecine navale*, 1878, i, 81.

I have seen but one fatal case, and I must admit that my diagnosis in that instance was not accepted by the patient's ordinary medical attendant:—

The patient, who had spent several years in Shanghai and had never suffered from any malarial affection, had an abortive sunstroke on the 11th July, which laid him up for two days. On the 14th he played in a cricket match under a blazing sun, and spent the evening at lawn tennis. While thus engaged he suddenly began to shiver, his skin became burning hot, and he presently burst into a profuse perspiration. His friends made him drink half a tumblerful of brandy. When seen at 9.30 P.M. he was semi-delirious, talking incessantly, and so restless that no accurate observation of his temperature could be taken. The mercury, however, speedily rose to 104° F. in the axilla. His pulse was slow, full, but extinguished by the slightest pressure. On the 15th his temperature throughout the day was about 102° F.; he remained in a shaded room, and his skin was thickly covered with prickly heat. He felt so well that he was anxious to go to his office. On the 16th he had dressed to go to business when he suddenly became comatose and died before assistance could reach him. One hour after death the temperature in the axilla was 110°.6 F.

It is evident that this form of fever closely touches the effects of sunstroke and has marked affinities with the "fièvre de surmenage" of French authors.* As it may arise from causes so various as sudden suppression of perspiration, exposure to the sun, excessive fatigue, mental exhaustion or shock, the introduction of noxious matters or of matters whose products of disintegration are noxious into the alimentary canal, or the inhalation of foul gases, the question naturally arises whether there is any condition common to all these diverse accidents. That condition is found in the contamination of the blood by poisonous substances absorbed from the pulmonary or intestinal surface. In the latter and far more common case these substances are leucomaines and extractives of autogenetic (esogenetic) origin, or heterogenetic (exogenetic) ptomaines. Whether the vital reaction against these alkaloidal poisons shall take the form of simple fever or of fever with intense visceral congestion and profound typhoid state, or of choleraic symptoms with tendency to collapse, obviously depends on the nature of the poison in each individual instance. Nor is this surprising when we consider the variety of organic poisons which are constantly being fabricated in the healthy body, while their number and character are susceptible of limitless change. It is matter of daily observation that in cases of malaise from constipation the first effect of a purgative, before the bowels are relieved, is to aggravate the feeling of illness, doubtless by stirring up, rendering soluble, and temporarily promoting the absorption of the toxic products contained in the accumulated fæces.

I deal at present only with the lighter form, where either a minimal quantity of the poisonous substances produced is absorbed or the substances themselves are the least toxic or by their nature are subject to rapid disintegration in the economy and speedy disappearance. We are familiar with the disastrous effects of over-driving cattle, whereby their flesh is rendered poisonous to the consumer, immediate postmortem rigidity and rapid putrefaction moreover attesting the profound alteration which has taken place in their tissues.

There is a remarkable case related by BERTHERAND, in which putrefaction began immediately after death in the body of the victim of an assassination. It was ascertained that the murderer had pursued his prey during several hours before he inflicted the fatal blow.

* An admirable collection of instances of this fever is published by Dr. RENDON: Thèse de Paris, 1888.

Writers on the hygiene of armies in the field have at all times noted the grave fevers which, especially among young soldiers, follow forced marches. In the severer cases albumen appears in the urine, while the ratio of urea is largely diminished. These however are extreme instances, and such forms are only very rarely encountered in civil practice here or elsewhere. Out of the many cases of which I have preserved notes, albuminuria is recorded only once. But the symptoms are of the same kind, though less in degree, and there is abundant evidence (LIEBIG, CHALVET, BOUCHARD) that in the graver cases the amount of extractives in the blood is largely increased.

To the same class of fever should be referred the "fever of growth" of young children, first studied by BOUILLY in 1879, where the emunctories are incapable of overtaking the accumulation of the products of rapid tissue oxidation. The beneficial effect of moderate doses of the salicylates, and especially of complete rest in bed, whereby the rapidity of tissue change is moderated, is readily explained on this supposition.

In making the following brief abstracts of cases I have selected those in which, besides the ordinary train of symptoms, there were some peculiarities special to each case:—

CASES OF SIMPLE CONTINUED FEVER.

1. *Lividity of Surface.*—S., male, aged 42; merchant. On the 7th June had been up country, and bathed three times in a creek the water of which he noticed smelt a little fishy. The sun was very powerful, but ordinary precautions against exposure to it were taken. Headache and sleeplessness through night of 7th to 8th. Previously described symptoms, with marked lividity of surface in addition. Vomiting of mucus. Temperature at 3 P.M. on the 8th June, 105°; pulse 132, small and incompressible. Much dyspnœa. 15 grains each of calomel and ipecacuanha induced abundant bilious purging and vomiting. The temperature at night was 104°.5. Next morning the temperature was 97°.2, and did not subsequently rise above normal.

2. *Exposure to Gases of Putrefaction; Abdominal Pain.*—J., male, aged 40; storekeeper's clerk, from Ningpo. Vague malaise all night of 31st May to 1st June 1874 after superintending the emptying of a deep cesspool in which the putrid bodies of several dogs and cats were found. Next day (1st June) severe pain across abdomen at level of transverse colon. Urine red, scanty, scalding. Constipated. Sent to Shanghai. On the 3rd day anorexia, intense headache, etc., dyspnœa. Temperature in mouth at noon, 105°.2. So much superficial tenderness of front and sides of abdomen that percussion was impossible. 15 grains of ipecacuanha, followed in four hours by a glass of seidlitz water, produced bilious evacuations. On the 4th June all acute symptoms had disappeared, but patient remained ailing, though fever-free, for more than a week.

3. *Rigors.*—R., male, aged 42; lightkeeper. Had never suffered from any malarial affection. Had to superintend repairs of lantern of lighthouse on the 15th August under a blazing sun during two hours, being then in perfect health. Sleepless night, burning skin, series of rigors. Rigors repeated on the afternoon of the 20th; on neither occasion followed by sweating. Not seen until the 25th August as he had to wait the chance of a passing steamer to take him off his rock. Usual symptoms, with intense muscular pain located in buttocks. Temperature at 4 P.M. on the 11th day, 104°. He stated that he was then no hotter than he had constantly been since the 15th inst. No action of bowels for three days. Castor oil enema followed by seidlitz water. Copious evacuations, at first nearly colourless, later containing much bile. Temperature next morning, 101°.5. It varied between 100° and 102° for three days during which

the medicinal treatment consisted in small doses of salicylate of soda and saline laxatives. On the 28th August the temperature fell to normal, and did not again rise.

4. *Intermittent Action of Heart.*—C., male, aged 22; clerk. Much physical fatigue supplementing anxieties of a particularly urgent kind. Has had a varnish eruption for two or three days. 20th July.—Series of chills followed by sweating. The varnish eruption disappeared subsequent to onset of rigors. Temperature at 7 P.M., 103°.8. Heart intermitting, losing every fourth or fifth beat. (Patient has never smoked tobacco.) Pulse 120, incompressible. Four drachms of sulphate of magnesia induced several large passages. Next morning (21st July) the temperature was 101° and there was marked tenderness of the chest walls. The purgative was repeated, and small doses of salicylate of soda with digitalis ordered. In the evening the temperature had fallen to 99°.3; pulse 72, soft and full. Heart's action regular. There was no subsequent recurrence of any of the symptoms.

This patient had been under observation for a year before the attack described and remained here for three years after it. Neither before nor after did he exhibit any symptoms of malarial intoxication.

5. *Suppression of Urine.*—Y., female, aged 9. Taken for a walk in afternoon of 20th September, and subsequently romped with other children in the Public Garden. Restless night, burning skin, suppression of urine. Next day dyspnœa, severe dry cough, twitching of muscles. Temperature at noon, 103°.8. Treated with calomel and rhubarb. Four hours later had four extremely fetid passages, vomited a quantity of mucus, diuresis setting in almost simultaneously, after suppression for 23 hours. Next morning the temperature was 98°.6; pulse 84, normal in character. No recurrence.

6. *Palpitation; Subsultus Tendinum; Recurrence (?).*—H., male, aged 24; clerk. February 1885.—Had passed two sleepless nights over some urgent work; then rode in a paper hunt and was seized with vertigo when approaching a wide water-jump. Was half drowned and helped home. Semi-unconscious at night; slight delirium, twitching of muscles of forearms. Temperature 104°.8; pulse bounding. 15 grains of calomel placed on tongue. Several fetid stools next morning. Temperature then 102°.2, falling towards evening to 99°. Late at night it had risen to 99°.5. On the morning of the 3rd day it was normal, and so continued for 72 hours, vague malaise with palpitation on exertion persisting. There was then a doubtful recurrence with a rise of temperature to 100°, but there was no nervous disturbance. Patient took a dose of castor oil on his own account, and from this out convalescence proceeded satisfactorily but slowly with the aid of an occasional sleeping draught at night.

7. *Albuminuria; Dyspnœa.*—G., male, aged 37; Consular assistant. Prolonged exposure to sun on 1st August. Restless night, with burning skin and frightful nightmare. On the 2nd, temperature 100° in the morning, 100°.5 at night. Pulse bounding; array of symptoms as described. Urine, 5 fluid ounces in 24 hours. Seidlitz, and confinement to dark room. 3rd August.—Morning temperature 99°.9, extreme prostration; dyspnœa, dry cough. Bowels had not moved. Urine scanty, faintly albuminous. Calomel 15 grains. Smart purgation in afternoon; profuse sweating and diuresis. Evening temperature 100°.5. 4th August.—Slept fairly, appetite returning, temperature at 7 A.M., 99°; at noon, 99°.5; at night, 99°.3. The temperature fell to normal on the 5th day, but convalescence was unsatisfactory, and the urine continued clouded with albumen. After a fortnight at Chefoo, patient returned to Shanghai perfectly well. Repeated subsequent examinations of his urine at intervals of a month or so proved it to be free from albumen.

8. *Uselessness of Quinine in early Stage.*—H., male, aged 20; store clerk. Ill for five days after a game of tennis in the sun. Habits irregular. Has taken quinine daily in doses of about 15 grains. Temperature at 2 P.M. on 6th day (30th August), 103°.2. Deaf. Constipated. Conjunctivæ injected; intense headache; dry skin. Calomel 15 grains ordered. At night no action of bowels; temperature 104°.8. Restless night; horrible dreams. 31st August.—Temperature at 7 A.M., 103°. There had been one very small, hard and extremely offensive stool. Seidlitz. Several copious fetid stools in afternoon. Temperature at night, 99°.5. 1st September (8th day), at 7 A.M., temperature 100°.7, all symptoms abated. Temperature normal at night.

9. *Fever of Growth.*—K., female, aged 8. Growing very rapidly. Sleepless for three nights, complaining of intense pain in shoulder-joints and knees. Pain diminishes during day. Appetite lost; urine scanty; offensive diarrhœa; nausea; skin described as constantly hot. Temperature at 4 P.M. on 2nd September, 104°.2; pulse 156; respiration 35; lips livid. No discoverable cardiac lesion. One-third of a bottle of limonade Rogé induced smart purgation, with fall of temperature to normal next morning, and complete relief of pain. Citrate of potash was given for a few days, and for at least two months there was no recurrence of the symptoms.

10. *Persistent Sleeplessness.*—D., female, aged 27. Suffering more or less from sleeplessness for several weeks, but refused sedatives. Chronic dyspeptic. After a garden party on a hot October afternoon was found next morning with a temperature of 103°.2, dry pungent skin, scanty urine, constipation and headache. The temperature diminished gradually under saline treatment through three days; then remained for two days between 100° and 101°. Meanwhile the patient hardly slept at all, cardiac action was flagging, and marked restlessness was developed, with slight and fugitive delirium. After a dose of chloral and digitalis which induced eight hours of tranquil sleep she woke free from fever, and convalescence was thereafter uninterrupted.

11. *Delirium.*—M., aged 45; merchant. Severely overworked at close of July 1885, and noticed that his skin was hot, appetite lost, urine scanty and scalding, and that he could not sleep. Seen on the 2nd August. Morning temperature 103°.5. Had passed a sleepless night, walking about his rooms, talking and gesticulating. Of this he had no recollection. His urine was so irritating in character that it had caused a slight purulent urethritis. Treatment with calomel and salines. Fever fell to 101° at night. Delirious but quiet until towards morning he fell asleep for two hours. Had several semi-solid and liquid passages with much bilious vomiting after waking. Morning temperature 99°.8; very prostrate all day. Temperature in the evening normal. Slept all the next night after a chloral draught, and showed no recurrence of fever. Ailed, however, for a week, and was finally obliged to recruit at Chefoo.

12. *Epistaxis; Herpes.*—MAC., aged 27; marine engineer. Fever began with general malaise, headache, lumbar pain, weariness, loss of appetite, slight diarrhœa, scalding and scanty urine. There had been no shivering. Patient referred symptoms to New Year festivities. Seen in forenoon of the 6th January, the fifth day of his illness. Tongue moist, white, red tip and edges. Pink flush on each cheek; manner stupid. No abdominal tenderness. Temperature in mouth, 104°. Seidlitz water and acetate of ammonia. During the following days the morning and evening temperatures respectively were 103°.2 and 102°.2; 102°.3 and 102°.2; 101°.2 and 101°.8; 100°.2 and 100°.6; 99° and 99°; 98°.4 and 98°.6. On the tenth day of his illness he had a smart hæmorrhage from the nose, and in the evening his lips were covered with a herpetic eruption.

It will be observed that although calomel was administered in a large number of the cases recorded, it was used solely as an efficient and painless purgative; it represented no adhesion to the old Indian practice of treating these fevers with mercurials, a practice justly denounced by FAYRER, CHEEVERS, MOORE and other modern authorities on tropical disease.

I have notes of 105 cases of fever belonging to this category occurring among Chinese, and treated, some few in private, but the majority in hospital.

The patients' ages varied from 19 to 50. Sex is of little importance, as far more men than women are received into Chinese hospitals; males, however, formed 91.5 per cent., females 8.5 per cent.

History previous to admission.—Loss of appetite for periods varying between four days and three weeks. *Rigors* once or oftener in 8.5 per cent. *Sweating* in 17 per cent. Burning *heat* of skin in all. *Delirium* had occurred in 34 per cent., including 17 per cent. of mania with extreme violence. When delirium occurred it showed itself between the 5th and 12th days; mania between the 4th and 10th days. *Vomiting* had been present in 10.5 per cent. The *tongue* was noted in all as "dry," or "dry and dirty," or "red and hard." The *skin* was generally dusky, though this was often doubtful. No spots were ever found. *Pain* usually not reported; when present it had been in head or head and chest, or epigastrium, or "severe abdominal" in 8 per cent. *Pulse* either soft and sometimes intermittent, or wiry. The patients were invariably *sleepless.* There was invariably a history of *constipation* for from three to eight days. The highest *temperature* noted on admission was 104°.8, on the 12th day of fever; the lowest was 100°, on the 16th day. *Cough* had occasionally been observed. In almost all it is noted that the abdomen was "swollen," tympanitic in 15 per cent. In no case was there any specially localised tenderness.

The duration of the fever, excluding one case sedulously treated with quinine, varied between 11 and 17 days.

In all, the temperature fell continuously from the beginning of treatment, where this consisted in simple purgation. In some few, quinine was administered concurrently with purgatives, but the temperature did not fall steadily until the administration of quinine was arrested. In one case quinine was persisted in, but in spite of it, or in consequence of it, the temperature remained above 100° until the 32nd day, when this treatment was abandoned, and the temperature immediately fell. The routine treatment came to be simply by castor oil in repeated doses. This always produced copious stools of extreme fœtor, the temperature generally rising from 1° to 2° between the administration of the oil and its operation. In 18 per cent. it is noted that the purgative was followed by profuse sweating.

All the cases terminated in recovery.

A relapsing form was observed once:—

A wood-carver, aged 23, was brought to hospital on the 23rd June 1887. He was reported to have been ill on and off for several weeks. He was sleepless, his skin was burning, his tongue baked, had had no stool for five days, had complete loss of appetite, and was much wasted. His skin was dirty yellow, conjunctivæ pearly, mucous membranes pale, bluish. There was slight enlargement of both liver and spleen. He was purged on admission, with evacuation of large fetid stools. Temperature, which was 102°, fell next day to normal, and so remained for eight days. It then suddenly rose to 104°.8, and it was discovered that he had gone for four days without a stool. Active purgation reduced the temperature again within 24 hours to normal, at which it remained until patient's discharge on the 20th July. Meanwhile he had been treated with aloes, iron, and strychnine with cod-liver oil, the latter apparently regulating the bowels as well as improving his blood condition. When discharged he was in robust health, his mucous membranes well coloured, and his weight increased by 15 lb.

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

For the Half-year ended 30th September 1887.

DURING the past six months the health of this port has been fairly good.

The foreign residents now consist of 22 individuals, amongst whom the following diseases were treated:—

Delirium tremens	1	Anæmia	1
Asthma	1	Otitis	2
Rheumatism	2	Measles	3

Of the above, the advent of delirium tremens was probably hastened by undue exposure to the sun.

The three cases of measles all occurred in the same family. The first was interesting as limiting the incubation stage to 10 days, for the steamer with the patient on board called at Hongkong, where measles was prevalent just that period before the development of symptoms. Cases 2 and 3 exhibited a marked slowness to receive infection, being three and seven weeks respectively after the eruption in the first case had disappeared. All recovered without any complication.

Among the Chinese an epidemic of cholera was said to have broken out at Lienchow early in the summer, and some cases of sudden death occurred in Pakhoi, said to be due to the same disease; but no case came under my observation.

I append a meteorological table for the six months, prepared by Mr. W. BRENNAN, Tidesurveyor.

MONTH.	BAROMETER.		THERMOMETER.		WINDS.						RAIN.
	Highest.	Lowest.	Highest.	Lowest.	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 Variable.	No. of Days Calm.	
	Inches.	*Inches.*	°	°							*Inches.*
April	30.30	29.77	89	55	5	5	2	2	16	...	0.75
May	30.00	29.75	95	68	5	15	4	...	7	...	5.73
June	29.95	29.63	96	72	1	5	18	...	6	...	3.16
July	29.92	29.46	95	74	8	5	3	1	14	...	17.12
August	29.97	29.40	96	74	6	5	6	2	12	...	19.11
September.	30.00	29.49	96	73	4	5	...	5	17	...	12.83

The Church Missionary Society has opened a hospital for Chinese in this district, under the care of Dr. E. G. HORDER.

PSILOSIS OR SPRUE, OR DIARRHŒA.

By C. BEGG, M.B., CH.M.

DURING my nine years' residence in China I have had a good deal of experience in the treatment of disorders of the bowel, from simple diarrhœa to the more serious dysentery, and, no doubt in common with many of my fellow-workers, have frequently come across cases of intractable diarrhœa, now generally known by the name of Sprue.

In a former paper * I have detailed the treatment of dysentery, which I continue to find perfectly satisfactory, never having had occasion to give more than a second dose, the first generally being sufficient. I also called attention to the condition of the tongue, and the value of the clean tongue as a diagnostic between the true and spurious forms of the disease, the latter depending on the presence in the intestine of ascaris lumbricoides, and requiring to be treated with santonin instead of ipecacuanha.

In dealing with cases of simple intractable diarrhœa I at first found that all the drugs I had been in the habit of using failed to cure the condition, and felt bound to confess that the results of treatment were most unsatisfactory. It then struck me that the symptom which I had been in the habit of relying on in the treatment of spurious dysentery was constantly present in these cases, namely, a clean tongue. From that time I was in a position to attack my cases with a definite plan of treatment, expecting to find that I had to deal with but another form of mischief produced and sustained by the presence of the ascaris lumbricoides in the digestive tract, and I therefore directed my attention to attempting, by the exhibition of santonin, its removal. In not a single case have I ever seen an ascaris in the evacuations as a result of the treatment adopted, but all the distressing symptoms of the disease have yielded to its influence, and I feel confident I have been able to cure a disease I had begun to regard formerly as incurable.

Quite recently, through the courtesy of Dr. THIN, of London, I received a copy of his pamphlet on "Sprue." It contains a series of six most carefully recorded histories of the very class of cases I had found it so difficult to deal with until I had been led to suspect the parasitic nature of the disease. Sprue was not unknown to me before that date, but this pamphlet demonstrated to me in a conclusive manner the similarity of the disease to which that name is given with the disease which I have been now successfully treating.

For my own part I am quite content to keep to the old nomenclature, and call these cases Diarrhœa. I have as yet seen no necessity to dignify them by a special name, unless it should be found correct and desirable to call them cases of parasitic or microbic diarrhœa. I have found santonin, given in the way I shall describe, an infallible remedy, and trust that my fellow-practitioners in China will record their experience of its use.

Dr. MANSON'S admirable description of this disease is the to-be-expected history of a patient suffering from an unchecked diarrhœa or other intestinal lesion interfering with the proper assimilation of the nourishment taken. Dr. VAN DER BURG, in speaking of the etiology of sprue, states that although he believes it to be climatic, yet it does not attack new arrivals, and is less frequent in dark races than among Europeans,—facts, to my mind, pointing strongly to a parasitic or microbic origin. Thus interpreted, it would mean that some time was necessary to elapse after arrival in the country to allow of the introduction and multiplication of the microbe, and the fact, if fact it be, that the dark races are freer from it would be accounted for by the microbe or parasite finding a more favourable nidus in the intestinal canal of the European, or, which is more likely, depending on some question of diet. In my own practice I feel certain that it is by no means uncommon among the Chinese.

* Customs *Medical Reports*, xxix, 39.

All observers remark on the clean appearance of the tongue and its participation only in sympathy with the disturbance of the system and after the disease has existed for some time, or in a patient who has yielded very rapidly to the morbid influence.

Dr. THIN remarks that many of his patients appear on superficial examination to be perfectly well, others exhibit the appearance of persons fatally stricken by some wasting disease.

I quote *in extenso* Dr. THIN'S remarks on the symptom diarrhœa. He says: "Although diarrhœa is sometimes a prominent feature, indeed occasionally the chief feature, of the disease, it is not invariable. The condition of the bowels may be more accurately described as irregular. When the disease has got hold of the patient he never passes a healthy motion. There are patients who for many years have never had a natural stool, but yet have seldom suffered from what could be called diarrhœa. When diarrhœa is present it is not often serous, the evacuations consisting of a frothy, pale yellow or clay-coloured or brown, more or less pulpy mass. Sometimes the bowels are actually constipated, small, hard, dark-coloured lumps being passed. Mucus is not a characteristic of the stools, although sometimes a considerable number of white mucous flocculi are present. One characteristic of the disease is, in some cases, the presence of very large motions in excessive proportion to the food taken, indicative of a suspension of the absorbing power on the part of the mucous membrane."

A careful consideration of this exhaustive description is most suggestive, and, to my mind, agrees perfectly with my theory as to the causation of this disease. The fault would seem to be after digestion has taken place, and nature has either failed to absorb the food so prepared or, and this is the most likely solution of the difficulty, and the only intelligible one, that some change has taken place in the products of digestion, rendering them unfit for absorption, and they are therefore passed out of the system; and all the symptoms that we notice in our patients are the result of the malnutrition.

Dr. THIN continues: "It is true that on microscopic examination of the stools, if the patient has been on a mixed diet, muscular fibres and vegetable structures may be seen to pass through the intestine unacted on." But such structures require a powerful digestion to dispose of, and may well appear in the evacuations of such patients. Dr. THIN states also that "Although in severe cases the microscope detects epithelial cells amongst the flocculi, still a characteristic feature of the disease is the absence in the motions of any signs of inflammation of the mucous membrane."

In short, it seems to me that there is no evidence to support the statement that in cases of sprue we have to deal with "a serious disease of the mucous membrane of the intestine, which is quite distinct from the chronic diarrhœa of tropical countries." Nor can I agree that "the symptoms indicate an irritable, defenceless condition of the whole mucous membrane from mouth to anus . . . . ending eventually in atrophy." As far as I can see, we must except the œsophagus and stomach, and, at best, we only have evidence that nature refuses to absorb the results of the digestive processes in the way she would do were she in perfect working order; while, on the other hand, we have ocular demonstration that the motions are not of a healthy or normal character, and I believe that it is in the motion we must look to find the cause of the disease. That atrophy takes place as a result of this disease unchecked I can quite understand, but I cannot satisfy myself with the current explanation, because, if we accept the pathology given us by observers, we must also allow that the disease only attacks special parts of the tube and leaves other parts healthy. To allow of the digesting of the food taken, we must suppose that the mucous membrane of the stomach, at least, has escaped the morbid process as seen in the mouth and inferred to exist in the intestines, whereas, on many accounts, we might naturally expect the stomach to be the first point of attack; it is certainly the hardest used of any part of the tube, and ought to be the first point to give out.

The theory of a special organism entering and multiplying in the intestinal canal, and by its action rendering the products of digestion inimical to absorption, will satisfactorily account for all the clinical phenomena; and the fact that santonin has been found to cure such cases ought to be a strong proof in support of such a theory. It is an additional fact in support of my theory that the present method

of treatment is to place the patient, after sending him home, for long periods on a special diet. The diseased membrane is still called on to act, but care is taken that only a special substance, milk, is given it to act upon. It may be argued that under milk's bland influence a healthy tone is recovered, the vis medicatrix naturæ coming to the rescue. But it is difficult to understand why, with a proper, wholesome, mixed diet, things should ever have gone wrong, if they are so easily put right; and why, if it be the fact that the structure is diseased, the function should be generally in excess instead of in abeyance—appetite instead of anorexia. On the other hand, if we argue that a mixed diet may contain substances favourable to the growth and well-being of our unknown parasite or microbe, and that in the prolonged use of such a substance as milk we supply the system with nourishment but do not at the same time supply that which is necessary for the multiplication of the microbe, and that it is therefore starved out of existence, we will, it seems to me, be very near the truth.

Dr. THIN has a most interesting page on the results of cultivation of organisms from the motions in Case I, and those of my readers who may refer to his pamphlet will see at once how favourable to my theory were the results obtained by him. Shortly stated, they are as follows:—Out of a number of organisms contained in a minute drop of fluid motion, 13 distinct organisms were isolated; each was developed on gelatine and was perfectly distinctive. Inoculations on fresh gelatine were made once a week. After a little more than two months none of these could be further cultivated. One bacillus behaved in a distinctive manner, and Dr. THIN's attention was drawn to the fact that on several occasions the worse the stools were from the point of view of symptoms, the greater was the proportion in which the bacillus was present. Such statements from such a careful observer as Dr. THIN shows himself to be have a high value, and, to my mind, point most decidedly to the secret of the disease, especially when read, as it was, after the convictions that had been forced on me by clinical experience.

As a typical example of the class of cases under review, I may relate the following:—

A.B., aged about 25; several years in China. Has suffered for several years past with more or less constant diarrhœa. Has lost a great deal of flesh, and never knows what it is to feel comfortable in the abdominal region. The slightest irregularity of diet, etc., brought on a sharp exacerbation of the diarrhœa and flatulent pain. Evacuations frothy, pale coloured, and bad smelling; never formed; worse in the mornings. Mouth tender. On examination, nothing special to be made out in abdominal region except diminished liver dulness and an irregular percussion note over bowel. Tongue and mucous membrane of mouth generally clean, but raw and irritable looking. Had been under treatment in other ports in China and also at home, where he had gone on account of his health. Has at last come to look on his case as incurable, and to be endured, if possible. Has an anxious, wasted look. He was put on treatment, and after the first series of six powders of santonin felt and considered himself to be perfectly well; was passing natural, healthy, formed motions; had absolute freedom from pain and flatulence, and gaining weight rapidly. Over a year has now passed, and the patient has continued well.

I shall let another patient describe his condition in his own words. He writes me:—

My present trouble began about four years ago, I think, and for the last two years was accompanied by dyspepsia in a most aggravated form; pretty well everything was tried . . . . . but all to no purpose. The last two years I have been gradually losing weight, and got down from a normal weight, six years ago, of about 164 lb. to 130 lb. in thick clothes. My appetite was always good, but I had often faint feelings, headaches, and vomiting, and constant looseness, often absolute diarrhœa; at times, regular constipation for a day, always followed by greater looseness. I was often screwed up with wind collected inside, and digestion so impaired that my stools smelled so badly that I was positively offensive to myself. During all this I was in a continued state of depression and irritability. The rest you know. My weight on 18th June was 161 lb., and still "excelsior," I think.

This patient had had for treatment six powders of santonin, and nothing else. His letter was dated six weeks afterwards. Having given the above as examples of the disease under consideration, I will not multiply such, seeing that one case is, with small differences, exactly like another. I have treated some sent me from other outports, others whose business brought them to Hankow, and have also had cases among my own patients, and in all have had to do with a similar disease of a longer

or shorter duration. In all, the same treatment has had the same result. In one case the patient had been first attacked by the disease in India.

The description of the treatment of one case will do for all. I try, if possible, to place the patient at perfect rest in bed or on couch, and, according to the percussion note over abdomen, commence the treatment with or without a dose of castor oil, guarded with tincture of opium. I also very frequently order large warm water enemata at bedtime. A hot fomentation is often necessary in cases of painful flatulent distension, and generally takes the place of the usual drugs given for the relief of that condition. The diet is principally milk, pure or mixed with lime water; milk, eggs and brandy; beef tea, thickened with corn-flour; weak tea, with lots of milk; dry toast or soda biscuit. It is important to take the nourishment frequently in small quantities. The dose of santonin is the usual one of 5 grains for an adult, and is given in a teaspoonful of olive oil, well mixed, and taken the first thing in the morning, or, in some cases, where it is found that the patient suffers considerably from the effects of the drug, I prefer to give it at bedtime. I only give one dose a day, and continue the treatment for six days. I use the yellow crystals, having seemed to find a marked difference in its strength as compared with the white. In WOOD'S *Therapeutics* it is mentioned that the golden yellow colour is caused by exposure to strong sunlight, and he adds that if the change be a chemical and not a mechanical one, it must be very slight, since chemically the relations are unchanged. However, I can only record my prejudice in favour of the yellow. In the therapeutics of santonin little mention is made of any other property than its parasiticide action on entozoa. It is mentioned that it has been noticed to have a tonic effect in loss of optic nerve power and amaurosis. I have found it to exert a powerful astringent power and prove itself an excellent constipating agent.

I am satisfied that we cannot attribute the good resulting from the above course of treatment to its constipating power alone. Nor can the diet take the credit, for I allow great latitude as soon as the six days' course of treatment is over, bringing my patient rapidly through the stages of digestible food up to the ordinary mixed diet. It is a common thing for a patient suffering from this disease to tell you that he improves just as long as he takes care of his diet, and relapses again at once on any indiscretion; so that the conclusion seems forced on us that santonin alters the pre-existing state of things, and cures the patient by removing the cause. Be that what it may, I do not doubt but that careful examination and cultivation of the evacuations will throw light on the subject. I have found myself unable to undertake this part of the investigation from lack of a properly fitted laboratory, etc. The ground has been well prepared by Dr. THIN and others, but a great deal more requires yet to be done to establish the identity of the microbe. I would add that I have seen a number of cases among the Chinese, but here the difficulties of an out-door hospital practice come in, and we must speak with caution as to results seen under such circumstances. I have not enough room in hospital to take in all the cases for operation that present themselves, still less cases of diarrhœa; and in dealing with the Chinese medicinally, it is essential to have them in hospital, so that you can regulate their diet, medicine, and, to some extent at least, their hygiene generally. So far, the practical result of the treatment in the out-patient department has established a rule with the native dispenser and the Italian sisters in charge that in all long-standing cases of diarrhœa, with its accompaniments, such as feebleness, wasting, œdema of extremities, etc., if the tongue be found to be clean, smooth, extremely red, or, in short, in any condition the reverse of furred and foul, santonin in olive oil is at once ordered, tincture of opium being added if there be any straining or blood in the motions. In a great many cases round worms (ascaris lumbricoides) are brought away, and although, no doubt, in a large proportion of the cases they are the sole cause of the mischief, yet my experience with my European patients makes it clear that we cannot blame that parasite in their cases, and I am perfectly convinced that a certain proportion of my hospital cases would be identified as being similar to theirs.

In conclusion, I would shortly state my position as follows:—I do not believe that the disease sprue exists. It is defined as a disease of and originating in the mucous membrane of the intestinal tract,

and the symptoms seen are charged to its account. I believe we are dealing with an alteration in the products of digestion induced by the agency of an organism; that by its action the contents of the bowel are rendered unfit for absorption, and all clinical phenomena are but the result. The organism, no doubt, produces irritation of the mucous membrane by its presence and by the changed character of the motions. The state of the mouth and general condition of the patient are simply the to-be-expected result of such interference with so important a function, and, in detail, are but what is seen every day in patients suffering from other diseases including or causing similar functional derangements. The drug santonin I believe to be inimical to the life of the organism, and as the result of its destruction nature reasserts her sway.

II.—SPECIAL SERIES.

No. 1.—Native Opium	Published	1864.
„ **2.**—Medical Reports: 34th Issue (First Issue, 1871)	„	1890.
„ **3.**—Silk	„	1881.
„ **4.**—Opium	„	1881.
„ **5.**—Notices to Mariners: Eighth Issue (First Issue, 1883)	„	1890.
„ **6.**—Chinese Music	„	1884.
„ **7.**—Instructions for making Meteorological Observations, and the Law of Storms in the Eastern Seas	„	1887.
„ **8.**—Medicines, etc., exported from Hankow and the other Yangtze Ports, with Tariff of Approximate Values	„	1888.
„ **9.**—Native Opium, 1887	„	1888.
„ **10.**—Opium: Crude and Prepared	„	1888.
„ **11.**—Tea, 1888	„	1889.
„ **12.**—Silk: Statistics, 1879–88	„	1889.
„ **13.**—Opium: Historical Note; or the Poppy in China	„	1889.
„ **14.**—Opium Trade: March Quarter, 1889	„	1889.