

that career of civilization, in which the rapid progress of his most redoubtable neighbours, contrasted with his own backwardness, has brought so grievous calamities on his empire.

To conclude by reverting to the schools, the establishment, though very imperfect, deserves our warmest commendation, since, co-operating with its contemporary in Egypt, it must effect a beneficial change on the Turkish state of medicine. The latter possesses the superior advantages of numerous well-informed instructors, of hospital practice, necroscopic inspections and demonstrations; but must yield to the former in the intelligence, application and capabilities of the students, which qualities, if rightly encouraged, would expand themselves to the honour of the teachers and founders of the school. The experience of its success has convinced the most sceptical of its expediency; and although its immediate confinement to the army be too limited, and its course of instruction hitherto too contracted to afford a speedy marked result, yet its very existence, and the satisfaction given by the pupils, encourage the hope that, under the enlightened care of the Hakim Bashi, a useful system of medical instruction will be established, and diffuse its benefits over countries in which ignorance, superstition, and empiricism have hitherto exercised an unlimited sway.

CONSTANTINOPLE, *June 1830.*

ART. II.—*Brief Sketch of the Fever which prevailed at Gibraltar in the Autumn of 1828; together with Observations on the Answers of Sir William Pym to Queries from the Royal Medico-Chirurgical Society of Cadiz, addressed to him on the origin and nature of that Disease.* By T. SMITH, M. D. Surgeon, 23d Regiment, or Royal Welsh Fusileers.

PASSING through Cadiz a few months ago, I met with a series of questions proposed by the Royal Medico-Chirurgical Society of that city to Sir William Pym, superintendant-general of quarantine in Great Britain, together with his answers relative to the epidemic yellow fever which raged in this garrison in the autumn of 1828; and, although I have hitherto taken no active part in the discussions on this subject, I have now determined to offer a few remarks on the statements made by Sir William Pym, as it appears to me many of them are founded in error; and may mislead, not only our neighbours the Spaniards, but the public in general, on the origin and nature of this malignant disease.

It will be recollected Sir William Pym follows Dr Chisholm and Sir Gilbert Blane, in believing that there is a form of yellow fever *sui*

generis; different from that which ordinarily appears in the West Indies and North America, in being highly contagious,—affecting the same individual but once, like small pox or measles,—and never appearing in Europe, except when imported;—and from its having been originally imported, as Sir William Pym maintains, from Bulam, on the coast of Africa—he calls it the Bulam fever.

How far this opinion regarding the Bulam fever may be correct, I am not prepared to say. All I shall attempt at present will be to show that the facts connected with the history of our late epidemic do not warrant Sir William's deductions.

Before entering on the consideration of Sir William's answers, I shall give a brief sketch of the rise and progress of this fever.

The first account we have of malignant or yellow fever having visited Gibraltar is in 1804, when it carried off nearly 6000 of the army and inhabitants. It had visited Cadiz and the other neighbouring towns several times before this period; and the circumstance of its only appearing in these places periodically, engendered a belief that it arose from some foreign source, and was analogous with that disease which was contended by Dr Chisholm to have been imported into the West Indies from the coast of Africa in the year 1793. This was also the most generally received opinion in Gibraltar; and in 1804, 1810, 1813, 1814, and 1828, when the fever appeared here, it was attempted, by the supporters of this doctrine, to connect its origin with the arrival of vessels from the West Indies or North America; or, if this failed, to endeavour to trace a communication between the garrison and Cadiz, Malaga, Carthage, or other towns in the neighbourhood, where the same disease was prevailing at the time. The circumstance, however, of not being always able to do this, as in 1814, when it could be traced to no foreign source, led many people to doubt, and ultimately to deny, the accuracy of this doctrine; and, at the breaking out of the late epidemic, many advocated the local origin of the disease and its non-contagious properties. To this conclusion they came, chiefly from the following reasons; namely, that, in former epidemics, the disease had never been satisfactorily traced to a foreign source, nor had its progress been marked by any of the ordinary laws of contagion; that it had always appeared about the same season of the year among the lower orders, particularly where the population was dense, the houses badly ventilated, and where due attention to personal and domestic cleanliness had been wanting, &c. &c.; and that it was not contagious, they inferred from its never having been carried from one locality to another by persons or other means; from its not having spread either at Europa Flats, the Neutral-Ground, Wind-Mill Hill, or in the Bay, amongst the shipping, although free communication between the town and these places were permitted; and, lastly, from similar facts having been repeatedly observed in other countries, where yellow fever appears epidemically.

Public attention was first called to the existence of a disease of a suspicious character, by an official letter from Dr Hennen, of the 29th August, to the Lieutenant-Governor, in which he

states, that five cases had been reported to him occurring in No. 24 District, one of the most crowded and filthy in the town, at the back of Hargrave's Parade. The Doctor designates these, cases of the "Bilious Autumnal Remittent Fever;" but states, that some of them had assumed all the appearances of yellow fever, and that one had proved fatal the day before; that the family of a Mr Martin in the same district (four in number,) had been attacked with a similar disease; and that the servant maid of this family had died on the 23th, after five days illness. On the 31st, two other cases were reported in the same district in children; one in Victualling-office Lane, and a death in the Civil Hospital; and on the 2d September, Dr Hennen reported to the Lieutenant-Governor, that a coachman of a Mr Duguid died on the 1st of the month of fever in 24 District; that one boy, and one girl, from the same district had been admitted into the Civil Hospital, in addition to three other cases reported to him,—one by the inspector of the district,—another, the servant of Mr Hasson of the Civil Prison, by Mr Fraser,—and the third by the medical officer in charge of the district. And, following Dr Hennen in his official account of the progress of the fever to Sir George Don, we find that two deaths occurred on the 2d in 24 District; one a young Jewess, under charge of a civil practitioner, and among those first reported on the 29th ultimo; and another man that was taken ill in a miserable hovel, with a sheet-iron roof. Six fresh cases were at the same time reported; five in 24 District, and one in George's Lane, and three of the five occurred in the house in which Mr Duguid's coachman died; "and it is not a little remarkable," says Dr Hennen in the same letter, "that no fewer than nine cases have, within these ten days, occurred in this very house. Should any more occur, I am strongly disposed to submit to your Excellency, whether it may not be a proper measure to order it to be evacuated until it has undergone a proper purification." On the 4th of September, Dr Hennen wrote to the army medical board, that twenty-eight cases had occurred in all, and five deaths; and on the fifth he reported its appearance among the military to the Lieutenant-Governor, and says, "that so many cases of a fever of a very serious nature have appeared in the barracks of the Sappers and Miners on Hargrave's Parade, which I would observe to your Excellency is in the line of the drains coming from District No. 24, that I feel myself called upon to submit the propriety of immediately encamping that corps, and totally evacuating the barracks." One case occurred in the 12th Regiment on the 2d of September, and the man died on the 5th. The barracks of this corps are situated upon a line of drains, one of which burst in the centre of the buildings, and emitted most offensive smells during the summer months. It may be remarked, however, that this man was in the habit of visiting a female friend in 24 District, and must thus have been exposed to any insalubrious local influence. It would be needless to follow the progress of the fever farther to individual cases.

With regard to the locality of the district, No. 24, in which so many cases of this fatal malady first appeared, as it were simultaneously, Dr Hennen makes the following observations in his letters of the 29th August to the Lieutenant-Governor, which have been published by Mr Fraser in the *Medico-Chirurgical Review*, No. 26, 1830. "The whole of these cases," says he, "as I am informed by Mr Wilson of the Civil Hospital, are in the line of a drain which comes from Mr Martin's house; and within a few yards of the doors of the tenements where the individuals have been taken ill, there is a large open grating, from which very offensive vapours are said to arise; and Mr Wilson states to me, it is hardly possible to be otherwise, as no fewer than four privies empty their contents into the drain." Again, in a letter of the same date, "after a most minute personal inspection of the whole neighbourhood," Dr Hennen states, "in reference to my letter of this day's date, I have minutely inspected district, No. 24, in company with Mr Wilson of the Civil Hospital, Mr Woods, the medical officer attached to that district, and other staff-officers, and it is with much regret I have to state to your Excellency, that in almost every step I took in that district, I had reason for surprise, not that fever had broken out there, but that it had not extended farther; from whatever causes it may have proceeded, the pauper population is dense to a degree incredible, except to those who have seen it. In sheds without ventilation, without drainage, and generally composed of the slightest materials; in tiers of beds as close as in a crowded transport, numerous individuals sleep; they go out to their work at an early hour, and return at gun-fire, locking up their miserable places of nocturnal shelter during the day, and leaving them saturated with the steams of their bedding, their food, and the overflowing receptacles of their ordure."—"The detail," he adds "would be too disgusting to enter into; but I most respectfully submit to your Excellency the indispensable necessity of sweeping away the whole of these sheds, which I have every reason to suppose are unauthorized by the government." Dr Hennen caused the following notice to be inserted in the *Gibraltar Chronicle* at the breaking out of the epidemic.

"NOTICE.—It having been ascertained that several of the drains in private houses are choaked up, and are left uncovered, and in consequence emit vapours highly prejudicial to the health of the inhabitants, it is recommended that no time be lost in putting the drains in order, and procuring covers, which should be kept constantly on with a proper weight over them. Close covers should also be placed over all the privies, and a mixture of quicklime, charcoal dust, and water, should be poured into them, at least once a-day, and the utmost attention to cleanliness, and the frequent use of lime, especially in ground floors, and ill ventilated apartments, are most particularly enjoined. * * *

The inspectors of districts should be specially

charged with the execution of this order.”—See Gibraltar Chronicle, 7th September 1828.

In fact, the whole of Dr Hennen’s prophylactic measures were founded on the belief of the local origin of the fever. Drains by his order were opened, cleaned and washed; filth and nuisance of every kind removed; houses ventilated, white-washed, and other-ways purified; the population as much as possible thinned. The troops were encamped; the inhabitants were removed from No. 24 District; and a commission was appointed by his Excellency the Lieutenant-Governor, at Dr Hennen’s suggestion, to inspect the different districts of the town. The proceedings of this commission corroborate the Doctor in this view of the question, as may be seen from the following correspondence.

“ SIR,

Gibraltar, 1st September 1828.

We have the honour to report for your Excellency’s information, that we this day inspected 24 district, and several districts adjoining, in execution of your Excellency’s communication to us on the 30th August, and we have found that the understated sheds have been erected without the consent of government, and are decidedly inimical to the health of any persons who may inhabit them, viz. 1st, Wilson’s Buildings, on the road to Flat Bastion, two wooden sheds,—2dly, Morella’s Buildings, one wooden shed,—3dly, Mr Haire’s house, two wooden sheds, in which two very serious cases of fever occurred,—4th, Benzurbra’s Passage, one tenement.

“ In addition to these sheds, which we recommend to be immediately razed to the ground, we beg to call your Excellency’s attention to the following tenements, which we found in a state that we conceive unfit for the habitation of man, without undergoing several alterations, viz. Falacher’s house, Victualling-office Lane, Benzaqueen’s house, in South Port Street, and Benzurbra’s, behind the Town Range Barracks. (Signed) JOHN DUFFIELD, Chairman; J. HENNEN, M. D.; HUGH FRASER, Surgeon; ANTHY. TERRY; A. CAMPBELL, Town Adjt.

“ To His Excellency General Sir GEORGE DON, &c. &c. &c.

“ SIR,

Gibraltar, 2d September 1828.

“ We have the honour to report to your Excellency, that, in pursuance of your orders, we this day proceeded to a farther inspection, extending from the vicinity of No. 24 district to the Moorish Castle, and we have to report the following buildings, which have been erected without permission of government, and which we conceive it indispensable to the public health should be as early as convenient razed to the ground.

“ DISTRICT, No. 25.—Eveleigh’s ground,—Two sheds covered with tarpauling; near Arengo’s Gully, two sheds additional,—Eveleigh’s buildings, one shed in the yard.—Oliveras’ grounds, six sheds.—Cavallero’s platform, one wooden shed.—Minchen’s house, four out-buildings.—Mr Bracbridge’s stable-yard, one shed.

“ In addition to these sheds which we recommend to be destroyed, there are three other sheds, and an old wall in Cavallero's and Arengo's buildings, which we conceive ought to be new modelled.

“ In the course of our inspection, we were struck at every step we took with the density of the population ; and although this is an evil which demands prompt and rigorous measures for removal, it was gratifying to us to see that in every inhabited house the occupants appeared to be actively employed in cleansing and lime-washing,—a measure which we would most strongly recommend to your Excellency to enforce by a police regulation.

“ We observed several tenements belonging to the crown empty, and we would beg leave to suggest to your Excellency that, as by the rasure of some of the sheds mentioned in the first part of this letter, a few individuals will be left entirely without shelter, they may be permitted to reside in the crown houses. The rest of these houses should be completely secured from encroachment, as we found one of them broken open, and in a state of the most disgusting filth.

“ Among the persons who will be deprived of shelter by the rasure of these sheds, are two soldiers' wives, recently arrived in this garrison on their route to Corfu. We are induced to notice these individuals the more particularly, as it affords us the opportunity of recommending that all persons of this description should, with as much speed as possible, be removed from the garrison.

“ We have, in the course of our inspection, had constant reference to the plans deposited at the crown land-office, every encroachment upon which, will, we trust, be removed ; but we cannot help recommending to your Excellency to give directions that the opening of all drains, cess-pools, and privies, be accurately covered up, so as to prevent the emanation of all vapours from them, and to remain so covered, except when opened to admit of their being cleansed, and for ordinary purposes.

“ In the course of our inspection this day, we found no case of disease in the houses ; and we beg leave to supply an omission we made in our report of yesterday, by stating that we detected one case of fever in a girl in district 24, whom we ordered into hospital immediately. She is now doing well.—We have the honour, &c. &c. &c. (Signed) JOHN DUFFIELD, Chairman ; J. HENNEN, M. D. ; H. FRASER, Surgeon ; A. TERRY.

“ *His Excellency, General Sir GEO. DON, &c. &c.*”

I now return to the progress of the fever amongst the military ; together with its origin in the south, and Catalan Bay. I have already stated that the Sappers and Miners became early victims, and also a sergeant of the Twelfth Regiment, and that the barracks of both these corps were situated upon a line of drains leading from the district infected. They were encamped on the 5th September ; and the same day the Spaniards encompassed the place by a cordon. On the 3d, the Governor of Algeiras sent over a depu-

tation of medical officers to inquire into the nature of the fever. It is remarkable that these gentlemen did not carry the disease into Spain. They visited every case in the garrison, and could not fail to have had their clothes saturated with the contagious principle, or themselves contaminated, had any contagious properties existed. The Sappers were at first encamped at Poco-Roco-Cave, and the Twelfth on the Neutral Ground. The Sappers were soon removed from Poco-Roco, as the fever continued to prevail among them, this place being within the circle of epidemic influence; but in the Twelfth not a case appeared after they were encamped (except amongst the orderlies and servants, who remained in town,) until the 23d September, when the regiment commenced again night duties in town, from which it had been relieved on going into camp, and then the fever became general in the corps. Mr Amiel, surgeon of the regiment, states that, out of ninety-two women, and one hundred and ninety children, who were never allowed to pass Bay Side, (the entrance into the garrison,) not one had the fever, though several of them slept in the same beds with their husbands labouring under the epidemic, and continued to use the same bedding.

The first fatal case in the 23d Regiment, which was quartered in Rosea barracks, occurred on the 16th of September. The man was admitted on the 13th from town. He had been employed as a blacksmith in the commissariat yard, where the mortality was afterwards very great. This yard is situated between the barracks of the 12th Regiment and the Sappers and Miners, on the line of drains from 24th district.

The regiment was encamped at Europa Flats on the 17th, and the first cases after this are two non-commissioned officers, one on the 24th, the other on the 30th—both had been employed at the convent in town. After this the disease became more general; but was confined exclusively to those whose business led them to town. I am not aware of a single case occurring in the 23d Regiment where the man had never left camp; and the immunity enjoyed by the women and children of the corps was universal. One man is stated by the commanding officer of the regiment, in his evidence before the board of commission,* to have been attacked without

* To enable the reader to understand the nature of the different commissions alluded to in this paper, namely, the "Board of Commission," and the "Anglo-French Commission," it is necessary to observe, that the colonial secretary (General Sir George Murray) caused to be instituted a Board to investigate into the origin of the epidemic fever, to be composed of the following members, and to be designated the "Board of Commissioners."

President, His Excellency, General Sir GEORGE DON.

MEMBERS.

Colonel CHAPMAN, Civil Secretary.

Judge HOWELL.

W. SWEETLAND, Esq. Captain of the Port.

Lieut.-Col. FALLA, Town Major.

Drs PYM and BROADFOOT.

Sir George Don delegated the duty of president to Sir William Pym, who appointed Dr Barry to be the secretary.

his ever leaving camp, but it was not fever with which he was admitted into hospital, but dysentery.

At the time the first cases of fever were admitted into hospital, there were men with other diseases in the same wards, and I never observed any mischief to result, although no precautionary measures were adopted. For example, from the 7th September, when the fever was declared to be in the garrison, to the 15th of October, a period of five weeks, thirty-six cases of other diseases were received promiscuously into the hospital with the fever patients, and out of these only eleven were attacked with the disease. One man was seventy-five days before he was attacked; and another with a fractured leg, although thirty-four days in hospital, never caught the disease. The hospital servants escaped also until the disease had become general in the district where the hospital is situated; and, up to the time of Dr Hennen's death, on the 3d November, there was no prohibition to a free communication between the hospitals and the camp. The convalescents were discharged directly to their regiments without their *kits* or wearing apparel being submitted to any process of purification; and I myself had daily communication with the camp. The officers also, who confined themselves to the camp, escaped; although some of them accompanied their sick companions to hospital, rendering them every kind office, and sitting with them in the same waggon which conveyed them to hospital. The other regiments, 42d, 43d, 73d, and 94th, were attacked much about the same time, and were severally encamped, the first two on the Neutral Ground; the 73d, and 94th, on Europa Flats, and Wind-Mill Hill.

In the Civil Hospital, such was the pressure for admission into that institution, as to render it necessary to relieve the wards the moment a patient passed the *acme* of disease; accordingly, convalescents were discharged in all stages, many of them having blood exuding from their gums; and to some very poor people the soiled blankets under which they had passed the disease were given to them. The majority of these people went to the neutral ground, where they recovered rapidly, and where they slept with their families as usual, and mixing with whom they pleased. Where, then, existed the bugbear contagion?

It was observed that the cases at the beginning of the epidemic were more severe, as well as more numerous, in the 43d than in the other corps, and this was attributed to the nature of the duties of that regiment. Particular stations, as North and South Flat Bastions, South Port, and the convent guards, were found to give rise to more concentrated forms of the fever

At the breaking out of the epidemic, the French government appointed three physicians to proceed to Gibraltar to inquire into the causes of the disease, namely, Drs Chervin, Louis, and Troussseau. On the arrival of these gentlemen, Dr Barry and Mr Peter Wilson of the Civil Hospital were associated with them, for the purpose of forming a board to be denominated the "Anglo-French Commission."

than others; and the soldiers were attacked in greater number on these than on the other guards; and it is worthy of remark, that, with one exception, these posts were on the line, or immediate vicinity of the drains leading from 24th district.

The *line wall*, skirting the sea-beach, was also discovered to be a very mortal station. Few sentries planted there, if any, escaped an attack; and Colonel Payne, commanding the artillery, who remained in the town from the commencement of the fever until his death in the month of December, lost his life by visiting this locality at night. The known unhealthiness of this station caused many of the sentries to be withdrawn from it at night, and the consequence was, some depredations were committed on the great guns, and the Colonel, in his zeal to detect the offenders, perambulated this district for three successive nights, and on the third was suddenly attacked, and expired on the fourth day of his illness.

The fact already noticed of persons enjoying immunity who strictly confined themselves to the different camps, as well as that of the disease never spreading in these places, were confirmed by daily observation, in all the regiments in the garrison.

The period of the first appearance of the fever in the south is involved in some doubt; but it is certain it did not become general there for nearly a month after it had been prevalent in the town, and which could not have happened had the disease been contagious, as there was a constant communication between these two places. The Naval Hospital is situated in this district, and the repeated intercourse necessarily kept up between the servants of that establishment and the neighbourhood could not fail to show its bad effects on the health of the inhabitants earlier, had contagion existed. The first case which occurred was in Danniør's Buildings, on the 31st August, in a woman of the name of Domine, who went to town on that day to visit a sick friend, and suckled the child of that friend, Bernarda Riva, who lived in Caille Comedia, and on returning home in the evening was taken ill when passing South Port Gate, the original focus of the malady, and for three or four days laboured under a very severe attack of fever; yet no one else in the same building was taken ill till nearly a month afterwards, when the disease had become general, and after twenty-six individuals had died in the same or adjoining houses to the place where this poor woman lived. The next case was a young lad of the name of Acres, whose mother lived near the bridge leading to the Naval Hospital, in a small confined wooden shed, close to a gully, through which runs a drain, and which emitted very offensive vapours during the summer. This lad had been living for some time before he was taken ill in No. 24 district, and was three or four days in his mother's house before he was sent to the Civil Hospital on the 5th September. His mother had had the fever during a former epidemic, but a sister who lived in the same house, and slept close to her brother in the same room, was not taken ill before the 22d of the month, when

she was sent to the Civil Hospital, and died on the 28th. Two daughters of a Widow Moir, in the same neighbourhood, were taken ill, one of whom died. From this period the disease became general in the district.

I shall now advert to the origin and progress of the distemper in Catalan Bay, a small fishing village situated on the eastern side of the Rock. The first person attacked was a poor old man, named Andrea Andre, who dwelt in a large cave or excavation of the Rock, directly in rear of the clump of buildings where the quarter of the officer commanding the detachment is situated. This individual possessed a donkey, and earned his livelihood by carrying water from the wells on the Neutral Ground into the town, so that he was in the daily habit of entering the garrison, and returning every evening to the Bay. On Friday the 19th September, he was reported to Captain Jenkins, the officer in charge, to be ill with fever, and was in consequence sent to the Lazaretto the following morning, where he died on Monday the 26th. The second person taken ill was the servant of Captain Jenkins, a private soldier of the 12th Regiment, named Daniel M'Curry. He was attacked on Monday the 22d September, and sent to the Military Hospital on the 24th, where he recovered. Upon M'Curry's being sent to Hospital, Captain Jenkins took into his service another soldier of the detachment named Farrell, who sickened on Thursday the 25th September. This man slept in barracks, and was the first of the detachment who fell ill. From this date (25th September) until the Saturday following (27th September) a sergeant and three or four men were attacked and sent into the Military Hospital.

In the civil population, the first case that took place after the sickening of Andre on the 19th September, was a girl twelve years of age, named Margaret Martin, who resided in Captain Jenkins's house. This girl was servant-maid to a lady who had come from town on a visit to Mrs Jenkins. She had left the garrison on the 6th or 7th September, and was attacked with the epidemic on the 27th, and immediately removed into the Civil Hospital, where she recovered. The second case was a little boy, who resided next door to Captain Jenkins. He was taken ill about the 25th September. The third occurred in the son of Ferecono Beso, next door neighbour to Andre; and the family of Domingo Colias, who dwelt close to the house of this man, fell ill on the 4th of October. After this it is difficult to trace, with precision, individual cases; for several families sickened about this period, who acknowledged before the Anglo-French Commission, that they had passed the disease in their own houses without its being known, fearing they might be sent to the Lazaretto. Captain Jenkins, in his examination before the Board of Commission, states, "that twenty-one civilians in all were sent out of the village into the Lazaretto and Camp of Observation, at the order of the attending physician, and out of which ten died."

The number of families who concealed their illness, so far as I

have been able to ascertain, amounts to five; and, as they all had children, twenty persons may have passed the disease in their own houses;—it is remarkable that not one of these died. Including the military, therefore, the disease attacked in this small village about fifty persons, of which ten civilians died and one soldier. Captain Jenkins states the population to have consisted at the time of 576 civilians, men, women, and children, and from fourteen to twenty soldiers; but I have heard persons of great local information say, that the number of civilians is underrated.

“It has been stated that the disease was introduced into the Bay by Andrea Andre, who, it is asserted, infected Daniel M’Curry. The latter, in his examination before the Board of Commission, states, “That, on Friday the 19th September, when Andre returned to the Bay, he had a bundle on the top of his kegs on the Borrico. I (M’Curry) was passing towards Captain Jenkins, when Andrea asked me to assist him to take off the bundle; I did so, and passed on to my master’s quarters. I could not tell that the bundle was filled with clothes, but it appeared to contain linen.”

On being asked by the Board if he had any other communication with Andrea, he replied, “That he had two shirts washing by Andrea’s wife, which he went to fetch; that this was some days before he helped Andrea off with the bundle, and that Andrea had no appearance of being sick at that time.” Such is the sum and substance on which the opinion of the introduction of the fever into this village is founded. Had Andrea laboured under the true eastern plague, the communication which took place between these two individuals was hardly sufficient to have affected M’Curry; but the truth is, we must look for some other cause to account for M’Curry’s fever, as Andrea was not capable of infecting the inmates of his own family, with whom he must have had close communication, his wife being alone attacked out of seven persons; and that the nature of the locality was the chief, if not the sole agent in propagating the disease, I think, will not be denied, when it is recollected the fever was confined to this part of the village, which was in a very filthy state.

After this brief enumeration of the leading facts illustrative of the origin and progress of our late epidemic fever, I ought perhaps to say something of the symptoms by which it was characterized, as well as of the different modes of treatment; but as I shall have occasion to notice these when commenting on the answers, I shall for the present defer this part of the subject; suffice it to remark, that this truly formidable disease was acknowledged by all parties to be identical with the black vomit fever of the West Indies and North America, and of the same nature with that which had at former periods depopulated this garrison.

Of the causes of the malady, I am unable to speak with any degree of certainty. That it was not imported, I think every candid man will admit who has deliberately weighed the evidence

given on the subject before the Board of Commission, and the facts I have, and shall hereafter state; and were it not that my friends, Messrs Fraser and Wilson, have already so fully discussed these topics, I should have been induced to enter more at length into the question here. In fact, every endeavour to establish the importation doctrine has failed; and both the Colonial secretary, Sir George Murray, and Sir James M'Grigor, director-general of the army medical department, I have heard, are convinced there is not the slightest grounds for such a belief; but, on the contrary, that there is every reason to suppose the disease owed its origin to causes within the walls of the garrison.

What those causes are is not easily determined. By some the disease was referred to a vitiated atmosphere, a dense population, close and ill-ventilated apartments; a bad state of the drains, exhalations from the privies, &c.; while others were of opinion, that it owed its origin to the soil, or to emanations resulting from the decomposition of animal and vegetable matter, either singly or combined; but how far either the one or the other of these are correct I shall advance no opinion. It was evident, however, there was a febrilizing influence present in our atmosphere the whole of the year 1828, as was manifest from its effects, for scarcely a month passed without cases of sporadic yellow fever occurring. As early as the 11th of January, a Jew, named Kian Bensimol, was admitted into the Civil Hospital, with well-marked symptoms of this disease, and died on the fifth day, vomiting great quantities of black matter. On the 13th of March, Solomon Anachony, a Jew also, was attacked with great severity, but recovered; and much about the same time, Mr Haden of the commissariat department fell a victim to the disease. On the 14th July, the orderly at the Civil Hospital had a smart attack, accompanied with yellow skin, although he had had fever during the epidemic in 1813; and on the 16th of the same month, another Jew, named Maclief Bennues, was admitted into the Civil Hospital, and expired on the eleventh day, with yellow skin, and vomiting of matter of the colour of coffee grounds. Besides these admissions into hospital, other cases occurred in the garrison. Abraham Bensimon, for example, died with "black vomit" in Irish Town, on the 3d May, after a few days illness; and on the 3d or 4th of August, Maria Pescadina, servant to Mr Fraser, was attacked, recovered partially from this attack, and relapsed on the 27th of the same month. Mr Hasson, keeper of the Civil Prison, was severely attacked on the 15th of this month, and his servant on the 17th; and at an early period of the season febrile attacks were so numerous in the 23d Fusileers, as to call the attention both of the commanding officer and myself to the subject; and an official communication was made, referring the cause of our unusual sickness to the bad state of two drains, which were in the immediate vicinity of the barracks, which were choked up with a large quantity of soil accumulated at their mouths, emitting very offensive effluvia. There was nothing, however, remarkable, or any physical change appreciable by our

senses in the season of 1828 from that of former years. The summer was cool. There was a prevalence of westerly winds; but bad smells were complained of by old residents, some of whom predicted a sickly season from this circumstance alone; and I may here mention, that on cleaning out some of the drains, cart-loads of dead rats were found; and there was said to be an unusual accumulation of soil in the public privies, which I have heard had not been cleaned out for six years.

I shall now proceed to the consideration of the questions alluded to at page 12. A literal translation of them has not been attempted, but the sense has been invariably adhered to.

Translation of interrogatories from the Royal Medico-Chirurgical Academy of Cadiz, relative to the fever prevailing in Gibraltar, addressed to Sir William Pym, superintendant-general of quarantine of the United Kingdom of Great Britain, together with his answers.

Ques. 1.—What has been the origin of the fever which prevailed in Gibraltar? Has it developed itself spontaneously, or has it been imported? If the first, show or point out as far as possible the local and atmospheric causes which have generated it; and if the second, that is to say, if it has been imported, say by what vessel, from whence she came, what was her cargo, what length of passage, and what occurred remarkable during the voyage, what day she arrived in Gibraltar, how many days of quarantine; and lastly, if the persons, clothes, or other effects which came by her, had communication or contact with the first individual in the town; or with their families?

Ques. 2.—If it be not possible to answer the second part of the preceding question, say if, in the last summer previous to the appearance of the first cases of the prevailing fever in Gibraltar, any vessels had arrived in that port coming from the West India islands, or United States, which during their voyage have had any sick or deaths; of what diseases, what were their bills of health, and if, in consequence, they were put in quarantine, or sent to a lazaretto for the purpose of being disinfected?

Ans. 1 and 2.—There is not the most remote reason for supposing that the epidemic of Gibraltar originated from local causes. Without doubt it was introduced. A great number of vessels arrived from Havannah, St Domingo, and New Orleans; and the vessel which has justly been suspected of having introduced the disease, is the Swedish ship named Dygden, which arrived in this bay from Havannah on the 27th of June, of whose crew nine were attacked during the voyage, and two of them died. Her cargo consisted of sugar and logwood. The passage was forty-seven days. She was forty days in quarantine after her arrival. She was admitted to Pratique on the 6th of August, but the cargo had been removed twenty days before.

On the 10th August a boatman with his son, daughter, and a

boy belonging to the boat, went on board a vessel in this bay, the name of which is unknown, because the father, son, and daughter, are dead. The son, a youth of 13, was attacked with the fever on the 11th August, the next day after being on board, and died on the 17th; his sister sickened on the 17th, and died on the 21st. The boy belonging to the boat was also taken ill on the 17th, and sent to the Civil Hospital on the 21st, and recovered.

The father died on the 7th September, his family was the first that suffered from the disease in Gibraltar.

From this time to the 2d September, it spread through 24 District, where this family resided. Then a nurse in the Civil Hospital, attending a patient from 24 District, fell sick, and at the same time a maid-servant of the surgeon of the Hospital, who resided in that establishment, was attacked with the disease.

OBSERVATION.—Here we have two questions embracing points of the greatest importance in the origin and nature of our Gibraltar yellow fever, and we have seen the manner in which Sir W. Pym has answered them. The opinions he has advanced I shall endeavour to show are at variance with facts. “There is not,” says he, “the most remote reason for supposing that the epidemic of Gibraltar originated in local causes. Without doubt it was introduced.” How Sir William Pym arrives at this conclusion I know not. This statement is contradicted by the history of the fever itself, by the history of former epidemics, the proceedings of the Board of Commission, the correspondence of Dr Hennen, and by the observation and experience of almost every unbiassed man in Gibraltar;—in short, it is an assertion perfectly gratuitous, and originating merely in the desire of the author to support a favourite hypothesis. The only plausible ground on which Sir William Pym rests his assertion of introduction is the Swedish ship *Dygden*, which has “justly been suspected,” says he, “of having introduced the disease.” This suspicion, however, is confined to Sir William Pym, and those who adopt his views; and to the opinion of these gentlemen I may justly oppose those of Judge Howell, Colonel Chapman, and Mr Sweetland. The first, who had no preconceived opinions to support, expresses himself in the following terms: “Upon a careful review of the proceedings before the Board, I am of opinion, that the evidence brought forward has totally failed to prove that the late epidemic disease was introduced from any foreign source, either by the Swedish ship *Dygden*, or by any other means; and I am farther of opinion that the late epidemic had its origin in Gibraltar.” Colonel Chapman, civil secretary in this garrison, is equally decided. “Judging from the evidence produced before this Board, the manner in which it has been given, together with the description of persons who have been brought forward as witnesses, I am decidedly of opinion, that the attempt to prove the introduction

of the disease, after months of previous inquiry by those who wish to prove it, have wholly failed."

The neutral opinion of Mr Sweetland, captain of the port, deserves attention also, as he, who was for many years known to have been a strenuous advocate of importation and contagion, has been candid enough to confess that he took his seat at the Board of Commission strongly prepossessed with the doctrines of contagion, and his belief in which he has now partly, if not wholly, abandoned. His opinion is as follows: "After the most attentive consideration of the evidence which has been brought forward, I have discovered nothing which has carried conviction to my mind as to the cause or origin of the late epidemic fever. On the one hand, it has not been shown that any of the causes stated in support of the doctrine of its being of domestic origin, existed in a higher degree in the year 1828 than in many preceding years, when the garrison was free from that disease; and on the other hand, no vessels have arrived during the last summer having the yellow fever on board, nor has that disease discovered itself among any of the shipping in the port. In the absence, therefore, of any proof on either side, I must decline hazarding an opinion on a subject which has hitherto baffled the researches of the most learned physicians of all countries.

Dr Hennen does not attach the least importance to the arrival of this ship. His letter to the Lieutenant Governor of the 2d August on this subject, is as follows:

"757.

2d August 1828.

"SIR,—I have the honour to acknowledge the receipt of your Excellency's letter of the 1st August and its enclosures, (herewith returned,) relative to the Swedish ship *Dygden*, and I beg to inform you that I have already minutely inspected the captain and crew, whom I found in perfect health, and I shall repeat my inspection before the expiration of their quarantine, on the 6th of the present month. In my letter of the 29th July, I mentioned, as the reason for putting this ship in quarantine for forty days, that two men died on the passage. It is now sixty-six clear days since the first man died, and sixty-one since the death of the last, and nothing like disease has since appeared, nor have I the most distant reason to apprehend danger to the public health from any circumstance connected with the *Dygden*.—(Signed)—J. HENNEN, M. D. Inspector of Hospitals."

The opinion of Sir William Pym given to the Board of Commission is couched in less positive terms than in this answer to the Cadiz Academy, for with all his predilection for importation, he is afraid, from the evidence before the Board, to fix it on any particular ship, but refers it to the shipping in general. His opinion is thus given: "From the very strong evidence before the Board, of the first persons attacked by the late epidemic fever having been connected with the shipping, I am of opinion that the disease was of foreign origin, and that neither local or atmospheric causes have had any

share in its production, Gibraltar being one of the most healthy spots in Europe, no soldiers of the garrison having died of fever during the months of August, September, or October of 1827; and only nineteen soldiers having died from fever in the course of the five years preceding the year 1828, during the sickly months of August, September, and October."

After this statement, it might be unnecessary to say any thing farther of this ship; but as on her hinges the only attempt at importation, I shall state all the facts which have come to my knowledge connected with her voyage and stay in this bay. I have already quoted Dr Hennen's letter on the subject, by which it appears that no less than sixty-one days had elapsed without any thing like disease occurring at the time the vessel got *Pratique*, and Mr Sweetland, the captain of the port, in his memorandum on the same subject, confirms this opinion, and infers that the disease of which the two men died was not yellow fever, as it did not extend itself to any other of the crew. We have, besides these two gentlemen, the declaration of the captain of the vessel, embracing all the particulars connected with the voyage and arrival of the ship; and as this document is important, it is subjoined.

TRANSLATION.

"SIR,—Having since my arrival here heard various reports, by which it is pretended that the yellow fever was introduced last year at Gibraltar by the ship *Dygden*, under my command, it being at the same time imputed to me that I had made false declarations; that it was after not having been admitted at Malaga that I proceeded to Gibraltar; that the clothes of the seamen who died were sold there and smuggled on shore, &c. &c. all which are injurious to my character, I have considered it as my duty to state to you shortly, and as far as my memory will allow, what occurred on board the said ship in the Havannah, and on the passage, in order to clear myself from unfounded suspicion and aspersion, being ready, if required, to corroborate the same by oath.

"During my stay in Havannah none of the crew brought there were ill so as to require to keep in bed. A part having deserted there, I was under the necessity of hiring in their place six other men of different nations, of whom one being taken ill on the same day he came on board, was in consequence sent back again on shore. I sailed from Havannah on the 12th of May, with a crew of fifteen men, all in good health. A few days after two of the Swedish part of the crew complained of severe headachs, and pain in their limbs, which increasing they had to go to bed. Through sudorifics and purging medicine they got well in eight days, so as to be able to attend their duties. During that time five others had been taken ill of the same complaint, but recovered in a few days under similar treatment. A lapse of ten or twelve days followed, during which the whole of the crew were in perfect health; but upon getting into a higher latitude, I met with gales and rain, when the greater part of the crew suffered much from wet, and imme-

diately after, those who had till then been well were taken ill, probably from cold produced by the weather, to which they had been exposed, yet the symptoms which appeared were the same as in the others. The youngest of them recovered in a short time, but the eldest two died, one after five, the other four days' illness, which took place on the 27th of May and 1st of June. The old clothes they had worn, together with hammocks and what was in them, was thrown into the sea with the bodies. Their best clothes, which I never once had seen them use during the voyage, were sold among the crew; but I cannot recollect that any of the articles were bought by any of the men paid off in Gibraltar; if so, they were at any rate very few, the greatest part of them being woollen clothes only suitable for the north. The sale was effected about three weeks previous to my arrival in Gibraltar, where I arrived on the 28th of June, without having communicated on the passage with any vessel, or touched at any port.

“ After having made a true declaration to the pratique master, the ship was adjudged a quarantine of forty days, at the expiration of three-fourths of which time two quarantine guards were put on board, by whom it was ordered, that all the clothes, hammocks, boxes, and sails of the ship were to be ventilated, which was done twice, and the ship twice fumigated with sulphur. After having obtained pratique, five of that part of the crew which were shipped in Havannah were paid off, being as follows, viz. James Barron, William Whitman, Alexander Kanedy, D. Sinclair, John Brinkmore, who took with them the few articles of clothes that belonged to them, which, however, were of so little value that I suppose that they could neither have been sold nor found to be worth the expence of washing; but about this I have no knowledge; but in regard to myself and the rest of the crew, no clothes were sold or sent on shore, nor were any given to be washed until the ship had obtained pratique at Cadiz. In lieu of the seamen paid off in Gibraltar six others of different nations were shipped, and having accompanied the vessel to this place, performed in her here a quarantine of thirteen days, after which they left the ship, being all perfectly well. The rest of the crew were sent home in the Russian ship Helsingfoes, the Dygden having been sold, and arrived all in good health.—Without any more whatever to add, I have the honour to be, Sir, your most obedient servant,

Cadiz, 4th June 1829.

(Signed) H. G. GERLE.

John Tarris, Esq.

Swedish and Norwegian Consul, Cadiz.”

The captain, it will be seen, states, that the whole of his crew were taken ill during the voyage, (and not nine, as Sir William Pym tells us,)—that he embarked six fresh sailors at the Havannah—that the old or Swedish part of his crew were the first taken ill,—and on arriving at Gibraltar, after he had got pratique, that he discharged these foreigners with what clothes or bedding they had at the time—that shortly after leaving the Havannah on the 12th May,

seven of a crew out of fifteen were seized with headachs and pains in the limbs, but by sudorifics and purgatives got well in a few days—that ten or twelve days after the rest of the crew sickened, but not till the ship had arrived in a higher latitude when the men were exposed to gales of wind and rain—and that the two oldest of them died. There is not a word, however, of fever, nor is there any alarm excited in the captain's mind of a dangerous or a contagious disease being on board. The men are only described by him to have had headachs and pains in the limbs, symptoms common to most febrile attacks; but yellow skin, black vomit, or any other symptoms characterizing a particular or formidable disease, are never once mentioned. Indeed this could not well have been the case, for if yellow fever had existed on board this ship, it must have arisen from causes existing within herself, as we have the health officers of the place asserting that no such disease was raging at the time she left the Havannah, and in consequence a clean bill of health, of which the following is a copy, was given :

TRANSLATION.

“ We, the members of the Board of Health, Dr Antonio Gaston y Navarette, Knight of the Royal Military Order St Hermenegildo, wearing the crosses of distinction of the marine and chilana, Captain of a frigate in the Royal Navy, and likewise of this port by his Majesty's nomination; Dr Ceriaco de Arango, deputed Chief Magistrate by the most excellent Senate; and Dr D. Lorenzo Hernandez, Physician, Honorary Consultor of the Royal Armies, and First Physician, President of the Royal Medical Senate of Physicians of this always most faithful city of St Christopher of the Havannah, and very loyal Island of Cuba,

“ Do hereby certify, That, by the grace of God our Lord, at the sailing from this port for that of Gibraltar, of the Swedish ship Dygden, Captain Gerle, this city and its neighbouring towns are free from all plague or contagious epidemic disease, as likewise the said captain, with the fifteen men of his crew, are in a perfect state of health, according to the muster by her roll, and in compliance with the last orders, we give the present bill of health; Habana, May 9th, 1828. (Signed) CIRIACO DE ARANGO; ANTONIO GASTON; DR LORENZO HERNANDEZ.”

But without this assurance of the healthy state of the Havannah at the time the Dygden left that port, it is not probable that the sickness on board was yellow fever, when it is recollected that eight of the men had been about three weeks from port, enjoying good health, and only taken ill when they arrived in a high latitude under a diminished temperature, and exposed to gales of wind and rain. Whoever has been off the Banks of Newfoundland (which this ship must have been at the time mentioned) will agree that it is not a favourable climate for fostering yellow fever. Sir William Pym does not furnish us with any of the data from which he infers the Dygden to be so justly suspected, but proceeds

to the next part of his story, and, with the same facility that he carries the disease across the Atlantic, introduces it into our garrison. On the 10th of August, says he, "a boatman, (named Fani,) his son, a daughter, and a boy belonging to the boat, went on board a vessel in the bay, the name of which is unknown, because the father, son, and daughter, are dead. The son, a youth of thirteen, was attacked with the fever on the 11th of August, the next day after being on board, and died on the 17th. His sister sickened on the 17th, and died on the 21st. The boy Caffiero, belonging to the boat, was also taken ill on the 17th, and sent to the Civil Hospital on the 21st, and recovered. The father died on the 7th September. This family was the first who suffered from the disease in Gibraltar."

Now there is something very curious in the whole of this story of the boatman and his family being the means of introducing the fever into the garrison, the truth of which rests solely on the evidence of Caffiero, who was only 12 or 13 years of age, and four or five washerwomen, persons who are seldom capable of distinguishing matters of fact from those of belief, and are never competent witnesses in questions involving both classes of circumstances. It is remarkable that the mother of this family, who is still alive, and more likely to have afforded correct information on the subject, should not have been more fully examined before the Board of Commission. She has, however, subsequently given a very explicit declaration before competent authorities; and which being already published, I can only refer to it here.* This declaration renders it quite clear, that her family had not been on board any ship at the time stated by Sir William Pym; and it being likewise in evidence before the Board of Commission, that Sunday was the day they were said to have gone into the bay, which must be a mistake; for, by the regulations of the garrison, no traffic is or can be carried on with the shipping on that day. Besides, is it likely a man in the situation that this Fani is stated to have been in, would have visited the shipping for pleasure?

But there is another circumstance connected with this story which Sir William Pym omits to mention. It appears in evidence before the board, that on the death of one of the Fani children, a wake was held. I need not describe the nature and object of such an assembly; but I may observe, that, if the children had died of a contagious disease, or if any apprehension of this kind had been entertained by their relatives or neighbours, it is more than probable no such meeting would have taken place. The mother stated, that during the illness of her children people were in the habit of visiting her from all parts of the town to buy cigars; and there is no evidence that the disease was extended by these means.

With regard to the nurse of the Civil Hospital, I would observe, that the nature of her illness at the time created much diversity of opinion; but admitting her indisposition to have been a case

* *Vide* Mr Fraser's paper, *Medico-Chirurgical Review*.

of the epidemic, it is certain she again sickened on the 2d of October, and died on the 13th. The woman belonged to the 23d Regiment, under my care, and was in the constant practice of visiting her husband on the different guards; and also a serjeant's wife, who lived in No. 24 district. The servant maid of the Surgeon of the Hospital, I have already stated at page 24, was attacked on the 3d or 4th of August, and relapsed on the 27th of the same month.

“*Ques. 3.*—At what period, and, if possible, say on what day, did the first cases appear in Gibraltar? Did they appear at a single point, or did they simultaneously present themselves in different points or districts?”

“*Ans. 3.*—The first cases were, as I have said, in a house of 24 district, the situation of which is healthy, very well ventilated, and 200 feet above the level of the sea. On the 11th August the disease spread in the families of the same district, where it continued, and was confined to that part of the town for near three weeks.”

OBSERVATION 3d.—I have already shown the grounds on which Sir William Pym's answer rests. If the two Fani children died of yellow fever, it is evident that it excited neither fear nor alarm in the neighbourhood where they lived. That the situation in which they lived is healthy and well ventilated is not correct; the upper floors of the building are tolerably well ventilated; but the poor people alluded to lived on the ground floor, which is not so, and near the door of their apartments was a drain, or rather a junction of drains, which emitted most offensive vapours.

The first well authenticated cases of the epidemic were a daughter and child of a Mr Martin, who sickened on the 18th of August. The servant maid of this family sickened on the 23d and died on the 28th of August; and (according to the letter of Dr Deas, dated 30th January 1829,) a Miss Maria Testa was also taken ill on the 23d of August; *third*, a Mrs Silcox on the 23d, and died on the 1st of September; *fourth*, a coachman of a Mr Duguid on the 25th, and died on the 31st; *fifth*, a Mr Leachy, four children, and two Jewesses, all in the same house, were seized much about the same time; the exact date not known; *sixthly*, from Mr Fraser's official letter on early cases, a Gullelma Loary appears the next in succession; he was attacked on the 27th August and died on the 2d of September; *lastly*, according to a Dr Mery a Miss Saffity was attacked on the 28th of August, and the first military admission was, I believe, on the 30th of August, from the Sappers and Miners. I have already observed that the fever, for about the first three weeks, followed in its progress the line of drains leading from 24 district, running along the King's Yard Lane towards the convent until checked as it were by the line wall where these drains empty themselves into the sea.

The houses where the first cases occurred are almost in the close vicinity of each other, and from the short time that intervened be-

tween the appearance of many of them, it will be no great error in language to describe the disease as appearing at a single point. The locality of No. 24 District I have already hinted at, and quoted Dr Hennen's official correspondence on the subject, showing the density of the population, the crowded and ill ventilated state of the houses, and the accumulation of all kinds of nuisance; and it may not be out of place here farther to observe that this district is situated at the south eastern angle of the town, bounded on the south by Charles the Fifth's wall, which is higher than the adjoining houses; on the east and north by a promontory or projection of the rock, so as almost to form a kind of *cul de sac*, preventing free perflation, except when the wind blows from the west. At the breaking out of the epidemic a commission, as I have already stated, was appointed to examine and report upon the state of this and the adjoining districts; and in their report of the 1st September to the Lieutenant-Governor, in addition to six sheds which they recommended to be razed to the ground, as decidedly inimical to the health of any persons who may inhabit them, "they state that the following tenements, which they enumerate, were found in a state that we conceive unfit for the habitation of man, without undergoing several alterations." And in their second letter of the 2d September, which I have elsewhere given at length, it will be seen that in the adjoining district, No. 25, no fewer than seventeen of these houses are recommended to be destroyed; and they add, as follows: "In the course of our inspection we were struck at every step we took with the density of the population, and we cannot help recommending to your Excellency that the inhabitants be permitted to break out additional doors and windows in their houses, although not specified in the original plans," and they point out to the scavenging-department several privies into which they ordered lime to be thrown, and urgently recommend Sir George Don to give directions that the openings of all drains, cess pools, and privies, be accurately covered up to prevent the emanation of all vapours from them." So much for the state of No. 24 District, which is stated by Sir W. Pym to be healthy and well ventilated.

"*Ques. 4.*—How did the disease spread from the first point or points where it appeared, and what direction did it follow in the streets or districts?"

"*Ans. 4.*—The fever extended to the north and west of the town, having commenced in the south; some points continued healthy until the end of September or beginning of October."

OBSERVATION 4th.—It would have been difficult for the disease to spread in any other direction than north-west, the district in which it commenced lying at the extreme south-east angle of the town.

"*Ques. 5.*—Were there any public assemblies when the fever be-

gan its progress? If there were any, was it observed that the number of attacks increased in consequence?

“*Ans. 5.*—The churches and places of public resort were shut on the 10th of September, to prevent the propagation of the disease.

OBSERVATION 5th.—How Sir W. Pym reconciles the existence of a contagious disease with the fact here stated I know not. According to him we have the fever first appearing on the 11th of August, and the churches, public places, &c. are not closed for a month afterwards; and although no means are taken during the time to prevent propagation, we have in Answer the 3d, Sir W. Pym’s own acknowledgment; and, which is the fact, that the disease was confined to the families of one district for the first three weeks.

“*Ques. 6.*—Has it been noticed if any house or public establishment has isolated itself, taking all possible precautions; and if, consequently, the inhabitants have remained unaffected; or on the contrary, if, notwithstanding this isolation, they were attacked?

“*Ans. 6.*—Two families in the town cut off all communication and were not attacked with the disease, with the exception of a servant maid, who went to visit her sister labouring under the epidemic. This maid was attacked and passed the disease in a room apart, under the most strict observation of some persons, who previously had passed the disease. With this precaution four individuals of the family of Trotabas avoided it. This house is not well ventilated, and is situated in the lowest part of the town. The other family which resided in the town was that of Mr Martinez, composed of eight individuals, one of whom had passed the epidemic, and the others were not attacked on this occasion.

OBSERVATION 6th.—In this answer it is painful to observe the British superintendant of quarantine, on the most equivocal and doubtful testimony, maintaining his favourite doctrine of contagion. The first part carries its own refutation along with it. Two families were in close quarantine,—yet, a maid-servant of one of these families allowed to visit her sister labouring under the epidemic; the thing seems impossible. The fact is, no inference can or ought to be drawn from the facts stated of these two families. By the evidence given before the board of commission on the subject, and which I here subjoin,* it is clear nothing like complete seclusion

* “Evidence of Trotabas, &c. before the Board of Commission.

“*Ques.*—Did you reside in the town of Gibraltar from August to January last? What did your family consist of? Had any of them passed the fever before, and was any of them sick during the late epidemic? Did you take any precautionary measures of seclusion, and what were they?

“*Ans.*—I did reside in this town during the time mentioned. My family consisted of thirteen persons including servants, five of these had passed the fever during various epidemics in this garrison, and two had passed it in Spain. One servant maid

existed; and the immunity which they are stated to have enjoyed is more satisfactorily accounted for on other grounds; the situation of their houses, perhaps, one of which is situated at a corner where four streets meet, and where there was free ventilation. There were also several families, neighbours of Martinez, who never put themselves in quarantine, and who never caught the disease, showing that seclusion was not the cause of the immunity enjoyed by this family. Trottabas was a baker, and carried

was ill of the epidemic fever in the latter end of October last. She had not passed the fever; she passed the disease in my house. I placed this woman in a distinct and separate room, which I had prepared to meet such an accident. This room was well ventilated and separate from the rest of the family, and was entered only by my mother and myself while this woman was ill in it. We had passed the fever before. Fearing lest we might communicate the disease to the rest of the family, my mother and I always took the precaution either of washing ourselves with vinegar, or changing our clothes upon leaving the sick room, before we mixed with the family again. These precautions we observed to a greater or less extent according to the communication we might have had with the sick person. The illness of this woman lasted seven days, but she was kept without communication with that part of the family that had not passed the fever for twenty-five or thirty days, and even at the end of that period she was not allowed to mix with that part of the family until she had been washed over with eau de Cologne twice.

“The clothes she had used during her illness were hung out in the open air until she was sufficiently recovered to wash the same herself; the room was afterwards perfectly white-washed and fumigated. No other individual of my family was ill during the last epidemic.

“My house is situate in the lower part of the Main Street, near the Four Corners. It is one of the oldest houses in Gibraltar, and is not free from bad smells. There are two privies and two sinks in this house, which emit a very bad smell, in consequence of their level being below that of the street. My shop being open, people came freely into it, but they did not mix with the family, particularly with that part of it who had not passed the fever. I took particular care that my four children, from the age of seven to one year old, should not leave the house except under charge of a person who had passed the fever, and who would prevent them from having any communication, direct or indirect, with sick people. My servant maid was attended in her illness by Dr Mery. My children went out sometimes during the day, but chiefly from sunset to dark, this being my leisure hours. I have reason to believe my servant maid had visited her sister, who was ill of the disease previously to her falling ill herself, and contrary to my orders.”

“Evidence of Mr Laurioux de la Sotilla, clerk in the house of Ignacio Martinez.

“*Ques.*—Did you reside in the town of Gibraltar from August to January last? How many did the family you lived in consist of? Had any of them passed the fever before? Were any of them sick during the epidemic, and were there any measures of seclusion adopted in that family?

“*Ans.*—I did reside in the town during the time mentioned. The family in which I lived consisted of eight persons, seven from the age of thirty-four to eleven, and one, the maid-servant, was fifty-four. She was the only person who had passed the epidemic. No individual of this family was ill during the epidemic. The whole of the family remained in town during its continuance.

“Mr Martinez, myself, and the servant boy, were the only persons who quitted the house during the epidemic. Mrs Martinez, the children, and a lady who lived with her, were constantly shut up at home. Mrs Martinez’s house is situated in the Main Street, No. 24, opposite Tukey’s Lane. No visitors who had not passed the fever were received, and even those who had passed it, who might have visited sick persons, were not received. Mrs Martinez and her children went out for the first time on the 14th of February. Mr Martinez and myself were never out after half-past seven or eight o’clock. We avoided as much as possible those who had a sickly appearance. There are two drains in our house; they don’t give a bad smell. The house is a new one, and was finished in September last.

on his business, keeping open shop during the whole period of the epidemic—another proof that his seclusion could not have been very perfect. But, willing to give Sir W. Pym the full benefit of these two families as strengthening his doctrine of contagion; I could, were it necessary, quote fifty others having an opposite tendency. The family of a Mr Farquhar, for example, who lived below the Naval Hospital, put themselves in strict quarantine at the commencement of the epidemic, one of whom caught the disease and died. The examples of people enjoying immunity from situation alone, though in constant communication with the sick, might be multiplied without number. In the same house even, families occupying the upper stories were known to escape while those on the ground floor suffered severely.

In Bossana's house at Rosia, for example, many individuals in the upper story escaped the disease, while every person in Belasco's family, living directly under them, and who had not passed the fever, were attacked. In another house in the south, sixteen individuals died on the ground floor, and not one was taken ill in the upper.

“*Ques.* 7.—Has the same been observed with respect to any district or wards? In that case indicate the peculiarities of the locality.

“*Ans.* 7.—Three families in the south district of the garrison also exempted themselves by the same precaution, namely, those of Mr Howell, Major Drewe, and Mr Pritchard, although the disease was prevailing in all the contiguous houses.”

OBSERVATION 7th.—How far seclusion was effected in any of the three examples quoted by Sir W. Pym, the reader may judge when he has perused the evidence as given before the Board of Commission. Of Major Drewe I am not exactly certain. His evidence, for what reason I know not, does not appear on the face of the proceedings; but the impression on my mind is, that I have seen him several times visit the Hospital, and performing the other duties of a field-officer during the fever. Mr Pritchard's evidence speaks for itself, and I shall leave it as it is; * and Judge Howell

* Evidence of Edward Pritchard, Esq. Registrar of the Civil Court.

“*Ques.*—Did you reside in this territory in the south, from August to January last? What did your family consist of? Had any of them passed the fever? Were any of them ill during the last epidemic? And did you adopt any, and what, measures, and when?

“*Ans.*—I did reside in the south during the time mentioned. My family consisted of myself, my sister, and three servants. One of them only, the man-servant, had passed the fever before. None of my family was ill during the last epidemic. We commenced to seclude ourselves at the latter end of September. The seclusion was perfect, with the exception of the man-servant, who had passed the fever before, who did our marketing in town for about two months after our seclusion; after which this man was permitted to go out on Sundays only, to visit his family.

“*Ques.*—Did you receive any visits during the period of your seclusion?

“*Ans.*—As far as I can recollect, we were visited by Ensign Lewis only, 94th Regiment, who was quartered on Wind-Mill Hill. Mr Amiel also called to see my

authenticated before the Board, of which he was a member, the evidence he had previously given to the Anglo-French Commission, relative to the seclusion of his family, which was to this effect; namely, that he had not secluded himself; that he was in the constant habit of receiving people on business into his house; paymasters of regiments for example, to swear to their pay lists; and that Mr Amiel, surgeon of the 12th Regiment, had been in the habit of visiting his family often, directly from the wards of his hospital.

“*Ques. 8.*—During the prevalence of the said fever in Gibraltar has there been noticed any particular phenomenon among domestic animals, quadrupeds, or birds?”

“*Ans. 8.*—It is said that several dogs have died. A monkey which belonged to Mr Griffiths died after three days illness, and the skin became yellowish.”

OBSERVATION 8th.—In addition to the dogs and monkey, a goat-herd lost a great part of his flock, and almost the whole ceased to give milk; and a Mr Bonfante, in the course of ten days in the month of September, lost one mackaw, two parroquettes, one parrot, three canary birds, one calandra, one raccoon cat, one small monkey, and one ring-tailed monkey. Three pointer dogs were also taken ill with shivering and great debility, and they were constantly vomiting at first a kind of bilious matter, afterwards a very black matter; the eyes and ears were quite yellow. Mr B. adds, that the dogs survived in consequence of quantities of oil having been given to them. Mr Duguid also lost eight game dogs within a few days of each other. All were yellow, and vomited; and, in the course of the epidemic, upwards of twenty parrots were sent to Mr Fraser of the Civil Hospital, from inhabitants to be dissected.

“*Ques. 9th.*—Has the fever attacked any individual who had suffered from it formerly in Gibraltar, or in any other place?”

“*Ans. 9th.*—I do not know that any person who has suffered from this disease in the West Indies, America, or Spain, has again contracted it in Gibraltar. There were upwards of 6000 persons who had laboured under it previously, and these have not been attacked a second time.”

OBSERVATION 9th.—If Sir W. Pym had shown the candour of a

sister, who was slightly indisposed, and also to see the servant-maid. Miss Dantoine, a neighbour, also called. She had passed the fever in 1804.

“*Ques.*—Were there any inhabitants of the houses immediately around your house attacked during the epidemic?”

“*Ans.*—Yes; I understand there was sickness in every house around me. A great many deaths took place, particularly in the hospital road. Miss Dantoine did not visit us after the servant-maid died, as far as I recollect.

“Thomas Jones Howell, Esq. Judge, Member of this Board, requests that the information given by him to the Anglo-French Commission, relative to the seclusion of his family, may be read, when he will authenticate it.”—See Proceedings Board of Commission.

man anxious to elucidate the truth, he would have mentioned the case of Boyd of the 23d R. W. F. who died of the late epidemic after having had yellow fever in the West Indies. Many other well-authenticated cases of second attack could be brought forward. Sir W. Pym invariably showed an unreasonable degree of incredulity when those cases were mentioned to him, though he was very anxious to receive, however equivocal, the testimony of those who favoured his own view of the question. The fact is, the 6000 persons here stated as having had the fever formerly, and who had not been attacked a second time, rests on questionable evidence. After what I have stated of the Dygden, the Fani family, Trottabas, and other persons who put themselves in quarantine, &c. &c. it will be perceived that Sir W. Pym is not scrupulous as to evidence on one side of the subject. But I am not inclined to cavil with him on this point. The non-liability doctrine is proper enough to be promulgated amongst the people, for it excites courage. I only contend the rule is not absolute; but, as Dr Hennen justly observes, "only a general result." How Sir W. Pym claims this as his discovery, is to me inexplicable. The same fact was publicly proclaimed in the streets of Malaga one year before he ever thought of such a thing. Arejula, in 1803, had the following placard posted in the different streets of that city; and Humboldt mentions in his Political Essay, that at Vera Cruz, "in the midst of the epidemical black vomiting, the natives and strangers seasoned for several years to the climate enjoy the most perfect health;" and I may say almost every writer on yellow fever states the same fact. The degree of immunity, however, conferred by first attacks, is yet to be ascertained, as well as the difference between relapses and second attacks, the former of which were of frequent occurrence after our late epidemic.

"Estaran Todos en la firme persuasion de que el que haya sufrido ya la enfermedad epidemica en esta ocasion, en el ana pasado de 1800, en qualquiera otro, o permanecido largo tiempo en la America Saptentrional, *esta exeuto de este mal*; y debe suaderle, para que lo entienda bien, como al que ha tenido viruelas, que no rezela m piensa en que se le pequen, aun quando entre adoude les hay: por tanto, debe este a fortunada clase de sugetos uo huir del riago, pues uo tierie el menor, y prestarse con gusto y satisfaccion a la asistencia de sus concindanas y parientes."—See Arejula Fiebre Amarilla, page 229.

"*Ques. 10.*—In preceding years, at the same season that the prevailing fever began to break out, have fevers similar to this been also observed, if so, point out all their analogies or points of resemblance?"

"*Ans. 10.*—In the years preceding 1828, during the months of August, September, and October, nineteen soldiers only have died of fever. When remittent fevers appear in Gibraltar, which is rare, they are traced to marshy exhalations, formed along the small streams in the vicinity of San Rogue. Inter-

mittents are not known in Gibraltar. A solitary instance has been observed during the late epidemic in an individual who had come from Barbary."

OBSERVATION 10th.—Sir W. Pym does not mention the nature of the fever of which these nineteen soldiers died. At one period of medical rule in this garrison every variety of fever was ordered to be returned under one head. Such, indeed, was the thralldom of the military medical press (if I may so use the expression) in Gibraltar, from the termination of the epidemic fever of 1814, until the arrival of the late Dr Hennen in 1826, that it was considered a most wicked heresy for a surgeon of a corps to return fevers under any other head than simple continued fever. The consequence is, that although febrile diseases are the most frequent of the numerous diseases treated both in the Military and Civil Hospitals, no correct table of fevers can be now framed from the returns of these establishments; no distinction whatever being drawn between the different species of remittent and continued. The authors of such a measure can best answer for themselves. To me it appears to have been an attempt, and one too successfully made, to obstruct the advance of truth, short of nothing but the direct application of the bayonet's point; and it is due to the memory of Dr Hennen to state, that he had not assumed the charge of the department two weeks before he abrogated this mischievous state of things. This measure soon showed, that neither the intermittent, remittent, or continued yellow fever, were so uncommon forms of disease in the garrison as Sir William Pym, and others of his school had for a series of years endeavoured to represent. Instead of remittents being rare, and intermittents never occurring in Gibraltar, Dr Hennen says, at page 119 of his *Medical Topography*, "I have no hesitation in asserting, that remittent fevers are of frequent occurrence (speaking of Gibraltar;) that the bilious autumnal remittent is annually met with, and that cases of genuine yellow fever, (as described by writers on the diseases of the West Indies) accompanied with true black vomit, occur both in the Civil Hospital and in private habitations." And a little farther on in the same paragraph he adds, "It has been asserted that these fevers are solely the produce of the Neutral Ground and the Lighters in the bay, but annual proofs subversive of this hypothesis are not only familiar, but on record." I can with confidence add my own testimony to the truth of these observations. I have already this year (1830) seen three well-marked cases of sporadic yellow fever in this garrison, two of them with black vomit.

"*Ques. 11.*—During the prevalence of the fever, which has committed such ravages in that town, have any other acute diseases peculiar to the season and different from it been observed? In that case mention what they were, and if their usual character has undergone any modification.

“*Ans. 11.*—Gibraltar is generally very healthy. No other particular disease was experienced during the epidemic. There have been some fevers among the soldiers, arising from exposure to the sun, or other irregularities. In general they were sent to Hospital, as if they had been attacked with the epidemic; and, consequently, some of them, convalescents from that complaint, were actually attacked by the epidemic, and this was considered a relapse of the latter disease.”

OBSERVATION 11th.—Why Sir William Pym believes that the cases admitted into Hospital were simple fever arising from the common causes, exposure and irregularity, and not that they were cases of the epidemic, I candidly confess I know not; for I can assert I never saw any of these cases of simple fever, and I was present from the beginning to the end of the epidemic. Never were soldiers less likely to have fever from exposure and irregularity than during the epidemic season, for all parades and duties, except mounting guards, were suspended. The men were strictly confined to the camp, so that they could not indulge in their wanton habits of drunkenness and dissipation; and from the almost total subsidence of other diseases during this period, I am borne out in the opinion, that all the fevers then admitted were of the same nature, and that when relapses took place they were fairly to be considered as relapses of the epidemic fever, and not this disease supervening after an attack of simple fever. I may here mention a fact illustrating the general epidemic influence, and which was the total disappearance of ophthalmia in the 23d Regiment, in which it had for some time extensively prevailed, during the prevalence of the fever, and its reappearance when the febrific miasmata ceased to produce their effects.

“*Ques. 12.*—Has the prevailing fever attacked any individuals labouring under chronic affections, such as venereal, scrofula, rheumatism, phthisis, &c. and if there have been any patients of this kind, has it been remarked that their former complaints underwent any modification?”

“*Ans. 12.*—Few cases of venereal or scrofula existed in Gibraltar, but several of those who had pulmonary complaints were attacked by the epidemic, and in some cases they seemed to be cured of these affections.”

OBSERVATION 12th.—I am unable from personal experience to confirm or refute what Sir W. Pym here states, as the few men in the 23d Regiment who laboured under other diseases at the time they were attacked with the epidemic fell victims to it. It was, however, generally observed, that this fever was less fatal amongst the weakly and delicate than the robust and strong.

“*Ques. 13.*—Has any circumstance worthy of remark been observed with respect to pregnant women, or those in child-bed, or

in new born infants, who have been attacked with the prevailing fever?

“*Ans. 13.*—This disease was very fatal to pregnant women, as several miscarried.”

OBSERVATION 13th.—I believe a great majority of the pregnant women who were attacked with the epidemic fever miscarried, and many died. One woman died in the Civil Hospital, and was examined after death; and although in her own person the usual appearances of the fever were present, the child and contents of the uterus were perfectly healthy. The fluid found effused into the abdomen of the mother was deeply tinged yellow, but the *liquor amnii* was clear and transparent, and the skin of the child of a natural colour. Fever of any kind frequently occasions miscarriage.

“*Ques. 14.*—Were the attacks most frequent in the day or during the night?

“*Ans. 14.*—The attacks were more numerous during the night, according to the morning reports.”

OBSERVATION 14th.—I should say, as far as my own observation goes, that four-fifths were attacked at night, and, as I have already observed, some particular guards sent more men in proportion to hospital than others.

“*Ques. 15.*—When the atmosphere presented any variation in its qualities, was there any variation in the number of the attacks, or did those already attacked experience any alteration?

“*Ans. 15.*—When the winds were light the attacks were more numerous, but the symptoms did not vary.”

OBSERVATION 15th.—What the particular atmospherical conditions were which influenced the progress of the epidemic have not been satisfactorily ascertained. Temperature had evidently a more marked share in checking and ultimately destroying the disease than winds or rains, as we had frequently strong breezes from the southward and westward without producing any perceptible effect. We had heavy rains also without the disease being at all checked; but the moment the temperature became reduced, in consequence of a northwest wind, the fever subsided, and in one night I may say the febrific poison ceased to exist.

“*Ques. 16.*—Has the fever been more frequent or more fatal among the military than among the civil population of the garrison, and has it made greater ravages among the poor, and where cleanliness was neglected, than among the rich and well lodged? Point out the causes which may have produced these differences.

“*Ans. 16.*—The mortality among the rich and poor were equal, as also the proportion of deaths among the military and civilians, excepting two regiments, viz. the Royal Artillery,

and 43d Regiment, which suffered more in proportion than any other corps, as nearly one-half of those attacked died. I believe the general average of deaths has been one in $4\frac{1}{2}$."

OBSERVATION 16th.—This is in unison with other general assertions in these answers, and where the superintendent procures his data would be, I apprehend, as difficult for him to say, as it is impossible for me to conceive. There were no documents on the subject to enable me to demonstrate the contrary; but of this I am certain, that it was the general opinion, not only of the medical officers of the garrison, but indeed of all the inhabitants, that the mortality was much greater among the poor. The admissions amongst the military, including officers, women, and children, were 2002, and the deaths 512, or about 25.5 per cent.; estimated number of civilians admitted 4701; deaths 1281, or about 27.2 per cent., making a slight difference in favour of the military. I think it necessary to notice this fact, as it contradicts the assertion of another individual, Dr David Barry, of Welbeck Street, Cavendish Square, London, who does not appear more scrupulous in weighing evidence than his patron Sir William Pym. This gentleman has asserted that the practice of the Spanish civilians was more successful than that of the British army surgeons. Upon what foundation is this opinion stated?

"*Ques. 17.*—Upon the whole of the patients can the disease be viewed under distinct gradations or forms? Point out the principal symptoms in each of these gradations or forms, as also their respective mortality.

"*Ans. 17.*—I was so much engaged in the duties of medical superintendent, that I could not fix my attention on particular cases. The disease, however, appears to have presented itself under three varieties. 1st, The patient was slightly attacked, the paroxysm lasted from fifteen to twenty hours, and the convalescence was rapid. In the 2d, the paroxysm was prolonged to fifty or seventy hours, and terminated quickly, the symptoms having risen to a greater height than in the former; the patient was apparently convalescent when the second series of symptoms appeared; namely, a sensation of flatulence in the stomach, hiccough, sickness, and vomiting of a dark gray fluid; afterwards, black, like coffee-grounds; incontinence of urine. At the latter end of the third day a yellow tinge appeared in the neck and eyes, and the patient generally died on the fifth or sixth day. Very few who had these symptoms survived the disease. In the 3d variety, the disease was more violent from the outset, being attended with delirium, great irritability of stomach, black vomit on the second day, and death on the third.

OBSERVATION 17th.—I am inclined to agree with Sir William Pym in describing this fever under three forms or varie-

ties, and I would say, that each variety was characterized by its own peculiar symptoms. The first or mild form did not differ from fever arising from common causes, except that the lumbar pains and frontal headach were perhaps better marked; the tongue was often clean; the circulation little disturbed, and the heat of skin moderate; and from twenty-four to thirty-six hours the patient was generally restored to convalescence. Relapses were more frequent after this form of the disease, and often proved fatal. In the second or more severe form, the symptoms were more concentrated; the lumbar pains more acute; the frontal headach more intense; the pulse strong and quick; eyes suffused, and often of a dingy colour; thirst; a dry and red tongue, sometimes moist, and coated with a white viscid matter, sometimes in streaks, but more frequently covering its whole surface; vomiting not unfrequent; and, as the fever advanced, the skin became yellow as well as the conjunctiva, and hemorrhages from the nose, mouth, or anus occasionally supervened; delirium also; sometimes coma, with a sense of burning in the throat, and tenderness of the epigastrium; the exacerbations were often well marked, but the duration of the fever was quite uncertain, depending apparently on peculiarity of constitution and other causes. I have known upwards of twenty days elapse before convalescence was established, and in some of these cases delirium, perhaps more properly stupor, was present the greater part of the time. I seldom observed this form prove fatal; on the contrary, when the bowels were freely and easily acted on in the beginning, and where the vomiting was not constant, recovery was almost certain to follow. Relapses were not frequent after this form. The last, and what I would call the fatal variety, presented itself in a more aggravated form from the very beginning than any of the other two. There was great prostration of strength, with vomiting, anxiety, quick and often irregular pulse; tongue dry and furred; a peculiar dull and suffused appearance of the eyes, and countenance, altogether not unlike that of a drunken person; restlessness and often severe pains in the calves of the legs and whole lower extremities; bowels difficult to move; thirst urgent, and in a short time black vomit; suppression of urine; hiccough; yellow skin; hemorrhages, *petechiæ*, sometimes *vibices*; delirium; coma; a deadly or icy coldness of the extremities; pulse imperceptible, and soon after convulsions and death. This form was also uncertain in its duration; but I have never known it extend beyond the fifth day, and in one or two instances it proved fatal in thirty-six hours.

“*Ques.* 18.—What method of cure has been most generally employed, and with the least doubtful result? Give some particular cases, principally of those patients which, in the progress of their diseases, have presented phenomena worthy of remark.

“*Ans.* 18.—Many practitioners used mercury; but in my view, many of those who recovered under its use would not have

failed to do so if they had not taken any. Purgatives and laxatives employed at the commencement were more successful. Oily remedies, castor oil, or olive oil, it is said, have been used with much advantage by some families who did not call in any medical man. It is asserted that many individuals who concealed their diseases for fear of being removed to the lazaretto were all cured by using oil."

OBSERVATION 18th.—The whole of this answer is an assertion without proof. Sir W. Pym has told us that his superintending duties prevented him from attending to particular cases; yet he scruples not to condemn mercury, as useless at least, if not injurious. My experience leads me to a different conclusion. I have seen it in the severe forms of the fever decidedly beneficial. The majority of the cases, when the system was fairly under the influence of this medicine, did well; and I think without its use several of them would have had a different termination. In the mild forms mercury is not called for. Beyond keeping the bowels moderately free, nothing is required; and I have known several patients get well without the use of any medicine. In the more severe forms, however, allaying morbid action, and relieving urgent symptoms, were imperiously indicated; and with this view, especially at the commencement of the epidemic, bleeding was freely practised in some corps, but, as far as I know, without any very good effect, a small quantity abstracted often producing alarming debility. The application of leeches, however, to the epigastrium, when there was pain or tenderness, I have seen useful. But the most successful practice appeared to be that which kept up for the first two days a free alvine discharge. Warm bathing; blisters to the epigastrium; large enemata, and frequently repeated frictions to the extremities, &c. &c. were all occasionally had recourse to, and sometimes with advantage.

“Ques. 19.—Were disinfecting means used, such as fumigation, washing, ventilation, &c. and among these the solutions of the chlorurets of sodium and lime, either in public establishments or in private houses? Point out what these means have been, and likewise their effects or results.

“Ans. 19.—At the commencement of the disease, fumigations with nitre, manganese, and acids were used; afterwards the chlorurets of the oxides of sodium and lime. The last two were used in great quantity to purify the houses after the termination of the disease; but as the fever was so general, it is impossible to state the effects produced by them. Of those who attended the patients in the hospital, few escaped, especially those who were employed for some time on that duty.”

OBSERVATION 19th.—I have never known any good effects result either from fumigations or the use of the chlorurets. The latter were used in the dissecting-rooms with the view simply of destroying bad

smells; but of their disinfecting powers I have no knowledge; and the employment of these articles in expurgating the town must have been useless, as this process, to my knowledge, was very imperfectly performed.

“*Ques. 20.*—Have autopsies been made? Point out with the greatest exactness every thing noticed in the subjects, as well internally as externally, joining to the inspection the particular history of each case.

“*Ans. 20.*—A great number of bodies were inspected. Externally, yellowness of skin and spots in certain parts of the body were only remarked. Internally, the stomach and the liver were the organs injured. The liver presented yellow stripes like variegated marble. The internal coat of the stomach presented different aspects; sometimes it appeared as if separated, and with portions abraded; at other times were observed gangrenous spots, which extended from the stomach to the duodenum.”

OBSERVATION 20th.—This is such a meagre account of the necroscopic appearances that I shall give the following detail drawn up by my excellent assistant Dr Browne, from a great variety of autopsies carefully made. *Externally.* Yellowness of skin, ears of a leaden colour, depending parts livid; dark spots on the anterior part of the scrotum, with occasional excoriations. Yellowness generally extended to the osseous, adipose, and other structures, with the exception of the muscular. *Head.* There was usually an infiltration of a yellowish serosity to a greater or less extent under the arachnoid, with congestion in the veins and sinuses, though in some cases this was not very remarkable. *Thorax.* The lungs presented, almost always, numerous dark spots externally; or were nearly uniformly of a dark colour, and the infiltration of blood into their tissue, forming what is called splenization, was very frequent. The bronchial mucous membrane was often reddish and coated with a copious sanguinolent frothy fluid; in other instances it was pale or yellowish, as also that of the trachea. *Abdomen.* The contents of this cavity were almost always more or less of a yellow tinge. The œsophagus was usually deprived of epidermis near its termination, and exhibited spots of a dark or brownish colour. The stomach, nearly in every case, contained black vomit, and was often distended with that fluid or inodorous gases. Dark patches in its mucous coat, of various extent, were found around the cardia especially, and more or less of punctated redness in the large extremity and large curvature, from injection of villosities. In the rest of its extent it was of a rose shade, and in a few cases it was of a pale or rose colour throughout; it was always coated with a copious viscid mucus, and often presented numerous rugæ, with a more or less marked *état mammelonné* in their intervals. Its tenacity was but little diminished in many cases, and only round the cardia or in the large extremity. It occasionally exhibited slight circular depressions, as if a bit of the mucous coat had been pinched out, very

rarely ulceration or thinning, and it never was gangrenous, or separated from the subjacent tissues. The small intestines, in the majority of cases, presented more or fewer vascular arborizations externally, and a slight tinge of yellow. Internally, they usually contained a dark fluid, which increased in consistence as we descended in the canal, but in a few instances the contents of this part of the tube resembled pease-soup, or a yellow glairy matter, more or less consistent. Their villous coat was generally covered with a copious viscid mucus, and sprinkled with patches of punctated redness, especially in the duodenum; and the free margins of the *valvula conniventes* were frequently reddish. It was often more or less softened, but never presented alteration of the glands of Peyer, or ulcerations towards their termination. The large intestines contained generally a pultaceous black matter, and their mucous coat was, ordinarily, of a natural appearance and consistence. The liver was almost in every case of a yellowish or pale colour, resembling boiled liver, and the red granulations were not so distinct as usual; its tissue did not contain much blood, nor did it exhibit any traces of coagulable lymph or suppuration. The gall-bladder, generally, contained a greater or less quantity of a dark glairy fluid, resembling molasses. In some few instances, however, the contents of the viscus were clear and transparent, and in one or two cases the ducts were obstructed. The spleen was commonly of the natural appearance. The kidneys were more or less yellow. The bladder was generally contracted and empty, and coated internally with a yellowish mucus. At times it presented more or fewer vascular arborizations towards its cervix.

The muscles were usually of the natural appearance; but in a few rare cases, there was an infiltration of a gelatinous or sanguinolent fluid into their substance, which was remarkably softened. At times the psoæ and internal iliacs were of a dark hue, and softened.

“*Ques. 21.*—A short topographical description of the inhabited part of what is called Europa Point, and the Encampment at Land Port is requested; that is to say, What distance and in what direction they lie from the town; if the ground is flat, or uneven, or chalky, or sandy; if there are pools or hills, &c. in their vicinity, and their respective situations?”

“*Ans. 21.*—Europa Point and Wind-Mill Hill are a long mile from the town wall, and form the most southern part of Gibraltar. The bottom is of the same limestone as the rock, with very little sand or vegetable earth, and from one to 200 feet above the level of the sea. In this locality the wind from the east gives a free circulation, which beats against the more perpendicular and elevated side of the rock, nearly two miles in length.

“The Encampment at Land Port begins about half a mile from the gates of the town, on the Neutral Ground, which, from its situation between the rock of Gibraltar and the high land of Spain, enjoys constantly a free ventilation. The soil of the

Neutral Ground consists chiefly of sand and shells, with the exception of some parts where gardens have been formed artificially, by the accumulation of manure collected in the streets of Gibraltar. In this locality there are no pools or marshy spots. The only point nearest Gibraltar which may be considered unhealthy is Campo Mento, half way to San Roque. Intermittents have never been generated in Gibraltar; and a few cases, though very rare, have been observed on the Neutral Ground, among families who live there or near the gardens."

OBSERVATION 21st.—The description here given of the Neutral Ground by Sir W. Pym is somewhat different from Dr Hennen's, and certainly at variance with facts. Instead of there being no pools or marshes, as stated by the former, Dr Hennen says, at page 22 of his Medical Topography, and which is the truth, "in winter the rain water forms numerous and extensive pools, which continue during the spring months. These pools are only dried completely up by the summer heats; but there is one near the high road beyond the gardens which is never dry."—"Besides these adventitious depositions of moisture," says he, "there are numerous internal sources of permanent supply at the Neutral Ground. I have been led particularly to examine the spot, in consequence of the assertion that no source whatever of marsh miasmata existed at Gibraltar. If, by this assertion, it is meant that NO MORASSES at present exist, I perfectly concur with it, but I can go no farther; because, under the present head, I have indicated numerous sources of aqueous exhalations, and I am about to point out others of a still more extensive nature."—"Indeed," continues he, "the most superficial observer could scarcely ride over the Neutral Ground without perceiving many external evidences of under-ground moisture." I might here continue this quotation illustrative of the same fact, but enough has been given to show the inaccuracy of Sir W. Pym's statement. The last clause of this answer, respecting the non-appearance of intermittents in Gibraltar, I have in the 10th observation satisfactorily refuted.

"Ques. 22.—What proportion of the population withdrew to these two places when the fever appeared in the town?

"Ques. 23.—Did they live in houses or huts dispersed, or collected and forming streets?

"Ques. 24.—Did all these people remain without communication with the town, or did they keep up communication by means of some individuals going to and fro?

"Ans. 22, 23, 24.—About 6000 of the population of Gibraltar withdrew to the Neutral Ground. Those who passed the epidemic in preceding years kept up free communication with the town. They lived in detached houses and in tents. The military for a long time kept up communication with the

town doing their duties and guards, &c. until a sufficient number had recovered from the fever capable of performing that service, then the posts were occupied by soldiers only who had passed the epidemic."

OBSERVATION 22d, 23d, 24th.—Free communication was kept up until the time of Dr Hennen's death in November, between the town, the Neutral Ground, Europa Flats, and the Bay, but no well authenticated case is known to have originated in either of these two latter places. Neither could the disease be propagated there by contact or other means. I have known matter of black vomit deposited in the bed of a person in health without producing any bad effect; and people, just arrived from England, and, of course, peculiarly susceptible of the disease, act as nurse to a patient on the Neutral Ground in the last stage of this fever with black vomit, &c. with impunity; and I have already enumerated other facts corroborative of the truth of this assertion; namely, that our late epidemic could not be propagated in any of these localities; and I have also stated, that all those who strictly confined themselves to the above localities remained healthy.

"*Ques. 25.*—In these two encampments or villages were there any patients with the same fever as in the town?"

"*Ans. 25.*—The same disease was introduced among different families in the Neutral Ground encampment, but this was from their communication with sick or contaminated individuals."

OBSERVATION 25th.—It certainly was introduced into these encampments; but it is well known that the individuals alluded to contracted the disease out of camp, and did not communicate it to their comrades.

"*Ques. 26.*—Have those persons who, at the beginning, left the fortress, and withdrew to the points referred to, maintained themselves exempt by avoiding all communication with the town?"

"*Ans. 26.*—They remained unaffected if they had no communication with the sick or contaminated persons."

OBSERVATION 26th.—This reply does not require to be particularly noticed.

"*Ques. 27.*—Of those who, though encamped at the beginning, continued their communication by means of persons or effects, were any attacked with the disease in question?"

"*Ans. 27.*—There were some cases of certain persons having been attacked after having had contact with patients on Wind-Mill Hill and Europa Point. These cases were more frequent on the Neutral Ground."

OBSERVATION 27th.—This answer is incorrect, and requires no comment after what I have already stated.

“*Ques. 28.*—If some really were attacked, did they communicate the fever to those encamped close by them?

“*Ans. 28.*—The sick communicated the disease to others on the Neutral Ground in *one* or *two* instances in houses full of people. I may mention the family Boufanté; but what is strange is, that in Catalan Bay, on the east side of the rock, the fever did not reach it until the 25th or 27th of September. The first person attacked was a water-carrier, (named Andrea Andre,) who had communicated with the town. The disease spread from this man to his family and others who resided in Catalan Bay, who had not entered Gibraltar for some weeks previous, as was the case with about 100 families who live in that spot: Nevertheless, the disease only spread to ten families, and to about forty individuals.”

OBSERVATION 28th.—Sir William Pym in this answer contradicts himself. In the answers, 25–27, he tells us the cases were frequent on the Neutral Ground where persons were attacked who had communication with infected individuals, but here the examples are reduced to *one* or *two*, and only one family mentioned by name. A more unfortunate example perhaps Sir William Pym could not have chosen. According to the evidence given before that Board, a young lady faints, and is instantly seized with an alarming fever at the very sight of what she calls black vomit on the skirts of the garments of the parish priest. A loving swain follows her example; and the padre, the author of the mischief, gives a flat contradiction to both their stories. He states, although not examined before the Board, (for reasons that are obvious,) that he had no black vomit on his clothes; that he had not been visiting any person labouring under that form of the disease; and that, the only person he had seen was a Mr Testa of the Health Guard, who was suspected by the importationists of introducing the disease into the garrison, and that he was in a tent by himself. But our astonishment is not allowed to cease here at the magical powers of contagion. Sir W. Pym gives a brief outline of its introduction into Catalan Bay, and how it spread from the unfortunate waterman, Andrea Andre, in this little village; but, as I have already referred to this story (page 22,) in speaking of the origin and progress of the disease, and shown how far contagion operated in the business, I shall take no farther notice of it.

“*Ques. 29.*—When the fever broke out in Gibraltar, were there any persons or families who took refuge on board vessels anchored in the bay?

“*Ques. 30.*—Has the disease been observed among those refugees, or among the crews of the vessels where they went to live?

“*Ques. 31.*—Were there any vessels which put themselves in

strict quarantine? In his case has it been observed that they had patients with the same fever that prevailed in town?

“*Ans.* 29, 30, 31.—Several families embarked in vessels lying in the bay, but I have not known of any one having been attacked. The captain of the port established excellent precautionary measures for the vessels. In 1804, such measures were not taken, and there was several cases in the bay.”

OBSERVATION 29th, 30th, 31st.—Several hundreds embarked on board vessels in the bay, and as many I believe had free communication between the shore and the shipping during the epidemic. No precautionary measures whatever were adopted by the captain of the port. I myself had almost daily communication with a ship in the Bay, for the purpose of visiting my commanding officer's wife, who removed thither at the breaking out of the epidemic, yet the disease never spread among the shipping. Probably Sir William Pym never expected his replies to the Spanish faculty would have been made public. Certain it is they were printed in Cadiz five months before the circumstance became known at the Rock, and it was always difficult to procure a copy. I had very great difficulty in procuring the one I did; and I am told it is now impossible to purchase one. All the copies, it is said, have been purchased by the superintendant.

“*Ques.* 32.—And of those who continued in free communication with the garrison, were there any of them sick, or did they continue free from the disease?

“*Ans.* 32.—The precautions on board the vessels were most rigid; and I do not know that any one has been attacked with the fever on board.”

OBSERVATION 32d.—This answer demands no particular observation. If any individuals sickened in consequence of communication with the shore, they never affected any one else on board the same ship with them.

“*Ques.* 33.—It will be expressed if the individuals who dwelt on board the vessels where these were, no sick had passed the fever at former periods?

“*Ans.* 33.—Of the individuals on board, some had passed the epidemic; but 400 people who had not passed it went there likewise.

“It appears that a considerable number of individuals passed the epidemic in their mother's womb. When the latter had it in preceding years, they enjoy the same immunity against a second attack of yellow fever; and I am of opinion, that the children of those fathers who have passed this disease will suffer less from it than those whose fathers have never had it.”

OBSERVATION 33d.—It is not likely that many in the Bay belonging to vessels had passed the fever; and of the 400 who left the garrison, according to Sir William Pym, I am not aware that one suffered from the disease who constantly remained on ship-board. The last and concluding observation in this answer is so purely hypothetical, that it scarcely deserves notice. The autopsies I have alluded to at the Civil Hospital would seem to negative the idea of children passing the epidemic in their mother's wombs, when the latter had it in preceding years; and that of the children of those fathers who have passed the disease suffering less than others, is, I suspect, an opinion resting on the same visionary data as many others advanced by the superintendent-general of quarantine regarding Gibraltar yellow fever.

I have finished what appears to me necessary to mention of the late Gibraltar fever; and I trust have satisfactorily shown the insufficiency of the grounds on which the opinion of its origin and nature, as given by Sir William Pym to the Medical Society of Cadiz, rests. I do not mean to impute motives of wilful or direct misrepresentation to the superintendent-general of quarantine; but certainly his desire to strengthen and to support favourite opinions has led him from the path of strict induction; and the Medical Society in Cadiz, instead of receiving that information they sought for, and which their judiciously drawn up queries so justly entitled them to expect, have now to form their opinions of an important and fatal disease, from mere dogmas and gratuitous assertions, contradicted by the observation of every unbiassed person in this garrison. The evil of promulgating doctrines similar to those of Sir William Pym, without the clearest evidence, cannot be too severely reprobated, especially when we reflect on the fatal effects that may result, and the thousands that may fall victims in consequence. Acting on the principles he has laid down, and believing the fever in question of foreign origin, and of a contagious nature, what are the measures pursued when it appears in any particular district or town? A cordon is instantly established, the inhabitants are shut up, all communication cut off, and those that are not fortunate enough to escape before alarm is excited, in all probability fall victims to the disease. Fortunately for us in Gibraltar, we have the means of escape in our hands; and a removal to the Neutral Ground, Europa Flats, Wind-Mill Hill, or the Bay, insures safety; but this is not the case in Cadiz, and many other large towns. There the inhabitants must patiently wait their fate, like people in a house on fire, with the doors and windows shut to prevent their getting out.

That the fever in question may have been introduced, I do not deny; but certainly we have no proof that it was so; and I think any one who dispassionately considers the facts which I have adduced, will agree that it was not contagious. From the warmth and strong feeling, however, in which opposite parties have

indulged in discussing this question, a degree of discredit attaches itself to whatever is advanced ; and it cannot be denied it is difficult at times to arrive at the truth. For example, the contagionist tells us Gibraltar is one of the cleanest towns in Europe, Bath not excepted, and that there are no beggars in the place ; while the advocate for local origin, on the contrary, describes it as abominably filthy, abounding in all manner of villanous smells, and with an over-crowded pauper population. Now the truth is, both these statements are partially correct ; but the facts have not been fairly stated. As far as the streets and exterior of the houses are concerned, Gibraltar is clean and beautiful, without filth or beggars ; but when we examine the interior of their houses, a scene of a very different nature presents itself ; filth, wretchedness, and poverty are apparent at every step ; and at the breaking out of the epidemic, in no town in Great Britain was there a greater proportion of poor than in Gibraltar. Matters are now perhaps better ; but still there is a fair proportion of poor people who live entirely by charity ; and the houses of this class are extremely dirty and ill-ventilated. Independently of this state of things being favourable to the developement of fever, the frequent occurrence of fevers so exactly resembling the late epidemic as not to be distinguished from it, is strongly corroborative of its local origin. These fevers occur at all seasons of the year ; and although nice discriminators pretend to distinguish between them and the epidemic form of the disease, for my own part, I can see no difference. The leading and pathognomonic symptoms, as well as the necroscopic appearances, are the same ; and, as far as I have observed, they have been equally fatal. Yet no one has ever dreamed of referring them to a foreign source, far less considering them contagious ; and, in my opinion, it only requires a more general and more diffused operation of the cause giving rise to them, to produce the epidemic form of fever.

In commenting on Sir William Pym's answers, I have adhered to facts, and in almost every instance drawn my deductions from documentary evidence. The correspondence of the late Dr Hennen, which I have quoted, is particularly valuable, as it throws considerable light on the views entertained by that accurate and acute observer on the origin and nature of the late epidemic ; and had he lived, many facts would have been elicited, which power, interest, and preconceived opinions now endeavour to conceal or envelope in obscurity. Before his time, as I have already mentioned (page 40,) the medical man who dared to assert, that intermittent or even remittent fevers were of indigenous growth in Gibraltar, was put down as a visionary, or one wishing to subvert the established order of things. The consequence has been, that this class of diseases seldom appears on the face of any return in the principal medical officer's office. He, however, investigated facts for himself, unbiassed by theory, unfettered by party ; and we have the result of his labours communicated to us in his *Medical Topography*.—Yet, in opposition to the opi-

nions therein given, Sir William Pym persists in the contrary ; and in his answer to 10th query, states, in the most unqualified manner, that remittents are of rare occurrence, and intermittents never known in Gibraltar. As well might Sir William tell the people in England that it never rains in Gibraltar, or that the sun never shines. The fact is, remittents are not unfrequent here, neither are intermittents. The year 1829 was prolific in this last class ; and I have this year seen several cases of the former in its most aggravated form. In the 53d Regiment, quartered at Wind-Mill Hill, four cases of genuine ague have already occurred, three in men, and one in a woman, none of whom had been outside the gates of the garrison since they arrived in November last. One has also taken place in the 94th Regiment.

In conclusion, I take leave to express a hope that Sir William Pym will, as soon as his avocations permit, favour the world with a full account of the late epidemic.

ART. III.—*A descriptive account of Frambæsia or Yaws.*
By DAVID MASON, M. R. C. S. L.

THIS disease appears to be indigenous to Africa. The inhabitants of Guinea and the warmer regions of that continent seldom fail to have the disease at some period of life,—most commonly in childhood or youth. Hilary says it is also indigenous to Arabia ; but is not described by any of the Greek or Arabian physicians, except Abbas, who calls it *lepra*. The 13th chapter of Leviticus has been quoted to prove that this disease is the leprosy of the Jews ; but the vague and ill-defined description of the symptoms there given, leave it doubtful what particular disease they were meant to characterize, or whether they do not apply to several distinct diseases that were considered unclean. The appearance of white hairs in the tubercle or rising, which is noticed as one diagnostic symptom of the Mosaic disease, does not occur in yaws,—at least among the African race, so far as my own observations extend ; and, as the contrary has been particularly stated by several writers on yaws, I have been the more attentive to observe the circumstance, but have never been able to perceive any change from the natural black colour of the hair, although the yaw tubercles are commonly found in the arm-pits and various other places covered with hair. Sauvages describes two species of the disease, the first of which he names *Frambæsia Guineensis*, denominated by the Africans *yaw*, signifying the strawberry, from the striking resemblance of the diagnostic tubercles to that fruit. The second species, according to that nosologist, is the *Frambæsia Americana*, and which is called *Pian* by the American natives,