

WEST COAST OF AFRICA STATION.

SICK-RATE.

Average Ratio of Sickness for 10 Years, 1890 per 1,000.

West Coast
of Africa
Station.

DURING the twelve months embraced in the present report, the squadron on the West Coast of Africa consisted of twenty-three vessels. Of these, one was a frigate of the fourth rate, and two were frigates of the sixth rate. There were twelve gun-vessels; one steam vessel, employed almost exclusively in the Lagos lagoon; two sloops; four store-ships; and a receiving ship, permanently stationed at Sierra Leone. The mean force, corrected for time, was 1,445; and the total number of cases of disease and injury placed under treatment was 3449, which is in the ratio of 2370·4 per 1,000 of mean force, a considerable increase as compared with the sick-rate of the previous twelve months, and much in excess of the average sick-rate of the station.

The following vessels exceeded the average sick-rate of the station:—The Bristol, Archer, Dart, Jaseur, Lee, Sparrow, Speedwell, Torch, Investigator, Greyhound, Zebra, Vindictive, and Isis.

FRIGATES.

The sick-rate of the Bristol is high. On their first introduction to the station, her crew suffered severely from a fatal epidemic of yellow fever contracted under the following circumstances. She had only arrived on the station about the end of December, having reached Sierra Leone on the evening of Christmas-day. Light winds prevented her reaching the

anchorage at Free Town, and she was consequently anchored near the lighthouse at Cape Sierra Leone. Free Town was reported to be comparatively healthy at this time, although yellow fever had prevailed very extensively some months previously. In the Isis receiving ship, which was moored at a distance of about 200 yards from the landing-place at Free Town, several cases of yellow fever had occurred, and in fact almost every new arrival on board that vessel for several weeks had been stricken with the disease, which in most cases proved fatal. It being considered not improbable that her proximity to the shore had something to do with the persistence of these fatal attacks, it was determined to move the ship to a more healthy part of the harbour, and accordingly, on the 28th of December, four officers and 112 men were sent from the Bristol to move her. Every customary precaution was taken to obviate the risk the men ran from the malarious character of the locality, and they were effectually protected from the heat of the sun by being sent away early in the morning and returning late at night, while during the day their work was carried on under the roofing of the hulk. They were thus employed for two days, and although the work was necessarily very heavy, no apprehensions were entertained of any evil consequences following it. During this time some of the officers landed, and with one exception they and the boats' crews which landed them were the only persons from the Bristol who communicated with the shore; that exception was a party of petty officers who landed on the 29th, to purchase mess traps.

On the 30th of December, the Bristol left Sierra Leone for Monrovia, and on that day an officer was placed on the sick-list with what proved to be yellow fever. He had landed on the 26th, remained on shore the whole day, exposed to the sun, and bathing in the heat of the day, and having missed his passage off to the ship in the evening, went on board the Isis, where he passed the night. He was taken ill on the 29th, put on the sick-list on the 30th, and after passing through a most severe attack, ultimately recovered. On the 31st of December a seaman who had been on board the Isis was taken ill, and died on the 3rd of January. The next person attacked was an officer, who had also been on board the Isis. The disease then became epidemic amongst the men who had been employed in removing

West Coast
of Africa
Station.

FRIGATES

West Coast
of Africa
Station.

that vessel. The order in which the cases and deaths occurred was as follows :

On the 30th December	1	case was put on the sick-list.
" 31st "	1	" " "
" 1st January	21	cases were " "
" 2nd "	6	" " "
" 3rd "	3	" " "
" 4th "	3	" " "
" 5th "	2	" " "
" 6th "	1	case was " "
" 12th "	1	" " "
Total - - -	30	

On the 3rd of January	-	-	1	death occurred
" 4th "	-	-	4	deaths "
" 5th "	-	-	6	" "
" 6th "	-	-	4	" "
" 7th "	-	-	3	" "
" 10th "	-	-	3	" "
" 17th "	-	-	1	" "
Total - - -			22	

The last case that occurred on board was on the 12th of January, in the person of a servant who had been on board the Isis on both days. He was sent to Ascension Hospital on the 15th, where he died on the 17th.

All the cases were clearly traceable to the Isis, the men affected all belonging to the working party sent on board there, with the exception of one man who had landed with the petty officers as stated above. In that case, however, it appears that the boat on her return from the shore went alongside the Isis; that the man in question went on board and remained for some time; that the others did not leave the boat, and that he was the only one of the party who contracted the fever. On the 3rd of January, thirty-two persons having been attacked with fever, of whom one had died, the ship's course was changed for Ascension, where she arrived on the 13th. During the passage every precaution was taken to separate the healthy from the sick, and it was

West Coast
of Africa
Station.

FRIGATES

doubtless owing to the judicious measures adopted in this respect, and to the free ventilation on board the Bristol, that the disease did not extend to any of the ship's company who had not been exposed in the Isis. On the arrival of the Bristol at Ascension, twenty-one of the worst cases were landed and placed in quarantine in two hospitals; strict quarantine was maintained between the ship and the shore; and it was in all probability to the efficient manner in which this system was carried out that the disease did not spread to the garrison.

This epidemic is remarkable in several respects, but especially in the great mortality it occasioned, and in the fact that no one was attacked who had not been employed in the Isis. There can be little doubt, that had no communication been held with that vessel, the Bristol would have escaped the disease, for it does not appear that any cases of yellow fever had occurred on shore for some time previous to her arrival. Although on an average seldom more than five or six Europeans were borne on the books of the Isis, supernumeraries were occasionally received on board; and it was through them that the disease seems to have been kept up from about the middle of September to the time of the Bristol's arrival, the first case having, there is reason to believe, been contracted on shore, where the disease prevailed in August and September. The uncertainty which still exists in the minds of some as to the communicability of yellow fever renders it little matter of surprise that it should be determined to move the Isis to what was supposed to be a more healthy locality; but there can be little question that the existence of the fever poison in that vessel depended neither on the locality nor on the water used in the ship, to which some reference was made by the medical officers, but to a specific poison previously emanating from the bodies of yellow fever patients on board.

Besides this fatal epidemic, the crew of the Bristol suffered a good deal from diarrhœa during the Lady quarter of 1866, and from syphilitic disease contracted in England.

The sick-rate of the Archer was largely in excess of the average of the station. This, as in the case of the Bristol, was in some measure owing to the reduction of the complement in correcting for time, the return from the vessel being only for about six months. Unfortunately, however, like the Bristol also, she was visited by a severe epidemic of yellow

West Coast
of Africa
Station.

FRIGATES
continued.

fever, and although it did not prove so fatal as in that vessel, it occasioned a large amount of mortality. The disease was introduced into the ship by a seaman of the *Ranger*, who had been left at Loando in order to give evidence before the Court of Adjudication on a vessel seized by his ship, and supposed to be a slaver. The *Archer* sailed from Loando on the 26th of September, leaving this seaman with several officers and men behind, the latter being employed in repairing some machinery; and on her return on the 5th of October, the *Ranger's* seaman and a stoker of the *Archer* were brought on board from the *Pioneer*, labouring under fever, having been sent from the shore to that vessel two days previously. Yellow fever had been prevailing at Loando, and some deaths had occurred in a Portuguese man-of-war there. The surgeon of the *Archer* being ill, the assistant-surgeon of the *Pioneer* was ordered on board to do duty. On the 8th, the *Ranger's* seaman died with all the symptoms of yellow fever. During his illness in the *Archer*, his hammock had been placed in the steerage near the gun-room. On the 10th of October, she sailed from Loando for the mouth of the River Congo, where she arrived on the 13th. There a master's assistant was transferred to the *Pioneer*. After communicating with the *Speedwell*, she returned to Loando, arriving there on the 18th. On the 14th, a clerk, and a gun-room servant were attacked with fever, and on the following day two midshipmen. In the three latter cases, the disease was mild, but in the former, after the apparent approach of convalescence, a violent accession of fever occurred, vomiting of black fluid set in, and death took place on the 26th. In the meanwhile the *Pioneer* had arrived at Loando, and it was then ascertained that the master's assistant, who had been sent on board from the *Archer*, had been taken ill on the following day (the 14th), and had died with all the symptoms of yellow fever on the 18th. On the 24th the remainder of the working party was embarked, and the vessel proceeded to Ascension on the following day, arriving there on the 4th of November. On the 28th of October, a marine who had been taken ill on the 24th, died with black vomit. On the 27th, the assistant paymaster was taken ill, and died on the 30th. On the 28th, a sub-lieutenant and a serjeant of marines were seized. The former died on the 2nd of November and the latter on the 3rd. On the 1st of November, the assistant-surgeon who had been lent from the *Pioneer* was attacked, and he died on the 6th, two days after the arrival of the vessel at

West Coast
of Africa
Station.

PRIVATEES
continued.

Ascension. On the 6th a seaman was attacked, and died on the 10th.

On the arrival of the vessel at Ascension there were thirty-four cases on the sick-list, seventeen of which were fever in different degrees of severity. The vessel was kept in strict quarantine, and on the following day such of the convalescents as could with safety be landed were sent to the Mountain Hospital; and it was arranged that the crew and other cases not of a serious nature should be placed in tents at Comfortless Cove, while the ship was being purified. The sick on board were removed into the bows, where they had the full benefit of the fresh breeze. Every measure was taken to purify the vessel; but as cases continued to occur amongst the working party sent on board to perform that duty, it was finally determined to embark every one and proceed to England with all speed. This was accordingly done; the vessel sailed on the 9th of December, and arrived at Plymouth on the 9th of January.

Between the 6th of October and the 20th of December, when the last case occurred, ninety seven cases of fever were placed on the sick-list. Of these, twenty-eight appear in the returns as remittent fever, fifty-six as yellow fever, and thirteen as ephemeral fever. Doubtless, several of the cases not returned as yellow fever were mere modifications of that fatal disease. There were nineteen deaths altogether, which, supposing there were only fifty-six cases of yellow fever, would be about 1 death in 3, a proportion rather in excess of the average mortality from this fever; while if all the cases are considered as varieties of the same disease, the deaths to cases would be about 1 to 5, which is nearer the average mortality occasioned by yellow fever. Of these deaths five were officers, four of whom were members of the gun room, near which the hammock of the Rungler's seaman was hung, and where he died; the other officer was the assistant-surgeon, who was in constant attendance upon the sick until his own fatal illness set in. Two officers' servants also, whose duties necessitated their being frequently in the steerage, died; and all the servants in the captain's pantry (four in number), which was immediately opposite the midshipmen's berth, contracted the fever, as also did a seaman who was doing duty as a clerk in the office directly opposite. Of thirteen marines, three non-commissioned officers and six privates contracted the fever; and those who did duty as sentries in the steerage reported

West Coast
of Africa
Station.

FRIGATES

that they were taken ill while on duty there. All the gun-room officers, six in number, contracted the fever, and of these, as stated above, four died; and although the assistant-surgeon was the only ward-room officer in whom the fever had a fatal termination, several officers of that mess were also affected with fever during the epidemic. The disease, in fact, once introduced into the ship, progressed steadily, propagated by infection from the steerage as from a centre, and there can be little doubt that, had not the vessel proceeded to a cold latitude, the mortality would have been much greater on board. The clearing out of holds, and other measures supposed to be of a sanitary nature, are at such times of more than questionable utility, the men being harassed with work at a time when the mind is depressed with the knowledge of the prevalence of a fatal epidemic on board. No such clearing out, moreover, had or could have any influence in checking such a disease as yellow fever, which only ceases by perfect separation of the infected from the healthy, or by taking the vessel into a cold latitude. This was the condition of the *Archer*. On the 20th of December she had reached a cool climate, and no case occurred after that date.

Diarrhœa was frequent in this vessel in the Michaelmas quarter of 1865, as also were ulcers; but otherwise, with the exception of the above epidemic, there was very little sickness of any importance.

Although the *Rattlesnake* may be considered to have been in other respects a healthy vessel, her sick-rate, even with the necessary reduction of her complement in correcting for time, being below the average of the station, she was unhappily visited by an epidemic of yellow fever, which, although fortunately not affecting a large number of men, caused considerable mortality. The disease, as in the case of the *Bristol*, was doubtless contracted by intercourse with the *Isis* at Sierra Leone. The *Rattlesnake* arrived at that port on the 22nd of November, and there being no apprehension of danger, communication was freely held with the *Isis*, until the occurrence of a fatal case of yellow fever in that vessel, in the person of a boy, who having previously belonged to the *Rattlesnake*, was in the habit of going backwards and forwards between the two ships. He was taken ill on the 27th of November, and died on the fourth day. The *Isis* was thereupon placed in strict quarantine, but

cases of fever of varying severity now became frequent on board the Rattlesnake, twenty-two in all occurring during the epidemic. Of these, fifteen are entered in the return as remittent fever; five as yellow fever, all of which proved fatal and two of ephemeral fever; but the medical officer says justly that they might all be considered as phases of the same disease. The deaths occurred in the persons of the assistant-surgeon, who had recently joined the ship, and had attended upon the sick with the utmost assiduity until his own fatal illness prevented him; a carpenter's mate, the boatswain, one of the carpenter's crew, and the ship's painter. The carpenter's mate was the only one of those who had not been employed on duty or had visited on board the Isis; and in several other officers and men, attacked with fever, the seizure could be distinctly traced to that vessel.

Dreading a further extension of this most fatal fever, the Commodore, whose flagship the Rattlesnake was, decided upon at once proceeding to England; and, leaving Sierra Leone accordingly, on the 24th of December, the vessel arrived at Plymouth on the 10th of January 1866. Fever disappeared entirely as the ship advanced into colder latitudes.

In order to complete the history of yellow fever on this station during the period of this abstract, it will only be necessary now to refer to the disease as it appeared in the Isis.

The sick-rate in the Isis was considerably in excess of the average of the station. This vessel, as previously stated, was moored at a distance of about two hundred yards from the landing-place at Freetown. Her complement consisted of about twenty-eight men, of whom only six were Europeans. During the Michaelmas quarter of 1865 fever prevailed very extensively in Sierra Leone, and the mortality among the European population occasioned by it is stated to have been about twenty-seven per cent. During the same quarter there was also much fever in the Isis, said to have been of the remittent type, and affecting both Europeans and Kroomen. It occasioned very little mortality, however, only one man, the ship's steward, who for two days and nights had been in attendance on the sick on board, having died of the disease. He was ill seven days in all, and his concluding symptoms were those of yellow fever. He died on the 28th of September. On the 11th of October

West Coast
of Africa
Station.

FRIGATES

RECEIVING
SHIP.

West Coast
of Africa
Station.

RECEIVING
SHIP
continued.

a ship steward's assistant arrived from England: he joined the *Isis* on the 14th; on the 18th he was seized with febrile symptoms, and died on the 20th. An Engineer officer who had arrived from England at the same time, and joined the *Isis* on the 12th of October, was taken ill with fever on the 19th, and died on the 26th. The next person affected was a ship steward's assistant who had been sent from the *Rattlesnake*, at Ascension, and had arrived at Sierra Leone, and joined the *Isis* on the 20th of November. He was placed on the sick-list on the 27th of November, and died, with all the symptoms of yellow fever, on the 30th. In the meanwhile the *Rattlesnake* had arrived at Sierra Leone, and on the 26th of November a bandsman of that vessel, who was suffering from diarrhoea, was sent on board the *Isis* for treatment. He died of fever on the 4th of December. On the 12th of December the mail steamer arrived from England, bringing a Commander and his servant, to join a vessel on the Coast. Both went on board the *Isis* on the following day. On the 15th of December the servant was taken ill, and died, with all the symptoms of yellow fever, on the 21st; and on the same day the Commander also died, he having been seized with fever on the 18th. The last two cases that occurred in the *Isis* were in the persons of two officers who had joined, from the *Bristol*, on the 26th of December. One was taken ill on the 29th of December, and died on the 1st of January 1860; the other was seized on the 2nd of January, and died on the 7th. Positive instructions were now issued that no fresh arrivals from England, nor supernumeraries of any kind, were to be permitted to go on board the *Isis*, and all communication between that vessel and the squadron ceased.

GUN
VESSELS.

Six of the gun vessels exceeded the average sick-rate of the station. In some this arose from their complements being reduced in correcting for time, while in others, such as the *Lee* and the *Torch*, the cases placed on the sick-list were for the most part of a trivial character.

The same observations apply to the other vessels noted in the preceding list.

 INVALIDING.

Average Ratio of Invaliding for Ten Years, 51.6 per 1,000.

The total number invalided during the period of this report was 141, which is in the ratio of 96.9 per 1000 of mean force, being, as will be perceived, nearly double the average ratio of the station. The largest number invalided from any one ship was from the Bristol, from which thirty-six men were discharged in this way during the short period she was on the Coast. Nearly one-third of these were suffering from sequelæ of fever or from an impaired condition of the system, depending on climatic influences. Twenty men appear as invalided from the Meander, but the majority of these were supernumeraries, borne on her books for service either at Ascension or in any vacancies that might occur in the squadron.

Of the total number invalided fifty-two were for the sequelæ of fever, or for climatic cachexia; seven for diseases of the brain and nervous system; eighteen for diseases of the organs of respiration; eleven for functional or organic diseases of the heart and bloodvessels; five for diseases of the alimentary canal; five for diseases of the liver; nine for various affections of the genito-urinary system, mostly of syphilitic origin; ten for rheumatism and diseases of the special senses; nine for diseases of the skin and cellular tissue; and thirteen for wounds and injuries of various kinds.

 DEATHS.

Average Ratio of Mortality for Ten Years, 29.3 per 1,000.

There were eighty-four deaths in the squadron during the twelve months, which is in the ratio of 57.7 per 1,000 of mean force, being nearly double the average death-rate of the station, more than double the death-rate of the preceding twelve months, and the highest ratio that has occurred within a period of ten years. This large rate of mortality is entirely owing to the epidemics of yellow fever in the Bristol, Archer, Rattle-

West Coast
of Africa
Station.

snake, and Isis. Deducting the deaths in these vessels from that cause, the death-rate of the station during the period would only be 19.9 per 1,000.

Of the eighty-four deaths, sixty-five were from fever, of which fifty-five were cases of yellow fever, occurring in the above-mentioned vessels; one from apoplexy; two from inflammatory diseases of the chest; one from phthisis; one from disease of the heart; two from dysentery; one from inflammation of the bowels; one from acute rheumatism; one from pyæmia; and nine from wounds and injuries of various kinds, as detailed in Table IV. of the Appendix.