

ment is always much impaired. Some maniacs are most rational on general subjects, and it is only on special topics, or trains of reasoning, that they show their insanity.

Occasionally the maniac enjoys a degree of happiness which in health he appears incapable of. Some individuals are tormented with visions of disgusting objects; the sense of smell appears sometimes gratified, at other times disagreeable odours are fancied, and annoy the patient.

On *dissection*, the skull of the insane is often very thick, and more serum than usual is found in the cavities of the brain, with marks of previous inflammation, such as a thickening and opacity of the arachnoid membrane, and often preternatural hardness of certain parts of the substance of the brain, with more or less alteration of the cortical substance.

(To be continued.)

ARTICLE III.—*Medical Topography of the Western Coast of Africa.*

By D. RITCHIE, Esq., Surgeon R.N.—(Continued from page 414.)

IN describing the Bights of Benin and Biafra, it is possible that feelings engendered by the wearisome monotony of a lengthened station there, may have thrown over the whole a gloom which may not be felt by those inhabiting the shore, who have never, from the integrity of their vital functions, experienced the prostrating influence of endemic disease. To them the moderate temperature, the gentle breezes, and the perpetual summer, may be a constant source of enjoyment. Here man never feels the chilly blasts of winter, nor the scorching breath of the arid desert, which burns up other countries. He requires few artificial aids to render life endurable; nature provides that which neither labour nor wealth can obtain beneath our northern sky. It is not necessary for him to fetter the activity of his muscular system by complicated garments, nor to escape from the sharp winds of heaven by surrounding himself with ponderous masonry and intricate defences; the atmosphere is so genial that he feels no inconvenience, either from his nakedness or his rude and imperfect hut. Notwithstanding, however, all that can be said in favour of the Bights, it was a matter of congratulation to all of us to escape from them, and to find a new scene opening to us after passing Cape Lopez. We beheld with delight, as we advanced beyond the 5th degree of south latitude, a bolder shore, picturesquely variegated with hill and valley, with verdant patches of forest and pasture spread over them. The sky above assumed a brighter aspect, the southern gale around breathed

a more refreshing influence, the sun no longer shone through an obscure atmosphere with a moon-like lustre, the stars no longer glimmered with a pale uncertain light, and our feelings, oppressed before with a sympathetic gloom, expanded beneath the vivifying power of nature arrayed in smiles. But it is to be understood that the brilliancy here spoken of is in contrast with the climate we had left, and not with that of more highly-favoured climes. Clouds were still frequent in the sky, though they more generally assumed airy and fantastic shapes, and were much less frequently diffused in the form of mist. The temperature in January, when we ran along the shore, was always below 80° ,—the minimum being 74° . This is, however, the middle of the second and shortest winter, and therefore one of the coldest periods of the year, yet, probably, not equal to July, when the sun has advanced to its greatest distance from the zenith of this district, and causes to set in from the high southern latitudes those temperate breezes which have neither been saturated with the emanations from the land nor the moisture from a tepid ocean. This opinion is, however, founded only upon the analogies of the coast southward and northward, for our transient visit did not enable us to make any extended observations on this point.

When the early voyagers, inspired with the desire of possessing and inhabiting new countries, and with the sanguine hope of finding a gold region or a paradise, beheld these beautiful shores everywhere intersected by rivers, and indented with numerous bays, offering a commodious and sheltered anchorage, it appears surprising that they never formed any permanent settlement along all this extent of coast from Cape Lopez to the River Congo,—a distance of 360 miles; although they have built forts, and squandered treasure and life, in rendering habitable the most intractable localities, they have left to dispersed and barbarous tribes this inviting land, which promised an easy conquest.

No situation, from its beauty and collateral advantages, appears better adapted for the seat of an important commerce, and for disseminating the lofty impulses of civilisation, than Kabenda. It is a fine deep bay, about ten miles north of the Congo, offering a safe anchorage, and an easy landing-place on its broad white sands, upon which the waves are scarcely seen to break. Behind, on a gentle hill, under the shade of palms and lofty trees, is situate a small native town, inhabited by a submissive and docile people. A little way beyond the cultivated patches and the lofty forest which lies along their base, a low grassy ridge of hills, variegated with trees, runs in the same direction with the shore. The soil is rich, water abundant, and the climate in every respect appears more salubrious and agreeable than anywhere else along this coast. Under these circumstances, it is remarkable that none of the intrepid pioneers of our race and religion have made this the centre from which a most important and extensive influence might go forth reaching

into the very depths of Africa, along the course of that noble stream the Congo.

The current of this mighty river, broad and deep, is never arrested by the tide, and is even felt by ships 100 miles from the land. Where its waters mingle with the ocean, myriads of monads, deriving their existence from the organic materials brought from the interior of the continent and subjected to a new influence, impart to the waves a bright crimson hue, nearly resembling blood, beneath the rays of the setting sun. Its banks on each side, as far as Europeans generally ascend, are formed of low alluvial islands, covered with dense and lofty foliage. Beyond these, at a distance of two or three miles, ridges of low hills, partially cultivated and partly clothed with impenetrable forest, follow the sweep of both shores. About ten miles above what appears the true mouth of this river, where its width is contracted to two miles, and its current thereby concentrated, no bottom has been found with a sounding-line of 113 fathoms. This extraordinary depth is however limited, as soundings are found a little higher up, but still sufficient for the largest vessels until we ascend 140 miles, when a series of rapids contract and interrupt the channel for forty miles. After passing these, it again expands into a wide, placid, and majestic river, with verdant and cultivated land on each bank, and high hills in the distance. Its course beyond is still a mystery, and also the fate of its unfortunate explorers, Captain Tuckey and his companions. This circumstance will probably long deter others from endeavouring to solve it, although there is good reason to believe, that an expedition, conducted with greater attention to the preservation of health, might terminate very differently. If such success should ever be attained, it is impossible to contemplate the consequences without feeling impressed with their importance. The facility of intercourse presented by a long fluvial navigation through a fertile country, comparatively well peopled, rich probably in mineral productions, and possessing an agreeable climate, will in time introduce into the interior, civilisation and humanity, instead of degradation, rapine, and slavery, as at present. The abundance of rich minerals is inferred from the fact, that malachite is very often to be obtained at a low price, showing the facility with which it is collected. The same formation where this abounds will, no doubt, be found to possess other and more important materials to reward the enterprise of the discoverer. The establishment, moreover, of a legitimate commerce, will at once rescue this part of Africa from being the seat of that revolting traffic, the slave trade.

To prevent repetition, a detail of the diseases of this part of the coast, their character and causes, will be included with those to which they are entirely similar. All the habitable part farther to the south, alone now remains to be described, and which, from the tame and uninteresting features which pervade it, will be

dismissed very briefly. Between the Congo and St Paulo de Loando, for 180 miles, the littoral district is generally dry, barren, and covered with a scanty soil, through which the primitive rock frequently juts out. It rises from a rocky shore into low ridges, the sides of which are clothed sparingly with stunted trees and a brownish coloured vegetation. A few small rivers derive their origin from a range of mountains about twenty miles off, and which are observed from sea to be parallel with the shore. The country is said by observers to be fertile and well-peopled near the source of these rivers, but as they approach the shore the fertility is limited to the narrow valleys through which they run. They are only equal to the support of a thin population, weakened by internal divisions, and degraded by that universal curse of African society, domestic slavery.

As we advance southward, the sea-worn cliffs present appearances of stratification, and thick deposits of hardened clay, deeply coloured occasionally with iron, but possessing every variety of tint belonging to similar formations elsewhere. These deposits constitute the undulating features of this locality, and when subjected to cultivation are decidedly productive. Along the base and on the brow of one of these is situate St Paulo de Loando, the most imposing looking town on the west coast of Africa, and the government-seat of the Portuguese colony established here. From the scarcity of good water, the paralysing restrictions of an imbecile government, and the suppression also of the slave trade, by which it rose into wealth and importance, it is rapidly decaying,—a just retribution for neglected opportunities and perverted power. The adjacent country is capable of yielding abundantly every variety of tropical produce; but it has been depopulated, its resources have never been developed, and its harbour is rapidly filling up with the debris washed down from the adjacent cliffs, and with the sand carried hither by the tide. Under these circumstances, no hope exists that it will ever emerge from its present condition, until the dominion of that race has passed away whose footsteps crush into the very dust the rights and liberties of the unfortunate beings who submit to their sway.

From St Paulo de Loando to Benguela, a distance of 220 miles, the configuration of the coast possesses uniform features,—low undulating hills in the foreground, covered with a stunted vegetation, over which rises detached trees and numerous lofty candelabrum cacti. Rarely a sandy beach breaks the continuity of the sea-worn wall, which extends in a wavy line, sometimes forming bluff headlands and again shallow bays. These cliffs are composed of calcareous clay or limestone strata, disposed at various angles, and containing numerous marine fossils, of which the most abundant is a gigantic species of ammonite. A range of lofty mountains, having a bold and rugged profile, from which the clouds rarely disappear, runs in a line nearly parallel with the shore, between thirty

and forty miles inland. The waters coming from thence form numerous rivers, which descend to the sea through narrow valleys, which frequently, near their mouths, expand into small alluvial deltas. These are the places from which alone marshy exhalations can arise, for the declivity and dryness of the general face of the country obviate the possibility of such existing elsewhere. A few Portuguese are found at several unimportant points along this coast, engaged in their nefarious traffic at a distance from constituted authorities; but the country appears from the sea generally a desert, until we arrive at Benguela, the last and one of the principal Portuguese towns along this coast. It is situate at the bottom of a wide open bay, upon a sandy plain, with bare hills rising behind. A sluggish river runs through the adjacent plain, conferring lavish fertility, and at the same time feeding stagnant pools and nourishing aquatic vegetation. As the town was built upon the profits of the slave trade, and flourished in proportion to its activity, so now that the open pursuit of that traffic has been abolished, and its gains counterbalanced by its losses, the progress of decay is rapid and irretrievable. Beyond this to the southward, rain and streams of fresh water are less frequent, and the littoral district of country becomes gradually more inhospitable, until the whole shore presents the appearance of a sandy desert, incapable of supporting life in any form.

It is impossible perhaps to find throughout the world a temperature more genial to the feelings, or an atmosphere more grateful, than is experienced over the preceding 19 degrees of latitude thus hurriedly sketched. Light breezes blow almost continually from the southwest, never rising into a refreshing gale, and seldom dying away into a calm of longer duration than an hour or thereabout. Rain is neither heavy nor frequent, except in November and April; these being the central months of the double tropical year, are affected by the atmospheric vicissitudes which always follow the course of the sun. But rain is, however, more frequent in November than in April, occurring on fourteen days of the former month, and on eleven days of the latter. This difference arises from the sun drawing with it, as it returns from the northward of the equator, the saturated atmosphere of the northern coast; and again, as it returns from the tropic of Capricorn, the pure air of the high southern latitudes. From this cause showers are more frequent and heavier during October, November, and December, than April and May; and, besides, the amount of water which falls is largest on that part of the coast which is nearest to Cape Lopez, and decreases proportionally as we advance to the southward, until it ceases altogether, about the 20th degree of south latitude. Light fertilising showers, though oftener heavy dews, are observed every month in the year; but they are least frequent in January, February, and March, and in June, July, and August.

The annual extreme range by Fahrenheit's thermometer is 18°5,

being from $65^{\circ}5$ in July, the coldest month, to 84° in January, which is not, however, the hottest month, having only the mean temperature of $79^{\circ}3$, while December has $80^{\circ}1$, and may therefore be supposed to be exceptional. The mean monthly range is from 70° in July to $80^{\circ}1$ in December. The mean daily range between eight A.M. and two P.M. is very small, being only $1^{\circ}1$. This, however, is considerably greater than that observed in the Bights, and indicates, along with a comparison of the other observations, a climate approximating more nearly to the condition required by Europeans for the enjoyment of health.

By comparing the preceding hasty sketch of this part of the coast with that already given of the shore to the northward of Cape Lopez, an accurate judgment may be formed of the gradations of climatic influences in generating and modifying diseased action. A purer atmosphere and a range of temperature that stimulates into activity the vital functions, at once constitute conditions, the importance and necessity of which to the enjoyment of perfect health are sufficiently apparent. In the development of disease, we no longer behold the faint struggles of the prostrated organic forces oscillating between vital action and chemical decomposition—the animal powers at the same time yielding to an internal poison, and labouring under the weight of a deteriorated atmosphere. There life perishes by a disorganisation, the result of deficient vitality,—here by disorganisation, the result generally of excessive action. A more correct idea, however, of the endemic morbid powers will be derived, from describing successively the diseases which were observed among a crew of 140, of whom 20 were negroes, than by any general statement that can be made. I therefore subjoin the following detail of these, as they were observed throughout one year.

Fever, here as elsewhere along this coast, is by far the most important disease, both with regard to the numbers who suffer, and the consequences which result from it. According to our experience it prevails most during the hottest months *in the year*, and was not observed when the thermometer was permanently below 80° . On this account only five cases out of thirty-seven for the year occurred from July to December, and not one during the three coldest months, when the temperature did not rise above 76° , and the mean was not above $72^{\circ}9$. It should also be stated, that the number thirty-seven gives a much more unfavourable idea of the climate than properly belongs to it, as five of these were cases of relapse amongst individuals who had previously suffered from fever in the Bights; and it is, moreover, probable that the predisposition to the disease was contracted there by several others. They were all conducted to a favourable termination on board, without requiring to relinquish the service, and without any apparently permanent constitutional deterioration. This result was the consequence of the vital forces continuing sufficiently active to

establish a vigorous re-action and subsequent remission so complete as to enable the quinine to exert its tonic power, and break at once the chain of morbid actions. On this account, then, a very considerable number of the cases were ephemeral, and the result on health trifling. They very seldom displayed any disposition to run a definite course, like the more severe forms previously observed.

The intrinsic power of the vital affinities resisted and overcame the transforming influence of the morbid poison, when it was relieved of internal obstructions, and stimulated to activity. We then beheld, without fear of the result (or rather with a conviction that the morbid phenomena exerted a salutary effect), fresh cases of fever arise and disappear. So disposed had the system become to febrile action, that no deviation from health occurred independent of it. The pure forms of fever were, however, observed to arise always in conjunction with the conditions previously mentioned—to which the essential cause of fever has been ascribed—and never without them. No case of fever was ever observed to result from exposure to the sun, or from prolonged exertion on those parts of the coast where the vegetation was scanty and languid, where the moisture of the atmosphere was absorbed by a thirsty soil, or where the temperature was below what appears a necessary condition to the production of the febrile poison. As these causes, then, are more rarely in conjunction over this part of the coast than over that previously described, so much less is the liability to fever from exposure to the influence of the sun, and more particularly from exposure to the influences of localities where the whole are not united.

Next to fever, the most numerous class of diseases are those of the mucous membranes, comprising catarrh, cynanche tonsillaris, aphtha, and ophthalmia, numbering altogether eighteen cases. They are attributed to the comparatively low temperature, acting on systems rendered morbidly susceptible by a lengthened sojourn in a warmer and more uniform climate, and were proportionally much more frequent amongst the negro natives of the littoral district in the neighbourhood of Cape Palmas, on the Ivory Coast. These affections presented every variety, from the slightest and most temporary, to the gravest and most perplexing. They all, however, terminated favourably, under the use of tonics employed at the earliest possible period, after the first violence of the disease had been subdued by antiphlogistic treatment, and before irreparable change of structure had ensued.

Resembling these in their relative prevalence, in their constitutional phenomena apart from the local lesion, and in their results, are grouped together sixteen cases of affections of the intestinal canal and its proximate organs. The more mild and undefined examples of these were thirteen, which were placed under the genus

dyspepsia; while the more severe and strongly-marked were comprised under their appropriate genera; hepatitis one case, dysentery one case, and icterus one case. Although this enumeration may accurately indicate the relative prevalence of these diseases on board a ship, it will, in all probability, vary slightly on shore. There the congestions which are apt to be induced by repeated febrile attacks will render local organic disease of the viscera more frequent and unmanageable. Little doubt can exist that all these affections are liable to be excited or aggravated by the same cause which produces fever; and that the local determination is merely an accidental condition, arising from some local irritation or debility. This opinion is strengthened by the fact, that dysentery becomes vicarious for fever when a mechanical irritant is introduced into the system of those predisposed to the latter, by using water turbid with debris. This result is frequently observed to arise from the internal use of the water of the Congo, or of other rivers, before it has been allowed on board to deposit the matters floating in it. The comparative benignity of these diseases may be inferred from the fact, that all of them terminated favourably.

A more numerous but much less important class of affections than the preceding I here group together as "cutaneous," that tissue having been implicated in all of them, but without any other bond of union. It comprises nineteen cases of superficial inflammation, scorbutus, œdema (generally a symptom of the former), and ulcers. As none of these presented any remarkable features, nor seemed to be caused by endemial influences, it is unnecessary to say more, than that they all rapidly recovered under the use of appropriate remedies.

The most important group of cases, from entailing on us the loss of one man (who was sent to the hospital, and subsequently invalided), comprises one case of pneumonia, one of pleuritis, and one of phthisis. The last, after resisting for a lengthened period the employment of remedies on board, was sent away from the station, that he might enjoy the advantages to be derived from a change of climate. The subjects of pneumonia and pleuritis were negroes, in whom the disease assumed an asthenic type, the result of a deteriorated condition of the vital structures, arising partly from a restricted diet, and partly perhaps from the climate. The symptoms did not indicate the propriety of general blood-letting, and they terminated favourably without recourse being had to it.

The only remaining diseases include four cases of rheumatism and one of nephritis. The former were all mild and tractable forms of the complaint, and resulting from the ordinary cause—exposure to cold or wet. The latter was induced by long pre-existing stricture of the urethra, and yielded to the usual treatment. As no endemial influence could be traced in the causation or progress of these, it is unnecessary to dwell longer upon them, or to mention

here anything further than injuries, the effect of violence, which considerably augmented our sick list.

The preceding sketch may perhaps give too favourable an impression of the salubrity of this coast; but it is impossible to consider that as an unhealthy locality, where men can expose themselves for weeks together in an open boat, as they often do, without contracting disease. Having thus completed my design in writing this article, it is hoped that no error of consequence has anywhere been committed.—I can only say, that I have carefully endeavoured to guard against this, by detailing merely the result of personal observation and experience.

ARTICLE IV.—*Contributions to Legal Medicine; being Observations on the Medical Jurisprudence of Infanticide, with especial reference to a Case in which there was extensive Fracture of the Skull.* By J. A. EASTON, M.D., Medical Officer to the Glasgow Police.

IN the number of the "Monthly Journal" for last October, I submitted a few general observations on the medical jurisprudence of infanticide; and, as a reason and apology for now returning to the same subject, I may allude to its intrinsic difficulties in a medico-legal relation, and to the fact, that the crime of child murder has of late become alarmingly prevalent in all parts of the country. At every circuit which has been held of late years in Scotland, one or more cases of child-murder by itself, or of child murder coupled with the alternative charge of concealment of pregnancy, have occupied the attention of the court, many of them committed under circumstances of great atrocity, and in such a manner as to make conviction difficult, if not impossible. Whether the difficulty in obtaining convictions in such cases be attributable to any defect in the science of medical jurisprudence, or should rather be ascribed to those barriers which the law itself has raised, in its anxiety to save the innocent at the risk of absolving the guilty, are questions of great importance to society generally, and ought to receive from the medical profession in particular the most attentive consideration.

In the paper already referred to, I adverted to the legal definition of live birth, and to the circumstance, that, while in physiology, breathing and living are synonymous—in law, the breathing may have been complete, though not the act of a child sufficiently alive—legally—to undergo the process of murder. Yet there is no paradox in this after all. The law does not dispute the physiological affirmation, that a breathing child must have been a living child at the time and at the place where the respiration was performed; but, aware of the fact that air may enter the lungs of a child before it has been detached from its mother, and aware also