principal purely medical remedial measures which I have elsewhere more fully described, and the utility of which, in many cases of uterine fibro-myomata, have been proved by clinical experience.

The most prominent symptom of fibromata, especially if sub-mucous, and occurring before the menopause, being uterine hæmorrhage, the arrest of this must be a primary object of treatment. For this purpose, the patient should be kept at perfect rest from the time when the recurrence of the hæmorrhage is expected until the menstrual period has completely passed over. In the way of medicine, sulphuric acid, with liquor ergotæ or Dover's powder and gallic acid, may be given, or hazeline may be tried. In any serious case of hæmorrhage thus caused, however, it will be better at once to resort to the only reliable styptic remedy for such cases, namely the free hypodermic use of either ergotine, or, preferably, of the ordinary liquor ergotæ. During the past eight years I have employed either liquor ergotæ or ergotine in this way in nearly every case of this kind treated in my gynecological wards, and I have no hesitation in saying that we may generally thus control any hæmorrhage caused by uterine fibro-myoma. Moreover, by the continued employment of these hypodermic injections in some instances, such a marked diminution in the size of the tumour may be occasioned as to render further treatment unnecessary.

Amongst the means by which the congestive hypertrophy or general areolar hyperplasia of the uterus, always attending the development of fibro-myomas, may be diminished, and thus the consequent hæmorrhage be lessened, none are so invariably beneficial as the persistent and judicious use of hot water uterine irrigations or injections. For this purpose, the cervical canal must be previously dilated, and the irrigation persistently employed, not only at regular intervals, but also for a lengthened period on each occasion.

Our second therapeutic aim, in such cases, should be to stimulate the activity of the local absorbents, so as, if possible, to induce the diminution of the tumour.

Foremost amongst the remedies available for this are iodide of potassium and small doses of tincture of iodine. Chloride of calcium, or the old solution of the hydrochlorate of lime of the Dublin *Pharmacopœia*, has again come into favour in such cases, and probably acts by inducing a certain amount of calcification, and consequently diminished vitality in neoplasm. By far the most useful, however, of all drugs in such cases, is iodide of potassium, given in as large doses and for as long a period as it can be safely administered. I have had so many proofs of the diminution in size thus caused in large myomata, in patients of otherwise robust constitution, that I can only account for its failure in the hands of other practitioners from its injudicious administration in persons of broken-down constitution, or in cases otherwise unsuitable.

Lastly, I may again here observe that, in cases of uterine myomata in which, for any reason, operative interference is not available, we may possibly succeed in arresting the development of the disease by sending our patient to a suitable isolated or bromated spa, such as Kreuznach, or by the conjoint internal administration and external use of this water.

As this paper has reached a greater length than was intended, any further reference to the manifold correlations of constitutional and topical treatment in other gynecological complaints must be here omitted. I may, however, add that if, in the course of the foregoing observations, I may have seemed to lay undue stress on constitutional measures in the management of various diseases peculiar to women, this is merely because the value of such remedies is too generally ignored, the possible utility of constitutional treatment being now almost crowded out of notice by the attention given to mechanical expedients for the correction of flexions or displacements, or other more recent forms of local uterine therapeutics. Therefore, whilst the importance of each of these, in all appropriate cases, is manifest and unquestionable, I may, in conclusion, again venture to point out that those gynecologists who, in conjunction with whatever local measures may be found necessary in the special cases with which they have to deal, also at the same time most fully avail themselves of the resources of constitutional treatment which I have already indicated, will, generally, best succeed in curing their patients—*cito, tuto, ac iucunde*.

UNIVERSITY COLLEGE.—The annual dinner of the old and present students of the Faculty of Medicine will be held on October 1st, at 6.30 p.m., at the Freemasons' Tavern. Professor John Marshall, F.R.S., will preside, and many distinguished former students (including Sir William Jenner) have expressed their intention of being present. Tickets (12s. each) may be obtained from the honorary secretaries, Dr. Poore and Mr. Stonham.

OUTBREAK OF YELLOW FEVER IN SIERRA LEONE, 1884.

By J. J. LAMPREY, M.K.Q.C.P., L.R.C.S. Ed.,
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THERE are few places in the tropical world which at first sight present to the traveller a picture of greater magnificence, than the lofty range of mountain scenery which gives its name to the peninsula of Sierra Leone. To those who are unfamiliar with the peculiarities of the climate of Western Africa, a scene of such natural beauty becomes at once enchanting. For a moment home is forgotten, or, if remembered, the remembrance is accompanied by a desire that it should be situated in such a paradise. Seen as the traveller draws close to the shore from the north, on the deck of the mail-steamer, on a clear bright morning, when the atmosphere is comparatively devoid of malaria, there is nothing wanting in beauty that nature has not supplied in abundance. Should the arrival, however, happen at another period, when the rains are deluging the face of the country, and swelling the rivers and mountain-streams, then Sierra Leone presents a different picture. There is little or nothing to excite pleasant anticipations, but rather much to depress and awaken melancholy fancies. The realities of the scene are unaltered; for the two periods are the property of the climate, and must be endured by the native and European in due season.

Freetown, which is the capital of this settlement, is situated about five or six miles from Cape Sierra Leone, on the banks of the river Roquette, on the north of the peninsula, and stands in latitude 8° 29' N. and longitude 13° 14' W. The town is admirably laid out in fine wide streets of good dimensions, running from the water's edge inland, and intersected, at right angles, by other streets of similar size. The mountains form the background, and sweep, in horse-shoe shape, round the town, which stands on a gradual acclivity, and occupies a space about two and a half miles in circumference. In the middle ground stand the various government offices, and the residence of the governor. Behind, are the military barracks and hospital. On the water's edge, and in the foreground, are the residences of the various European and native merchants, the colonial hospital, the prison and market, the cathedral and Wilberforce memorial, the custom-house and the battery. Bishop's Court and Fourah Bay College complete the picture.

The native population is composed of many tribes of west African origin, and for the greater part inhabits Freetown; the rest are distributed in many small villages in the hills and along the coast. The Europeans seldom number more than two hundred, and, with few exceptions, are male adults. Women and children seldom resist the influence of the climate for any extended period. The climate of Freetown has decidedly proved unfavourable to the human constitution in general, although there are no marked peculiarities which distinguish it from the climate of the other parts of the western coast of Africa, extending from the river Senegal in the north, to the river Congo. Some modifications will of course be found in particular localities, where the coast is flat, low, and marshy—as at the mouths of rivers; or where the land is high and exposed to the pure sea-breeze, or removed from malaria by elevations, such as are found in the mountains of Sierra Leone or the Cameroons. The seasons have much to do with malaria; they seem earlier in the south than they do in the north, and may be said to commence first on the equator and work gradually along the coast to the Senegal. To describe the climate of any one locality on the coast of Africa is to divide the seasons of the year into two, and call the period of rain the "wet" season, and that of the greatest heat the "dry" season. Putting aside the calendar year, we commence with the natural, when nature puts forth her creative powers, and vegetation assumes its greenest vigour, as at the commencement of the rains. The revolution of the seasons of the year at Sierra Leone may thus be described. The months of September and October may be compared to the spring of the more northern climates. The wind is variable, the weather showery and unsettled. The average maximum temperature is about 82° Fahr. From November to January the wind is light and variable, and the weather settled; the sun is bright, and vegetation reaches maturity. The greatest average temperature is 86° Fahr. This is the summer of the natural year. In February the weather again becomes unsettled, and an average temperature of 85° Fahr., until April, and shifting winds and dull, heavy weather marks this period with tornadoes and terrific storms, and occasional showers. In May the rain sets in, and August marks the end of this season by an abatement of the rains and an average temperature of 80° Fahr. At the commencement, and for some time after the setting in of the rains, fever is most frequent and fatal.

The causes of the fever, which has produced such mortality and

sickness amongst the native and European population of Sierra Leone, and occurs epidemically at certain periods, may be given under the following headings.

Definition.—The character of the fever which occurred in Freetown during the months of May, June, July, and August, 1884, in a limited area extending along the riverside, and confining itself particularly to Westmoreland Street, Rawdon Street, and Howe Street, was pernicious remittent, or yellow fever of a very malignant type. There was yellowness of the skin and conjunctive; pain in the back, loins, and limbs; with pains in the chest, and a burning sensation along the oesophagus; supra-orbital pain, pain in the head; distressing vomiting; great thirst; dark coloured albuminous urine containing blood-casts; a quickened pulse, 110 to 120; and a persistently high temperature, ranging from 102° to 105° Fahr. The tongue was hard and dry, of a dark brown colour; or it might be red at the tip and edges, with a furred centre; in other cases, it was large and flabby, and of a deep blood-red colour. The vomiting was, at first, very distressing; the vomited matter occasionally had a dark coffee-ground appearance, and at length became absolutely black. The duration of the fever was from three to four days; in less severe cases, from five to seven days; and nearly all attacked died.

Cause.—The city of Freetown is situated in an amphitheatre, surrounded on three sides by a range of hills rising from 500 to 3,000 feet above the town. In this circumscribed area, a large and dense population are crowded together; their habitations are, for the greater part, not well constructed, and the houses surrounded by privies and cesspits, and, in many places, wells, from which impure drinking-water is drawn. The natural slope of the ground, and the heavy fall of rain, filled these cesspits to overflowing, so that the sewage overflowed, and gave out noxious exhalations, whilst the water in the wells was poisoned by an admixture with the fecal products. The pollution of the atmosphere by the emanations from these cesspits and closets, situated in the back yard of every block of ground on which a habitation stands, could not fail to be injurious to health.

During the prevalence of the rainy season, the air becomes highly saturated with vapour, and the destructiveness of this was obvious on clothing, leather, and other perishable articles. The putrefaction of animal and vegetable matter, when saturated with moisture, becomes very rapid, more especially when there is persistent heat.

The soil, exhaling telluric poison, the product of the decay and decomposition of putrid matter, exercises a deleterious constitutional effect on the system of those exposed to its influence, which cannot but produce a state most favourable to the development of diseases of the typho-malarial type.

Heat and moisture acting together in a modified form, as at the commencement and ending of the rainy season on the west coast, are factors most favourable to the evolution of that product to which has been given the name malaria. The European, after many years' residence in parts of India, does not present the same appearance as a European after a few months' residence in Freetown, particularly should he suffer now and then from remittent fever. The skin and complexion of the former is tanned and healthy, whilst that of the latter is, in texture, like a boiled orange, and the face pale and sallow-looking. This is not surprising, considering the condition of seldom varying heat and moisture, resembling, for many months in the year, the interior of an orchid-house, heated by a furnace like a vapour-bath, which debilitates and physically and mentally weakens all who reside in such a climate for any length of time. Frequent exposure to this vapoury heat produces frequent attacks of bilious remittent fever, causing anæmic and splenic diseases, dyspepsia, and derangement of the liver and kidneys.

Intemperance has always been brought forward, and described as if it has been the cause which produces the frequent attacks of African fever amongst the Europeans visiting the coast. It is an easy method of disposing of a sore point, more particularly when an epidemic attacks the Europeans with greater force than the natives, and affords a feeling of glorification to all temperate survivors. As a rule, persons of intemperate habits possess good constitutions, and stand the climate quite as well as their more temperate companions. No person of intemperate habits, however, should come to the coast of Africa, any more than a youngster who was not physically and mentally strong, and his character formed, so as to resist the inducements to drink which the climate may produce.

Origin.—On every outbreak of yellow fever in Sierra Leone, it has always proved of sporadic origin, the undoubted product of Freetown itself, as all attempts to trace its origin to a non-sporadic origin have totally failed.

History.—There may be stated to be three forms of fever commonly met with on the coast of Africa, namely, ague, bilious remittent fever,

and pernicious or yellow fever. The first named is not of frequent occurrence; the second is the commonest; and the third the most fatal. Though the characters of these fevers, when developed, show a distinctiveness of type one from the other, yet so alike are they at the commencement of being first attacked, that it requires some experience to define them. It was found expedient to carefully watch the various symptoms of a suspicious case, before absolutely pronouncing the disease to be yellow fever.

Yellow Fever.—The Sierra Leone fever has always had seasons of exacerbation, during some years assuming a mild form, at others a most severe, the mortality at times being appalling. The earlier years of the existence of the colony were marked by seasons of extreme unhealthiness to Europeans and natives, especially in 1807, 1809, 1812, 1815, and 1819. In 1853, yellow fever was epidemic; it commenced at the close of the "dry" season, continued through the "early rains," and ended with the "heavy rains." In 1825, yellow fever became epidemic, and out of 902 persons known to have been attacked with fever, 263 succumbed. In 1829, during April and May, Freetown was again visited, and yellow fever then confined itself principally (as in 1884), in the months of May and June, to the low levels of the town. This epidemic attacked 150 Europeans, and 11 perished.

Yellow fever again appeared in 1837 amongst the Europeans engaged in the shipping. In January of this year, two very suspicious cases died of the so-called African remittent fever. In April, many cases of yellow fever occurred, and two died, having distinct black vomit. In March, yellow fever was reported prevalent. On May 11th, a case occurred amongst the troops. The disease declined with the maturity of the rains, but appeared again in a malignant form in October, and disappeared in December. In 1838, yellow fever appeared in February, and ended in March. In 1839, a severe form of remittent fever caused the death of 6 officers of the garrison at Tower Hill barracks. During the months of July, August, and September, every man of the Royal African Corps in the barracks at "King Toms," Freetown, suffered from the fever, and the mortality amongst that corps is stated to have been appalling. There were 7 officers and 13 men of the Royal Navy attacked with yellow fever, and every one died. In 1845, yellow fever appeared amongst the crew of the squadron at anchor off Sierra Leone. The *Eclair* sailed from the river on July 23rd, 1845, and 60 of her crew perished from yellow fever. One fatal case occurred in September from malignant remittent fever. In 1847, yellow fever was epidemic in Freetown in June, July, and August, and the "rainy season" was marked by great heat and little rain. In 1859, yellow fever again became prevalent during the months of April, May, and June, and 106 Europeans died during the year. The rains are recorded as being very slight. In 1865, yellow fever was epidemic in Freetown. In 1866, yellow fever was again epidemic, and 100 Europeans died between the months of April and October in that year. In 1872, fever appears to have been of a malignant type, and the mortality was particularly high during the months of May, June, and July, and ended in 9 persons being attacked with yellow fever in December, of which number 6 died of that disease. It is recorded that the average death-rate during the year at Freetown was 250 per 1,000. This appalling mortality did not include all the victims, as others died on shipboard, trying to escape from the colony. The years 1863 and 1882 were both noted for seasons of unhealthiness.

The epidemic of yellow fever in 1884 was marked by an increased mortality. The average death-rate amongst the native population was 35 per 1,000, whilst the death-rate amongst the Europeans was at the rate of 6 per cent. per month. The epidemic commenced early in May, was most severe in June and July, and declined with the maturity of the rains in August, and gradually decreased with the saturation of the ground and the atmosphere with moisture, until it finally ceased, merging again into the ordinary endemic remittent. In December, all trace of the epidemic had disappeared.

The following is a description of the symptoms and progress of several cases which proved fatal amongst the Europeans and natives.

The first case was that of M. L., aged 24. He was taken ill on May 6th, and died on the 10th. His illness commenced by a feeling of depression, and a loss of activity and mental energy. He had shivering, frontal headache, pain in the eyeballs and over the orbits, and vomiting. His temperature rose to 103° Fahr., and never went below. His pulse was full and bounding, the eyes suffused and inflamed. There was great restlessness, subsultus tendinum, and black vomit. He died comatose.

The next case was that of Dr. W. H. H., colonial surgeon at Sierra Leone. He was taken ill on Sunday morning, May 11th. His temperature was 104° Fahr.; pulse 120, full and strong. The skin was

dry, the tongue large and flabby, and of a deep blood-red colour; the eyes congested. He had frontal headache, and deep-seated pain in the eyeballs, and above the orbits. There was occasional vomiting, and a gradual increase of the intensity of his fever until the night of the 16th, when he expressed himself as feeling better. On the morning of the 17th, he was carried on board the mail-steamer *Calabar*, as the only prospect of his recovery depended upon immediate change of climate. Unfortunately, the steamer had to call at the Gambia, and after leaving this port his condition appeared to become worse. There were pain in the abdomen, much vomiting, and delirium. He died on the morning of May 29th, and was buried at sea a few hours' sail from Madeira. The purser of the steamer *Calabar* contracted the disease, and died after a few hours' illness, and was also buried on the morning of May 29th, at 3 o'clock.

The fourth case was that of Mr. W. M., an agent for a trading-house in Freetown. He was taken ill on May 10th, and died on the 20th.

The fifth case was that of the Rev. C., of the Roman Catholic Mission. He was taken ill on the 20th, and died on May 25th. He had black vomit.

The sixth case was that of Mr. D., a clerk, living in the house with Mr. W. M. He was taken ill on June 7th, and died on the 11th. His temperature ranged from 102° to 104° Fahr. He had black vomit.

The seventh case was Mr. L., a young clerk to a trading company. He was ill only three days, and died on June 16th. He had black vomit.

The eighth case was Mr. M., a man of intemperate habits, who had resided many years on the West Coast of Africa. He died on June 18th of yellow fever.

The ninth case was a soldier, Lance-Corporal W., 2nd West India Regiment, who died in the military hospital on June 20th, 1884, of enteric fever.

The tenth case was a negro soldier, Private R. C., 2nd West India Regiment. He was admitted into the military hospital on June 23rd with the symptoms of coast-fever. The eyes were much congested, and the temperature 102° Fahr. On the morning of the 24th, he complained of very great weakness; the temperature was 100° Fahr. His conjunctivae were tinged a deep yellow. He had great frontal and supra-orbital pain, and vomited a quantity of dark coffee-coloured fluid. The urine contained traces of albumen, as shown by the nitric acid test; on applying heat, the albumen became almost solid. The urine was acid in reaction, very offensive, and dark in colour; the specific gravity was 1014. He passed a very restless night, and in the morning jumped out of bed, vomited a large quantity of black fluid, became comatose, and died at 9.30 A.M. on June 25th, 1884, of yellow fever. He was buried immediately, in a coffin coated on the inside with coal-tar and carbolic acid. His clothing and bedding were burned; and the case was reported to the sanitary authorities.

The eleventh case was that of a Roman Catholic nun, Sister T., aged 80, who died of enteric fever on June 24th, after a prolonged illness and much suffering.

The twelfth case, Mrs. H. P., aged 20, died on June 25th of yellow fever.

The thirteenth case was a clerk in a merchant's office, Mr. C. J. R., aged 19. He died of yellow fever on June 28th, after three days' illness. He had black vomit.

The fourteenth case was J. J. M., a clerk in the Colonial Secretary's office, who died of yellow fever, after four days' illness, on June 28th, 1884. He had black vomit.

The fifteenth case was that of the Rev. P. S., aged 29, colonial and garrison chaplain, who died at Bishop's Court, on July 2nd, of yellow fever.

The sixteenth case was that of Mr. H. M. T., aged 35, the Queen's Advocate, and Registrar-General of the West African Settlements at Sierra Leone. He died at sea on July 9th. There were yellowness of the skin, congestion and inflammation of the eyes, bleeding from the mouth, nose, and gums; and, shortly before death, there was black vomit. He sailed from Sierra Leone on July 2nd, and at the time presented all the symptoms of remittent fever. He complained of pains in the head and deep-seated pain in the eyes, and above the orbits. His tongue was red, large, and flabby, and he suffered from nervousness and want of sleep.

The seventeenth case was M. C., aged 41, the manager of the West African Hotel in Freetown. He died, after a very short illness, on July 6th, of yellow fever. He was many years in the Senegal Colony, and had a severe attack of fever there, which he considered made him proof against the Sierra Leone fever. Shortly before his death, he stated that to live was quite impossible, because "he felt as if his

heart was failing, and he had no strength left in his body to resist the vomiting" and the fever. It is worthy of remark that the disease amongst the Europeans confined itself, in a great measure, to the merchants' clerks and agents, who either took their meals at this hotel, or who spent much of their spare hours in that part of the lower levels of the town in which their houses were situated, close to this building.

The eighteenth case was that of a child named Miriam V. P., who died on July 2nd of yellow fever.

The nineteenth case was Sabina D., aged 21, who died of yellow fever on July 6th. She was a few days ill.

The twentieth case was Charlotte T. W., aged 40, who died of yellow fever on July 8th. She was four days ill before black vomit set in.

The sad events thus recorded are described with a view to refer to the particular facts which were noted during the occurrence of these calamities, and which tend to illustrate and confirm the conclusions naturally arising during the prevalence of an outbreak of yellow fever.

The European and native population suffered together from this fever; although the newly arrived, the robust and the plethoric, and those of unbroken constitution amongst the Europeans, appeared to suffer most. In all, the symptoms, from the period of being attacked until the end, were identical. These were roving pains in the muscles of the limbs; distressing pain in the head and across the loins; supra-orbital pain and suffusion of the eyes; irritability of the stomach, and a feeling of uneasiness; the tongue was often tremulous, and very red in colour; the pulse was quick and full; the skin was dry, and communicated a harsh sensation to the hand. These symptoms lasted for a day or two days; and medicine failed to bring about the slightest change. The bowels were moved, and the skin acted; but quinine failed in every case. A peculiar yellow appearance took place on the neck, face, and chest. The eyes looked bright; and the urine, profuse at first, now became scanty, dark in colour, and, on the application of heat, was found thick with albumen. The evacuations downwards were becoming darker. The vomiting, at first profuse and watery, now was scanty, and very distressing. There were great weakness, and a torpidity which deluded; and the third day ended with an apparent improvement in the patient's state, to be followed by low muttering delirium, great restlessness, and vomiting, until the fourth day, when the invariable forerunner of a fatal termination—the black vomit—made its appearance, and was ejected from the stomach with a spasmodic effort and force which once seen could never be forgotten. It had a peculiar odour, stained linen black, and was nearly always prognostic of approaching death. The three most diagnostic symptoms of this disease occurring in Sierra Leone amongst all who suffered from the fever raging amongst the native and Europeans were: 1, pain in the muscles of the arms and legs, in the head, in the eyes and above the orbits; 2, albumen in the urine; and 3, black vomit about the fourth day. There was a peculiar pain in the chest, of which many complained, and which was intensified when the vomiting was persistent. This was accompanied by a red flabby tongue.

The treatment adopted consisted in saline purgatives, diaphoretics, and diuretics; quinine in large doses; turpentine-injections; Warburg's tincture; nourishing soups, good nursing, and stimulants. The intensity of the malady resisted the remedies prescribed, and quinine appeared to completely fail to act. Warm baths and mustard-poultices relieved the pain over the stomach and præcordia, and checked for a time the pain in the chest and the distressing vomiting. Carbolic acid, morphine, and chloroform, controlled the irritability of the stomach for a time only. Liquor ammoniæ acetatis gave great relief in many cases, but completely failed in others. Jaborandi appeared to debilitate, and Warburg's tincture was vomited up almost as soon as swallowed. The prompt and immediate removal out of the area in which yellow fever is prevalent should be effected before the severity of its type has had time to take firm possession of the system, and before the blood has become hopelessly saturated by that which generates this disease. Immediate removal to the higher elevations, to a pure atmosphere, or to sea, on the open ocean, appears the most reliable method of reducing the severity of an attack, and changing the character of the disease. The majority of the cases which were sent early to the top of the mountain at Leicester Peak, 1,500 feet above the sea, recovered under the treatment usually adopted for the ordinary endemic remittent fever of the country; because it appeared as if the severity of the fever expended itself on the third or fourth day, and the period of convalescence, although in these cases protracted, yet ended in recovery. Three cases, having all the early symptoms of yellow fever, were removed,

on the first day of being attacked, to the hills, and all recovered. A fourth was greatly benefited by the change, and for a few days showed decided improvement; but, unfortunately, perforation of the intestines occurred, hemorrhage came on, and death took place from enteric fever after a prolonged illness and much suffering.

One case of yellow fever, and one of enteric fever, having occurred amongst the soldiers of the 2nd West India Regiment, careful investigation showed that the men had contracted the disease in the lower levels, and in the unhealthy quarters of the town. At once the troops were confined to barracks, at Tower Hill, standing on an elevation, and distant from the town where yellow fever was raging epidemically. No fresh cases occurred amongst the soldiers; and, although many were admitted into the military hospital suffering from a severe form of remittent fever, yet none died. Preparations were made for an immediate exodus to the open on the top of the Leicester range of mountains, at an elevation of 1,000 feet, where the troops were to have encamped. The wooden huts used as a sanatorium on Leicester Peak, 1,500 feet high, were at once placed in a habitable condition, and accommodation provided for twelve beds in the large hut, three in another, and two in the smallest. The "Hospice," a house the property of the Roman Catholic mission at Leicester Peak, was used by the sick during the epidemic, and here were treated some of the cases which recovered. The soldiers, after treatment for fever, were frequently sent, until convalescent, to the sanatorium, from which they returned in health to duty.

Communicability of Yellow Fever.—The most elementary laws of sanitation are almost unknown amongst the natives on the West Coast of Africa, and the inhabitants of Sierra Leone are alike uninformed on the elementary rules of hygiene, on the most important facts concerning food, on the dangers of defective drainage, the contamination of water and the atmosphere, and the ways and means to health. They are as primitive to-day as they have been since 1838-39, and yellow fever is still of frequent occurrence.

If it be true, as some experimenters have shown, that the earth taken from a cemetery of persons dead from yellow fever, and mixed with fluid, and inoculated into the blood, is capable of producing all the most fatal symptoms of yellow fever; and, again, if further evidence prove that, if the blood of a person dead from yellow fever be inoculated into that of a living person, yellow fever is transmissible through the circulation; then it will have been proved that yellow fever is a transmissible disease, and is capable of being communicated. From a health-officer's point of view, considering the effects of this disease upon the human race, it must ever be the prominent aim to prevent the spread of this most malignant disease. Allowing that yellow fever is capable of being transmitted, and admitting that there are laws governing the growth of the smallest living organisms as well as of trees, plants, and insects, and being aware of the presence of certain noxious and invisible microzymes, bacteria, vibrios, monads, and bacilli in the atmosphere, and that these organisms are the product of animal and vegetable life in the presence of heat, moisture, and certain atmospheric conditions in localities such as are existing in Sierra Leone, that yellow fever is a preventable disease there appears no doubt, and this may suggest at length some method of applying a destroying power so as to prevent and destroy the growth of the yellow fever bacillus by chemical agency or by inoculation.

Concluding Remarks.—There is no question that, in the matter of sanitation, we must decide between standing still and doing nothing, or in making a general improvement by directing attention to the defects which are most obvious and demanding their removal. Within the last half century sanitation has taken the first place, and land-drainage, ventilation, and town-sewerage have developed into a science. Town-sewering and the enforcement of other social regulations, vaccination, and sequestration, have contributed to prolong life from five to fifty per cent.

The improvement in a certain town in Wales, during the past thirty years, has reduced the death-rate from 332 per thousand to 232, while the average at death has been raised from 17½ to 27 years. If so much can be effected in a single generation, what may not be done when the bases of sanitation become better understood, and more scientific in character? There is ample room in Sierra Leone for sanitary improvement, and the most important requirements demanding the attention of the proper authorities are the disposal of sewage, ventilation, and a constant and unstinted supply of water. There can be no question that an immense amount of disease is due to perfectly removable causes; but there is little use in isolated studies of facts and possibilities. Scarcely anything short of a sweeping reform will suffice to bring about the desired improvement in the health of a community, where so many valuable lives have been lost by the most culpable negligence, and the grossest ignorance of the commonest laws of

cleanliness, such as existed during the prevalence of the yellow fever epidemic at Sierra Leone in 1884.¹

REMARKS ON THE BRITISH PHARMACOPEIA OF 1885.

By ROWLAND H. COOMBS, M.D.,

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THE new edition of the *British Pharmacopœia* may be pronounced to be a great improvement on its predecessor. It contains many new and valuable drugs; and, whilst omitting a very few that have for the most part fallen into disuse, it supplies us with fresh preparations of undoubted utility and convenience. The definitions of the various chemical substances seem to have been revised with great care, and, in the majority of instances, to have been amplified. The botanical terms and definitions have likewise been much extended. The materia medica teacher and student will not perhaps greet with unqualified approval the numerous instances in which the names of the plants, etc., of the vegetable materia medica have been changed. On taking twenty-seven infusions of the edition of 1867, and comparing them with the same twenty-seven infusions of the present *Pharmacopœia*, we find that the botanic name of the plant used has been entirely altered or varied in about one-third of the cases; the same proportional change will be found by comparing the botanical source of twenty-eight oils of the 1867 edition with the same substances in the present one.

The Latin terms appear to have been carefully revised, and a strict adhesion to a literal etymology has been secured when we find the fruit from which we derive elaterium, known as the squiring cucumber, described as "Ecballium elaterium" (ἐκβάλλω) and not "Ecbalium (officinatum)," as in the former edition. Here we rightly gain a letter, but under Elemi we lose one. Elemi, which used to be described as coming from Manilla, in the Philippine Islands, is now described as "Manila elemi." This is the Spanish spelling of the name. The "Emplastrum calefaciens," translated into English in the *Pharmacopœia* of 1867 as "warm plaster," is more correctly given as "warming plaster;" and an old friend, brown soap cerate plaster, formerly known as "Emplastrum cerati saponis," gets the name "Emplastrum saponis fuscum."

The use of a synonym for many of the substances in the *Pharmacopœia* shows unequal handling. We find "Epsom salt" as a synonym of "Magnesii sulphas," "Fowler's solution" for "Liquor arsenicalis," "Donovan's solution" for "Liquor arsenii et hydrargyri," yet we miss "Dover's powder," "Grey powder," "Laudanum," under the headings of the official names for these common drugs.

The doses are not satisfactorily given. The argument that the *Pharmacopœia* is not a treatise on therapeutics will be put forward, but, admitting this, the principle of authoritative direction in dose has been adopted; and to find "tartarated antimony" described as a diaphoretic in the dose of one-sixteenth to one-sixth of a grain, and as an emetic in the dose of one to two grains, and to turn to the salts of quinine, and to find a bald statement of a dose of one to ten grains, without any allusion to the highest value of the drug as an antipyretic, is disappointing. Why sulphate of copper, ipecacuanha, tincture of rhubarb, sulphate of zinc, should have their therapeutic use scantily indicated, and quinine, aconite, arsenic, and other drugs should be denied similar notice, is difficult to appreciate. In a book, too, of such authority, a table to calculate the dose of medicines for infants and children, or a statement of what such doses should be, is surely required. A curious want of method is shown in the doses of the three highly useful and important drugs (apomorphine, ergotine, and morphine) contained in the hypodermic injections. The dose of hydrochlorate of apomorphine is not given at all, and we are left to calculate what proportion of a grain we are administering when we employ the "Injectio apomorphinæ hypodermica" in a dose varying from two to eight minims. The dose of ergotine is stated at two to five grains; but under the "Injectio ergotini hypodermica" we are left to make an arithmetical calculation as to how much ergotine we are administering in the extremes between three and ten minims. In the hypodermic injection of morphine, the strength is clearly stated

¹ Since the above was written, news has come from Sierra Leone of the death of two distinguished medical officers in Freetown; Surgeon Nathaniel Cameron, Army Medical Staff, who died on July 9th, of typhoid fever, at Tower Hill Barracks; and Dr. Robert Smith, the Acting Colonial Surgeon of Sierra Leone, who died on July 4th, 1885, of pernicious remittent fever, after a short illness, at his residence, in Freetown. He was born in Freetown, in 1840, and was appointed assistant-colonial surgeon in 1866. There has been much sickness this year in Sierra Leone, and general unhealthiness still prevails in the colony.