

MEDICAL AND TOPOGRAPHICAL NOTES ON CHINA.

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SHANGHAI, the most important English settlement in China, is situated on the banks of the Wangpoo, a branch of the great river Yang-tsze-Kiang, about seventy miles from the island of Gutzlaff, in lat. $31^{\circ} 15' N.$, and in long. $121^{\circ} 29' E.$ From October to June the thermometer seldom rises above 75° . In December and January the weather is generally dry and bracing, with a mean of about 45° . During this period cases of catarrh and rheumatism are common. During spring and summer Europeans are liable to attacks of intermittent fever, which are often obstinate and intractable, and not unfrequently show a tendency to pass into the typhoid remittent. There is a peculiar form of ague occasionally noticed at Shanghai: the patient has every day, or on alternate days, a slight cold stage of ague, followed by the hot stage; then the hands and feet alone begin to perspire most profusely, the water standing in beads on the skin, and even running off the hands when they are held down, the rest of the body being quite dry. This species of ague, with its confined local perspiration, is accompanied by intense headache, and more general discomfort and suffering than usually occur during common ague. Quinine* and arsenic are, however, as efficacious in removing this as they are in other forms of intermittent.

A species of typhus, with petechiæ, has occasionally appeared and carried off many victims. Besides remittent fever, chronic diarrhœa and dysentery are common during the hot weather. A few cases of Asiatic cholera occurred during 1851, but it has seldom or never been seen otherwise than as sporadic, although in 1858 it appeared in an epidemic form in several ships of the squadron. Urinary calculi are frequent, and syphilis exists in a very aggravated form. The Chinese are utterly ignorant of the treatment of the venereal disease, and some deplorable cases come under the notice of the European practitioners. Small-pox is prevalent, and inoculation is practised. A respectable native physician from Soochow was taught the mode of vaccination at the Chinese Hospital at Shanghai, and a supply of lymph was given him, with the pamphlet on Vaccination by Dr. Pearson and Sir George Staunton. He soon afterwards vaccinated 800 children at Soochow.

* Drs. Duggan and Barnett, of Foochow, who have kindly supplied me with several of the facts mentioned in these notes, inform me that they are frequently applied to for quinine by those natives who have discovered the properties of the drug.

Considering the exceedingly filthy state of the streets and canals in the Chinese part of the city of Shanghai, and the very offensive smell proceeding from them in summer, it is remarkable that violent epidemic fevers do not more frequently devastate the place. The canals are the receptacle for all kinds of filth, and in some instances are only washed out during the spring tides twice a month; but every time the tide rises into them the water is carried out for domestic use to all the houses in the city. This water is surcharged with decaying matter, and contains infusorial animalcules; yet, notwithstanding this, and although the elimination of fetid malaria is most abundant, the people do not appear to suffer nearly so much as might be expected. The Chinese, however, are sallow, pale, and wanting in vigour. Nearly one thousand cases of dyspepsia are annually treated in the Chinese Hospital at Shanghai.

At Foochow, on the river Min, in lat. $26^{\circ} 8' N.$, and long. $119^{\circ} 42' E.$, the thermometer ranges from 42° minimum to 100° . The average maximum during the summer is 92° , and the average minimum in winter 45° . The atmosphere is generally dry; and were it not for the intense heats of summer, and the miasmata arising from the paddy fields, Foochow would be one of the healthiest ports in China. It is not subject to the extreme, or at least to the continuous, heat which in the summer months visits Hong Kong and Shanghai; nor is there the trying change to continued frosts in winter which is experienced at the latter city. The sea breeze, which blows in regularly every day, is a source of great relief, and conduces much to health during the warm season of the year. The scenery in the neighbourhood of Foochow is very beautiful, and the noble prospects seen on the surrounding hills, and generally along the banks of the Min, tending by their variety to impart cheerfulness to the mind, must have an important sanitary influence, so that there are few ports in China more suitable for the residence of Europeans.

The principle of revulsion and counter-irritation is carried out by the natives in the treatment of all their internal diseases. This is effected by blistering through means of a preparation made from a fly somewhat similar to our own cantharis, kneading the surface of the body with the knuckles, and pinching the skin with the fingers and copper coins until the parts become livid. Fatty and fibrous tumours are frequent, but are never operated on by the native surgeons.

Small pox and syphilis commit frightful ravages at Foochow as well as in other parts of China. If the sufferers from the former disease do not die of it, they afford in the long and deep scars which disfigure them through life sad evidence of the evil arising from the practice of inoculation; while at every turn of their narrow, crowded, and filthy streets many wretched victims of syphilis obtrude themselves upon us, some of them with their noses eaten away, others with the cavity of the mouth exposed, the bones of the superior maxilla destroyed, displaying a hideous cavern within. Others, again, present every variety of venereal sore. The loss of sight is a frequent result of syphilis; and ophthalmia, in all its varieties, is another great scourge to the Chinese. Were Lock and Small-pox Hospitals established in the chief cities of this country, an incalculable boon would be conferred on the natives. Many of the medical missionaries and European practitioners, from benevolent motives, treat thousands of venereal cases, and practise vaccination whenever they can prevail on the Chinese to allow them. Ophthalmia also arises from exposure of the eye to the pungent fumes of burning charcoal, which is largely used for cooking, and from sudden changes in the weather. The native surgeons can do little to arrest disease, and there is in consequence an accumulation of chronic cases on account of the disease not having been checked or cured at first. The Chinese also suffer much from dysentery, chronic diarrhœa, and intestinal worms, as well as intermittent fever, the cold stage of which is sometimes unusually prolonged. This appears to be a marked feature in the variety met with at Foochow. Scrofula, in its worst and most repulsive form, is very frequent. The mortality amongst children is extremely great, mesenteric disease being very common. Almost every variety of skin disease is to be met with in a day's walk through the streets. Opium-smoking does fearful work amongst all classes. In passing through the crowded thoroughfares the stranger's attention is constantly arrested by walking skeletons covered with a skin resembling dried parchment, tremulous in all their movements, and gazing around with a dreamy and unnaturally brilliant eye. When these poor victims of the drug suffer either from disease or injury, it is almost impossible to restore them, so depraved is their bodily system.

The Chinese use sulphur freely, in the form of baths, for lepra and other skin diseases. There are hot sulphur springs

in the neighbourhood of Foochow, and hundreds of natives may be seen bathing there daily, and, as far as can be learned from several intelligent Chinese, with benefit. Hepatic disease is common amongst the foreign residents, owing not only to unnecessary exposure to the sun, but to high living, in a climate and at a time when much muscular exercise cannot be taken. Abscess is the common result; frequently a broken-up constitution, and the necessity of a voyage home. Brain affections are common; they do not stand general bleeding; the local abstraction of blood, cold applications to the shaved head, the cold douche, purgatives, with the free administration of calomel, being most successful. Typhoid fever is likewise common at Foochow, while catarrhs of a mild nature are occasionally met with in the spring, and are easily treated. The prevailing disease of Hong-Kong is a fever combining the character of the African and West Indian fevers; it is endemic, and may be assumed to be the fixed malady of the island. This part of the subject has recently been most ably treated by Dr. Smart, Deputy Inspector-General R.N., in a valuable paper read before the Epidemiological Society.

The use of river water for drinking is prejudicial to health, and is one cause of the dysentery and intestinal worms which have been so prevalent in our ships and in the mercantile marine. When the writer was stationed at Shanghai, he recommended filtered water (to be purchased on shore), the expense being one dollar per tun, but this suggestion was not complied with on economical grounds. Besides, in steamers, we have the means of condensing good and pure water, and to compel men to drink river water on account of the expense of fuel is, to say the least of it, most unwise and injudicious parsimony.* "When the waters are muddy in rivers," says Dr. Saunders, "and no other water is to be had for drinking, alum should be added to it in the proportion of about one ounce to a tun: it makes it clear and pure, and acts beneficially on the system at the same time by cooling the body and bracing up its relaxed fibres. It is also a point of vast importance to be understood, that organic matters in solution pass through filters except they are removed by chemical action."†

There can be little doubt that the chief offending cause exists "in infusorial animalcules of a poisonous nature, or in the form of minute organic germs of the animal and vegetable world, called into action by the great heat of the rivers (seldom under 88° in the hot season), and perhaps fostered and increased by the rich and putrid manures used by the Chinese, and the disorganized matter produced by the decay of rice crops."‡ Besides, the water at the anchorages of Shanghai and Foochow are rendered still more impure by the sewers from the city, and from the immense fleet of ships and junks. "On the other hand," as Dr. Bryson remarks, "there were vessels in which distilled water had been used exclusively for nearly two years, still the surgeon reports that nearly one-half the patients who had been ill of fever vomited occasionally one, two, or three worms at a time; they were most frequently observed during the months of June and July, when the men were in the habit of eating largely of the fruit called lycheese, in which the germ of the parasite is supposed by the Chinese to exist."§

It may be mentioned as an interesting fact that the Chinese are acquainted with the power of arsenic in checking the return of ague. The following is a translation of a Chinese prescription for ague, for which I am indebted to Wm. Lockhart, Esq., F.R.C.S.: "Take one dried orange; sulphuret of arsenic, three drachms: scoop out the inside of the orange, introduce the arsenic into it, and over a slow fire let them be roasted to ashes, preserving the essence of both; then reduce the whole to powder, and of this let each dose be three drachms, taken with old or mellow wine." According to this mode of preparation the dose of arsenic must be very uncertain, for as the sulphuret is volatile a large portion of it will pass off; but some of the metal, in the form of oxide, will remain among the ashes of the orange, quite sufficient for a powerful dose. I may add that the Chinese use calomel ointment in cases of sloughing ulcer, with the view of cleansing the sore and producing a free purulent discharge.

During the recent operations in China, the casualties in our attacking force and in that of our French allies were occasioned by round and grape shot, gungall balls and slugs of lead and iron, and bows and arrows. Besides, several deaths and severe

burns were occasioned by the explosion of a powder magazine at the forts on the Peiho river. The bullets and slugs were of a very irregular shape, and in many cases sharp and angular, although some were rounded and cast, like our own musket-balls. The soft parts were much lacerated and contused, but in many cases life was saved by the bad construction of the firearms, and the want of propelling power in the powder used by the Chinese.

P.S.—Regarding my remarks on the use of river-water in China, I believe that, chiefly in consequence of the remonstrances of medical officers, an Admiralty order has at length been issued enjoining the use of condensed water in China, and in other cases when good and pure water cannot be obtained. Those only who have served in the rivers of China can fully appreciate the importance of this very obvious and necessary sanitary precaution. This leads me to allude to another point of naval hygiene. The decks of ships, and even the ward-room and gun-room, are almost invariably saturated with water every day in all weathers, with the very laudable view of obtaining spotless whiteness of the decks, and both officers and men have frequently to breathe a humid and debilitating atmosphere far from conducive to health, much less favourable for the treatment of disease. The statistical reports of the navy, and the remarkable cases of the *Vernon* and *Eagle* on the South American station, prove beyond all doubt that the practice alluded to is fraught with mischief, tending, as it does, to reduce physical force, co-operating in the induction of diseases of debility, and rendering the body more susceptible of the attacks of violent disease. If in certain states of the weather dry rubbing were substituted, especially on the lower decks, I believe the present high average health of the naval service would be still further increased.

This being the age of sanitary reform, I may be allowed to make one or two other suggestions. Notwithstanding the reconstruction of the navy, there must still be some vessels composed at least partially of wood. I therefore recommend the bilges to be covered with a thin metallic coating of copper or galvanized zinc (Muntz metal). It would facilitate the cleaning of the bilges, preserve the wood, prevent the absorption of grease, and diminish the evolution of noxious gases. In warm climates the smell of bilge is sometimes intolerable, and if not one of the exciting causes of fever, at all events leads to great annoyance and discomfort. This is no merely theoretical scheme, but it has received the sanction of several practical men whom I have consulted on the subject. In steamers of the navy the number of stokers in tropical climates is too small. In some vessels the temperature of the stoke-hold is as high as 138°, and the average, 115° during summer. Under these circumstances, the men are sometimes unable to work from absolute exhaustion, and should be allowed more rest than the present limited number admits. It would be of advantage to enter some of the natives of India and China for this service when Her Majesty's ships are employed on that station. Exposure to the sun is a fruitful source of disease, and on board ship the awnings are frequently too thin, allowing the rays of the sun to penetrate. A double awning, when the ship remains at anchor during the extreme heat of summer, would undoubtedly be advantageous in a sanitary point of view. I have only to add, that in almost every part of China the hottest months of the year are July and August. In the north, the heat is very oppressive from the middle of June to the middle of September. In the Gulf of Pecheli heavy and continuous rains frequently fall in June, and the air is surcharged with electricity, sheet and forked lightning being very prevalent. About Canton the winters are much warmer than they are at the more northern ports; the thermometer seldom falls to the freezing-point, and ice and snow are of rare occurrence. In the month of December a temperature of 45° feels cold after the excessive heat of the summer and autumn. The island of Chusan would be an excellent situation for the head-quarters of our naval and military forces in China. They are likely to suffer less here from the effects of climate than anywhere else, and an abundant supply of fresh provisions can be procured.

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* In addition to the sanitary suggestions I have already ventured to make, I most strongly recommend preserved potatoes to be issued at least twice a week to ships' companies in all vessels proceeding to China, and on other long voyages. This would be a very desirable addition to the usual diet at sea, and the expense would not be great.

† Medical and Surgical Hints, p. 19.

‡ Statistical Report, East India and China Station (1837-1843), p. 89.

§ Medical Statistical Returns (1853), p. 135.