

A brief view of the yellow fever, as it appeared in Andalusia during the epidemic of 1820.

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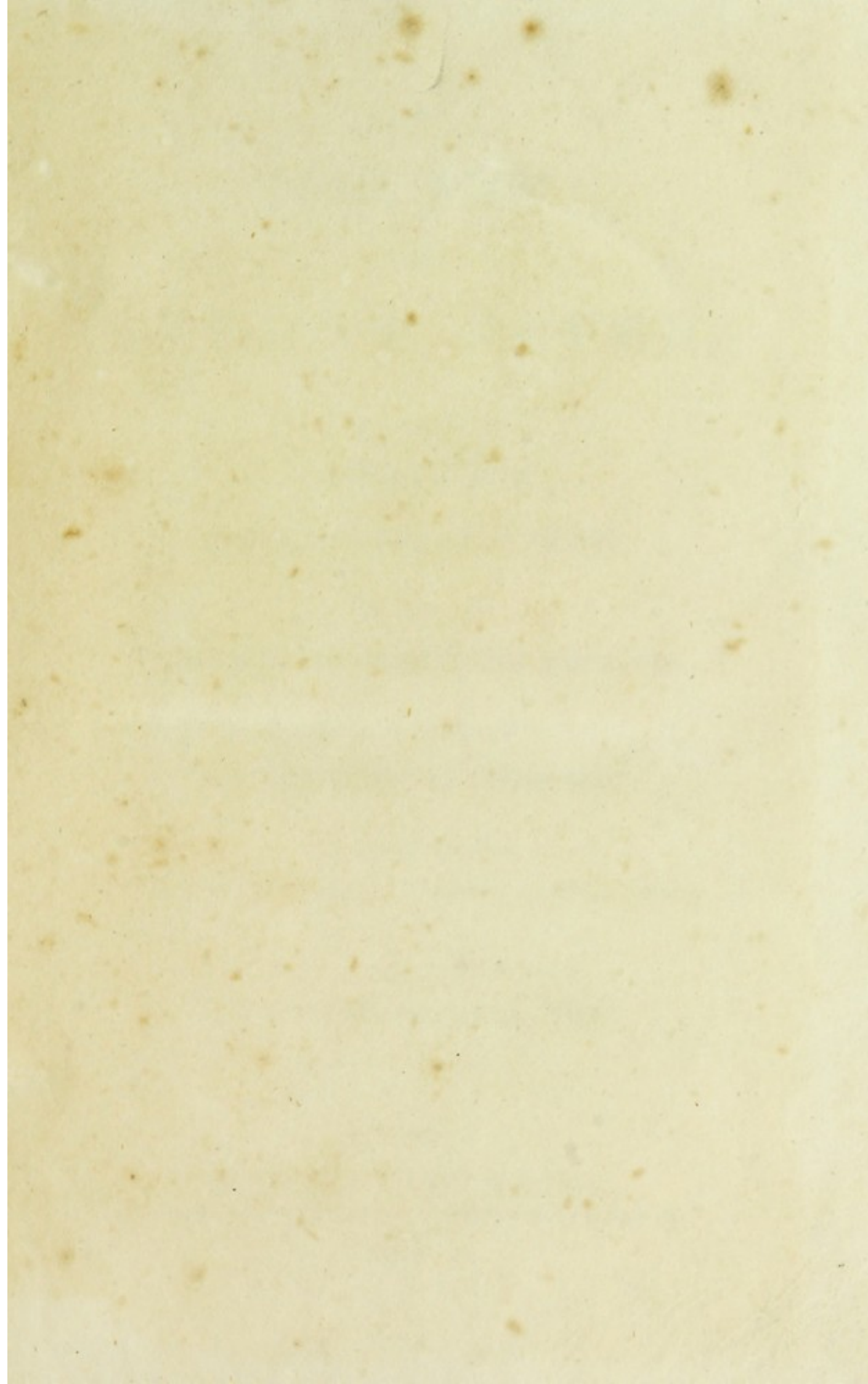
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THE HISTORY OF THE
YELLOWS RIVER

DURING THE RECENT YEARS

THE WORK OF SETTLEMENT

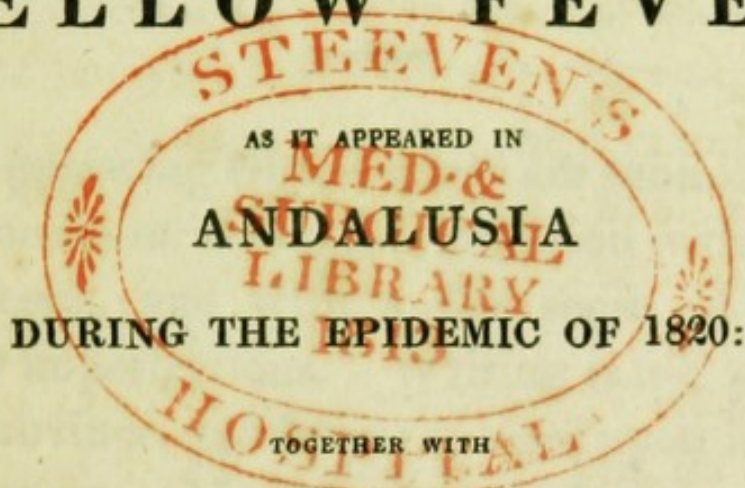
IN BRITAIN AND IRELAND

A NEW EDITION

BY THE AUTHOR

LONDON: PUBLISHED BY
RICHARD CLAY AND COMPANY, LTD.

A
BRIEF VIEW
OF THE
YELLOW FEVER,



THE MODE OF TREATMENT ADOPTED,
AND AN ACCOUNT OF
The Appearances on Dissection.

TO WHICH IS PREFIXED,
A SHORT TOPOGRAPHICAL SKETCH OF THE COUNTRY.

BY THO' O'HALLORAN, ESQ.

LONDON:
PRINTED FOR BURGESS AND HILL,
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1821.

BRIEF VIEW
OF THE
PREFACE
YELLOW FEVER

The following observations are submitted to the consideration of the public, and are the result of a long and laborious study of the subject, during the prevalence of 1850. My province is a tropical one, and it is with reluctance that I venture to offer any views on the mode of treatment adopted, and to give a brief account of the yellow fever and an account of the progress of the disease in this country. It is not my intention to discuss the merits of the various systems of treatment, but to point out the errors which have been committed, and to suggest such measures as may be necessary to prevent the recurrence of the disease. There is one great desideratum in the management of this formidable epidemic, which is, to prevent its extension to other parts of the country. It is therefore necessary to take the most effectual measures to prevent its communication to other parts of the country. It is also necessary to take the most effectual measures to prevent its communication to other parts of the country. It is also necessary to take the most effectual measures to prevent its communication to other parts of the country.

PREFACE.

THE following Observations are submitted to the consideration of the Profession with great deference, and with a due sense of their many imperfections. Writing is not within my province, and I have entered upon it with reluctance. My principal, indeed my only aim, has been to give a brief account of the **YELLOW FEVER** as it appeared in the South of Spain in the year 1820; and I am conscious that this work possesses no other merit than that of exhibiting a true and faithful history of the disease.

There is one great disadvantage, under which every practitioner labours, in the management of this formidable epidemic. *Pharmacy* is at a very low ebb in all the Spanish provinces: Chemistry is there known only by name; and the shops of the Apothecaries are so ill supplied, that the practitioner can seldom range beyond

the limits which the reader will find observed in the treatment of the cases annexed.

Independently of the privations arising from poverty, the Spaniards evince an extraordinary disregard of the *comforts* of life. Of its luxuries (except amongst the very highest classes) they have no idea. They drag on a slovenly wretched existence that would be intolerable to the British; or, indeed, to any other people that I have ever known.

The warm bath, a remedy of inestimable value in yellow fever, is always procured with difficulty, and, in general, is not to be had at all. In nine tenths of the cases that fell under my care, I had to lament the absence of this powerful *adjumentum*; and, on the whole, it may be said that the aids which the infected town afforded towards the subjection of the disease, were by no means adequate to the occasions.

The beneficial effects that resulted from an extensive use of the lancet, afford a

convincing proof of the utility of blood-letting in the commencement of yellow fever: and it is a remedy which I should not hesitate to repeat, and have frequent recourse to, during the first days of the attack. How far the practice might be judicious after that period, and when the debility becomes great, I am not prepared to say, having never ventured to try it: but should any future practitioner feel disposed to make the attempt, he may derive encouragement from reflecting, that no experiment, however hazardous, can be attended with more fatal consequences than those which usually follow from every mode of treatment hitherto adopted.

It will appear, by reference to the annexed Cases, that those terminated most favourably in which blood-letting was used to the greatest extent; but it is incumbent on me to state, that many cases ended fatally even when the lancet had every possible advantage. The Spanish physicians were no advocates for the practice in any case. My treatment of the disease was not very successful:—theirs still less so. I lost one

patient out of every five and a half; they, one out of every two and a half; so that, in fact, neither of us had much to boast of. I have observed (and it is important I should mention it), that in all cases, in which the employment of mercury was followed by *salivation*, the patients recovered. This was the result, without a single exception, throughout the whole period of the epidemic; and so perfectly am I assured of the fact, that I would set down the recovery of any patient as certain, who should be once affected to salivation. I insist upon the state of ptyalism; because I have seen many instances in which the mouth and gums became sore and ulcerated without any salivary discharge, and in which the patients did not recover.

I have prefixed a short topographical sketch of Andalusia, which, to some readers, may prove not the least acceptable part of the work.

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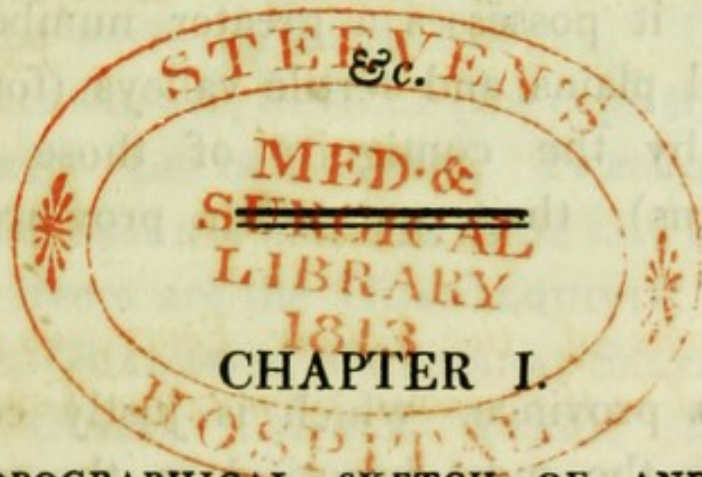
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REMARKS,



A TOPOGRAPHICAL SKETCH OF ANDALUSIA.
SITUATION, SOIL, AND CLIMATE. MANNERS
AND CUSTOMS OF ITS INHABITANTS.

ANDALUSIA, the most southern province of SPAIN, lies on the coasts of the MEDITERRANEAN and ATLANTIC, at the juncture of the two seas. It forms an oblong, irregular quadrangle of eighty-seven leagues, in length, from *east* to *west*; and about forty, in breadth, from *north* to *south*. The boundaries are,—PORTUGAL on the *west*—ESTRAMADURA and OLD CASTILE on the *north*—MURCIA on the *east*—and the MEDITERRANEAN and ATLANTIC on the *east*, *south-east*, *south*, and *south-west*. It is

likewise bounded by lofty mountains, which separate it from the adjacent provinces, and intersect it in various directions: but, although the principal part be mountainous, it possesses a greater number of beautiful plains and fertile valleys (formed chiefly by the contiguity of those very mountains), than any other province in SPAIN.

This province, which is justly considered as the most beautiful in the whole country, was formerly divided, by the MOORS, into four kingdoms, viz. JAEN, CORDOVA, GRANADA, and SEVILLE: but as the observations which I shall have occasion to make, will apply principally, if not solely, to the province of SEVILLE, I shall take a particular view of the local situation of that district, and of the manners and customs of its inhabitants.

SEVILLE occupies the western extremity of ANDALUSIA. Its figure is irregular, measuring fifty leagues from *east* to *west*, and twenty-five from *north* to *south*. It is bounded on the *east* by the province of

CORDOVA;—on the *east* and *south-east* by that of GRANADA;—on the *south* by the ATLANTIC and Straits of GIBRALTAR;—on the *west* by the kingdom of ALGARVE, and on the *north* by ESTRAMADURA. The principal towns are, SEVILLE (the capital), CADIZ, PUERTO SANTA MARIA, PUERTO REAL, ECIJA, OSSUNA, and XEREZ DE LA FRONTERA. The rivers are the GUADALQUIVIR, GUADALETE, GUADAYRA, GUADIANA, SALTES, TINTO, ODIEL, CHANCA VERDE, BARBATE, XENIL, LAS FEGIEAS, CAMDON, and SAN PEDRO. The river *Tinto*, which derives its name from the yellow colour of its waters, rises in the SIERRA MORENA MOUNTAINS, and empties itself into the Mediterranean near HUELVA. It possesses properties of a very extraordinary nature; petrifying and hardening sand, and cementing, in less than one year, all those stones which happen to come in contact with one another. It causes plants and roots of trees, when immersed into it, to wither; and changes their colour to yellow. No verdure is seen on its banks. No fish can live in its stream. If given to cattle, it destroys worms; but no animals, except goats, appear to relish its flavour.

The principal mountains are—the SIERRA LEYTA, SIERRA DE RONDA, and SIERRA DE CONSTANTINA. This district, abounding with the most picturesque plains and valleys, is the most fertile and beautiful part of all the province. That portion of it which is encompassed by the GUADALQUIVIR and RONDA mountains, constitutes an irregular oblong plain intersected by small hills, or eminences, scarcely elevated above the level of the sea and river; while various parts of the plain, between *Seville* and *San Lucar* on the one side, and *Arcos* and *Puerto Real* on the other, are extensively inundated, after heavy rain, by the overflowing of the GUADALQUIVIR on the left, the GUADALETE on the right, and by numerous mountain streams which contribute their mite to swell the periodical torrents of the year.

The most extensive plain in the district of ANDALUSIA, at present under consideration, or probably in all the province, is that which extends from CHICLANA, PUERTO REAL, and PUERTO SANTA MARIA, along the banks of the GUADALETE, approximating the town of XERES at the point

on which the Carthusian convent stands—extending through the country for sixteen or seventeen miles, and finally uniting by a semicircular course with the GUADALQUIVIR. This plain, which is bare of wood, is usually inundated during the prevalence of the heavy rains of winter and of spring; and is not entirely dry even in the hottest weather*. At the extremity of this flat, and not far from SAN LUCAR, a river takes its rise; runs a circuitous course through some of the most enchanting valleys that are to be found probably in all Europe, and empties itself into the GUADALETE, at a place called PORTAL, close to the Carthusian convent. It would seem, from a minute examination of the bed of this river, which is partly dry in summer, that a communication by canal was kept up, in days of yore, between the GUADALQUIVIR and GUADALETE; the bed of a canal, pretty similar to what we see in modern days, being easily traced throughout its whole

* That part which is adjacent to the Carthusian convent is memorable for the defeat of the Spanish army, in the year 711, under the command of Don Roderigo the last of the Gothic kings in Spain.

length. It is to the country watered by this river, which for the most part is inundated during the winter months, that the ancients are supposed, by some, to have given the name of the Elysian Fields; while the river which runs nearly at a right angle with the former, was called the GUADALETE or river of *Oblivion* *. It is not, perhaps, surprising that the country in the *vicinity* of those rivers should have been denominated the “fields of bliss;” but how a muddy river, bounded on both sides by swamps of considerable extent, from PUERTO SANTA MARIA to the mountains near ARCOS, and without a single tree to embellish its banks, could have been taken for the celebrated river LETHE, I am at a loss to conceive.

I have already mentioned that the river which runs through this beautiful country, takes its origin from the GUADALQUIVIR

* I know not whether the LETHE of Africa has any stronger claims upon credulity; but certainly nothing less than the undiminished efficacy of the water itself could satisfy an observer, as to the pretensions of the Guadalete; and I do not know that its oblivious effects have, hitherto, been acknowledged or felt by any traveller.

at the termination of the flat just now described, and runs in an opposite direction, so as to form a semicircle, and to encompass, together with the swampy country, that beautiful and extensive plain, at the southern elevated extremity of which the town of Xerez stands. This town is situated at a distance of three leagues from SAN LUCAR, two from PUERTO SANTA MARIA, two and a half from PUERTO REAL, five from LEBRIXA, five from MEDINA SIDONIA, four from CADIZ, fifteen from SEVILLE, five from ARCOS, four from CHICLANA, three from the ISLA, three from ROTTA, and twenty from CORDOVA.

XEREZ DE LA FRONTERA commands an extensive and charming view of the GUADALETE, the Carthusian convent, the whole of what are called the Elysian Fields, the towns of ARCOS and MEDINA SIDONIA, and the neighbouring mountains; and, by ascending a small eminence at the north-west extremity, the beautiful country in the neighbourhood of SAN LUCAR, the GUADALQUIVIR river, and the greater part of the flats in the direction of SEVILLE. From the foregoing view it will

appear that the town of Xerez (though the neighbouring country be beautiful) is nearly surrounded, during the prevalence of heavy rains, by swamps, the smallest of which is close to the town, and the greatest at a distance of about three miles. To the local situation of Xerez the number of *intermittents* and *remittents* which annually attack the inhabitants, may, in a great measure, be ascribed. They are exceedingly difficult of management, and not unfrequently fatal in their termination. The country on the north and north-east sides of the town, is quite flat—that on the north-west, hilly. The soil in the neighbourhood is sandy; but, by the help of manure, which is purchased at a trifling expense, it produces vegetables of every kind in great abundance. The soil of the interior, particularly on the eminences, is composed of common clay and chalk, intermixed in different proportions according to the degree of elevation. It is on the elevated grounds that the vine which is most suitable for the making of sherry wines, is planted. The goodness of the vineyard is supposed to depend, in a great measure, upon the quality of the soil; and

the hills are preferred, because there a greater quantity of chalk is found contiguous to the surface, than elsewhere.

Xerez, which occupies a space of three miles in circumference, and contains a population of forty thousand souls, was formerly a Moorish town of considerable note: it was surrounded by a strong and lofty wall, celebrated for its four gates, two of which, with about a third of the wall, are still in a state of tolerable preservation. Part of the wall, at the eastern extremity, has been taken away for the extension of the town, which originally was not more than one fourth of its present size. The interior of Xerez little corresponds with the beauty of the surrounding country. It has, indeed, a few broad and tolerably well paved streets, and some high and well-ventilated houses, in the centre of the town; but in other parts, with the exception of two small squares, the houses are ill constructed, the streets narrow, and either badly paved or not at all. But the worst is, that the streets in general, throughout their whole length, are covered in the centre with filth and

ordure of all hues, collected from every house, so that passengers have only a narrow foot-way upon which they can walk with cleanliness or safety. Pools of black, stinking, stagnant water appear on the different streets, with few exceptions; and the intermediate spaces are covered with solid filth, which, when disturbed by the wheel of a carriage, or any other accidental occurrence, emits a stench that is absolutely intolerable to persons unaccustomed to it, not merely disgusting the sense, but, in many instances, actually turning the stomach. This loathsome condition of the town is, of course, ascribable to scarcity of sewers or drains to carry off the impurities which are daily and hourly thrown into the streets, where they are allowed to remain a perpetual memorial of the filthiness of the inhabitants. Some of the streets in the suburbs, where the poorer classes dwell, are dirty beyond description: a horse will sink to the knees in one of them, while the foot-passenger makes a perilous progress by pathways so narrow as scarcely to permit two abreast. The houses are low, crowded, ill ventilated, and commonly dirty within. The fronts are usually long; and a

door in the centre serves for the entrance into the house, and to a square yard, or court, which is generally formed in the rear, by the junction of four different dwellings, the abodes of several families. The houses here being, in general, but one story high, become insufferable from the direct application of a burning sun during the summer and autumnal months. The tiles, with which the roofs are covered, are heated to such a degree, as to make the inside a perfect oven, not inhabitable by persons unaccustomed to such exhausting and sickening heat. It often happens in these squares, that every room is the abode of a separate family; a solitary door giving ventilation and light to one or more apartments in which the several miserable objects are crowded together, with scarcely any accommodation except the mantas or rugs which they spread on the bare ground, and upon which they lie. Those ill of fever, or other disease, are placed in the corner of the room, whilst the rest occupy the other parts of the same chamber, for days and nights, without the slightest repugnance or apprehension of danger.

It is under circumstances such as I now describe, where ten or fifteen persons occupy the same ill-ventilated room, that disease commits its most terrible ravages; few, in such cases, escaping with life, when seriously attacked.

The dress of the Spaniard, the native of this province, consists of breeches, leather gaiters, short jacket, loose great coat, slouched hat, and the manta or rug which is occasionally used as an outward covering. All these are of the coarsest materials; and as cleanliness of person is not much valued, and but little attended to (a clean shirt excepted), the clothes are rarely changed, or seldom even taken off, except to diminish the number of vermin with which the poorer classes swarm. They are, however, better clothed than the lower orders of most other countries; and there is beside an uniformity in their costume, which is extremely imposing to strangers, who imagine, at first sight, that in neatness of person, as well as dignity of mien, they exceed all other Europeans. But it is not so in fact; for, notwithstanding the portly demeanour and ma-

jestic gait of the best-sized, and, probably, the finest shaped men in the world, their persons are neglected to a disgraceful and deplorable degree. It is not, indeed, uncommon to see the women picking out the vermin from each other's hair, and from that of their male friends, at the street-doors, even in the most public parts of the town; and, afterwards, without any ablution whatever, sitting down in groups to partake of their common fare, which is rapidly consumed, all eating from the same dish, without spoon, knife or fork, the fingers being the only instruments employed for the purpose.

The higher ranks, however, are sufficiently attentive to cleanliness, and elegant in their mode of living. They seldom entertain; but, when they do, their hospitality is distinguished by *services* of the most sumptuous and luxurious kind. In the society of strangers, or equals, they are frank, easy, and agreeable in their manners; but to their inferiors they are proud, pompous, and overbearing. They have too high an opinion of themselves to be easily irritated;

but when once roused, their anger is marked by an extraordinary vehemence of manner. All classes of Spaniards, indeed, are proverbially haughty and passionate; and, though not easily excited, yet, when once roused, neither force of argument nor fear of punishment can deter them from the commission of the most sanguinary and atrocious acts. They never forget, and rarely forgive, injuries or insults, whether real or imaginary, offered either to themselves or their female associates. No demand is made of satisfaction; but revenge is instantly determined upon by the cold-blooded assassin, who, relying on the Church as the asylum of murder, waylays the unsuspecting and probably innocent victim of his hatred or suspicion, and plunges a knife into his body. He then hastens to that altar which his very presence is calculated to pollute, and there, without trial or atonement, expiates his crime by an audacious avowal of it. On the following day, the miscreant may be seen walking through the streets, while thousands, who were supposed to have offered the slightest indignity to the Church, or who were even suspected

of harbouring principles different from those of the bigoted, inquisitorial crew, who preside over it*, would be irretrievably lost in the horrors of a dungeon. It is to be hoped that the same power that demolished the Inquisition will take some effectual steps to abolish this monstrous abuse, now almost the sole remnant of its detestable influence.

No people on earth are so jealous of the encroachment of foreigners as the Spaniards. With something more than Scottish nationality, they fancy themselves, and every thing connected with themselves, the best; nor can they endure the idea of being dictated to upon any subject whatever. Pleasure, *if purchasable at a trifling rate*, is eagerly pursued; a circumstance which is attributable rather to their poverty than their morals. Bull-fighting is still their principal sport; and thousands of all ages, and both sexes, assemble at the amphitheatres on the days appointed for this indecent and barbarous exhibition. Next to bull-fighting,—gaming, dancing, and gallantry, are the

* I speak of the times previous to the Constitution.

amusements that occupy all the moments that can be spared from the pursuits of business. They are indeed more addicted to intrigue than any other people in Europe: nor is this wonderful; for, independently of the heat of the climate, and of the idleness to which it gives birth, the women in this part of Andalusia (particularly those of Cadiz) are captivating beyond description. They are lively and amiable;—uniting beauty and grace with a manner so inviting, that even the most wary cannot escape from their toils. They are rather low in stature, but exquisitely formed: the feet are short, the instep high, and the ankle small. The contour of the leg and thigh is admirable. As the knee is scarcely bent in walking*, the motion of progression is

* So high a value do the Spaniards set upon the graceful movements of their women, that all the female children are swathed so as to prevent the flexion of the knee; and a stiff joint, to a certain extent, is thus produced. In Britain, where the men are not such connoisseurs, little attention is given to the subject, and the consequence is, a shuffling, shambling, awkward gait, which, when compared with the winning graces of the Spanish women, makes a very unfavourable impression upon the beholder. The progressive motion of our

made by the hip-joint; and grace, and elegance, and dignity, are the effect.

Few nations are more, or equally, temperate in eating and drinking. The better orders take one small cup of chocolate and toast for breakfast, at an early hour and in bed: their dinner, on ordinary occasions, consists of bread, various descriptions of salad, and the *olla*, which is a mixture of mutton, veal, or bacon, with garlic, chives, carrots, a kind of pea called carbanzes, kidney-beans, and vegetables of various sorts; all of which are boiled together to form one dish, called the *olla podrida*. At night they sup on the *gaspacho*, which consists of bread, vinegar, oil, salt, garlic, and love-apples; all which are mixed up, in summer with cold, and in winter with hot water. The poorer classes and workmen live miserably, at least in an Englishman's opinion. They eat merely to support nature, and feed ladies (who, to do them justice, are admirably shaped) is performed, almost exclusively, by the legs,—their knees, all the time, sticking together like a pair of sentinels in charge of a prisoner who was inclined to make off.

mostly on bread made into soup by the addition of water, garlic, oil, salt, and vinegar. Of this description of food they take three meals a day.

At certain periods of the year, those persons who are employed in profitable and laborious occupations, partake of the olla, but have no idea of any luxury beyond it. Still, notwithstanding their wretched mode of subsisting, and their inveterate habits of idleness at their own homes (from which dire necessity alone impels them to move), we find, that when engaged in agricultural work, cultivating the vineyards, &c. (for which they are most liberally paid), they are not surpassed in perseverance and bodily exertion by any people in Europe. They work with short instruments, so that the body is always bent forwards; and this position is seldom changed, even for a moment, from morning to night, except when the bell tolls for breakfast, dinner, or supper. They are all accommodated at night in a spacious empty house, in which a large fire is lighted in time of winter. It is not uncommon to

see three or four hundred labourers, the inhabitants of various and distant towns, thus working together in the same vineyard; and as they labour only for five days in the week, they return every Friday evening, or Saturday morning, to their respective homes, where with their families they enjoy their hardly earned gains until the returning Monday calls them again to the field.

The climate of Andalusia, although changeable at particular seasons of the year, may, on the whole, be considered salubrious. The rains which fall in the autumnal months, are abundant, and produce the most agreeable and delightful change in the atmosphere, as well as in the appearance of the face of the country, which, from being dry and parched, is quickly refreshed by the influence of moisture, and puts on the pleasing aspect of reviviscence. The months of May, June, July, August, and September, are particularly hot and dry; the rains rarely falling before the 10th of October. When they once commence, however, they are usually abundant, descending in torrents for days and even weeks together. These, which

are styled the "*first rains*," most commonly set in with an easterly wind, and are hailed by all ranks and descriptions, as the forerunners of a refreshed and refreshing season. This period may justly be called the SPRING of the south of SPAIN.

The "*first falls*," or those rains which take place in the months of October and November, are by far the heaviest, those appearing in March and April being comparatively light. The thermometer ranges during the wet season, or between the months of November and May, from 50 to 75, and in the hot months the average is from 73 to 82. The Levant winds are considered the most unhealthy—they are certainly the most unpleasant; producing great languor and lassitude even in persons of naturally strong constitutions; and, if they continue to blow for any length of time, are thought to predispose to, and even produce, fevers and other disorders. It has, moreover, been remarked by the inhabitants of the seaport towns in the south of Spain, that the yellow fever, or some other epide-

mic, has, of late years, almost invariably prevailed when excessive heat, produced by southerly or south-west breezes, succeeded an unusual prevalence of the Sirocco winds.

Date	Time of the Thermometer	Winds	Atmosphere
1820 Aug. 1.	0	S. W.	Clear
	12	W.	Idem.
	0	W. N. W.	Idem.
2.	0	W. S. W.	Clear
	12	W. N. W.	Idem.
	0	N. W.	Idem.
3.	0	N. E.	Clear
	12	W. N. W.	Idem.
	0	N. W.	Idem.
4.	0	W.	Clear
	12	S. W.	Idem.
	0	W. N. W.	Idem.
5.	0	S. W.	Clear
	12	W. S. W.	Idem.
	0	W.	Idem.
6.	0	W. S. W.	Clear
	12	W.	Idem.
	0	W. S. W.	Idem.
7.	0	W. N. W.	Clear
	12	S. W.	Idem.
	0	W. S. W.	Idem.
8.	0	W. N. W.	Clear
	12	W.	Idem.
	0	W. N. W.	Idem.

CHAPTER II.

METEOROLOGICAL OBSERVATIONS.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
1820. Aug. 1.	9	74 0	S. W.	Clear.
	12	76 0	W.	Idem.
	6	75 0	W. N. W.	Idem.
2.	9	75 0	W. S. W.	Clear.
	12	76 5	W. N. W.	Idem.
	6	77 0	N. W.	Idem.
3.	9	77 5	N. E.	Clear.
	12	79 0	W. N. W.	Idem.
	6	78 0	N. W.	Idem.
4.	9	77 0	W.	Clear.
	12	79 5	S. W.	Idem.
	6	78 5	W. N. W.	Idem.
5.	9	77 5	S. W.	Clear.
	12	79 0	W. S. W.	Idem.
	6	78 0	W.	Idem.
6.	9	78 0	W. S. W.	Clear.
	12	77 0	W.	Idem.
	6	78 0	W. S. W.	Idem.
7.	9	74 0	W. N. W.	Clear.
	12	77 5	S. W.	Idem.
	6	77 0	W. S. W.	Idem.
8.	9	78 0	E.	Clear.
	12	79 5	E.	Idem.
	6	79 0	W. N. W.	Idem.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Aug. 9.	9	76 0	W.	Clear.
	12	77 5	W.	Idem.
	6	77 0	W.	Idem.
10.	9	75 5	S. S. W.	Clear.
	12	77 5	N. W.	Idem.
	6	77 0	W. N. W.	Idem.
11.	9	79 0	E.	Heavy clouds.
	12	81 5	E.	Cloudy.
	6	80 5	E.	Bright.
12.	9	79 5	E.	Light clouds.
	12	84 0	E.	Idem.
	6	83 0	E.	Clear.
13.	9	80 5	E.	Clear.
	12	83 0	W. N. W.	Idem.
	6	82 0	N. W.	Idem.
14.	9	80 0	W.	Clear.
	12	79 5	W. S. W.	Idem.
	6	79 5	W.	Idem.
15.	9	77 0	W.	Clear.
	12	79 5	W. N. W.	Idem.
	6	79 0	N. W.	Idem.
16.	9	75 5	S. W.	Clear.
	12	79 5	W.	Idem.
	6	80 0	N. W.	Idem.
17.	9	76 0	S. S. W.	Clear.
	12	78 0	S. W.	Idem.
	6	77 5	W.	Idem.
18.	9	75 5	S. S. W.	Light clouds.
	12	77 5	S. W.	Clear.
	6	77 0	W. N. W.	Idem.

24 REMARKS ON THE YELLOW FEVER

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Aug. 19.	9	75 5	S. S. W.	Light clouds.
	12	77 5	S. W.	Clear.
	6	77 0	W. N. W.	Idem.
20.	9	73 5	S. S. W.	Light clouds.
	12	76 0	S. W.	Idem.
	6	74 5	W. S. W.	Idem.
21.	9	75 5	W. N. W.	Light clouds.
	12	76 5	N. W.	Clear.
	6	75 0	Idem.	Cloudy.
22.	9	73 5	N. W.	Heavy clouds.
	12	74 5	W.	Idem.
	6	74 5	W. N. W.	Clear.
23.	9	74 5	S. S. W.	Heavy clouds.
	12	74 0	S.	Cloudy.
	6	72 5	S. W.	Idem.
24.	9	73 5	N. W.	Clear.
	12	75 5	N. W.	Idem.
	6	74 5	W. N. W.	Idem.
25.	9	70 5	S. W.	Heavy clouds.
	12	74 5	W.	Bright.
	6	72 5	S. W.	Idem.
26.	9	78 0	S. W.	Idem.
	12	79 0	N. W.	Idem.
	6	79 0	N. W.	Idem.
27.	9	80 0	W. S. W.	Idem.
	12	80 0	W. S. W.	Idem.
	6	80 0	W. S. W.	Idem.
28.	9	80 0	W. S. W.	Clear.
	12	81 0	W.	Idem.
	6	80 0	W.	Idem.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Aug. 29.	9	74 0	W.	Clear.
	12	77 0	W.	Idem.
	6	80 0	W.	Idem.
30.	9	78 0	W.	Clear.
	12	78 0	W.	Idem.
	6	78 0	W.	Idem.
31.	9	77 0	W.	Clear.
	12	80 0	W.	Idem.
	6	80 0	W.	Idem.
Sept. 1.	9	79 5	W. S. W.	Clear.
	12	79 5	W.	Idem.
	6	79 5	W.	Idem.
2.	9	74 5	W.	Clear.
	12	76 5	W. N. W.	Idem.
	6	75 0	N. W.	Idem.
3.	9	74 0	W.	Clear.
	12	74 0	N. W.	Idem.
	6	75 5	W. N. W.	Idem.
4.	9	75 0	W.	Clear.
	12	77 0	W. N. W.	Idem.
	6	75 5	N. W.	Idem.
5.	9	75 0	W.	Clear.
	12	77 0	W. N. W.	Idem.
	6	75 5	N. W.	Idem.
6.	9	77 5	W.	Clear.
	12	77 0	W.	Idem.
	6	77 5	W.	Idem.
7.	9	78 5	W.	Clear.
	12	79 0	W.	Idem.
	6	77 0	W.	Idem.

20 REMARKS ON THE YELLOW FEVER

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Sept. 8.	9	78 5	W.	Clear.
	12	78 5	W.	Idem.
	6	79 5	W.	Idem.
9.	9	78 0	W.	Clear.
	12	78 0	W.	Idem.
	6	78 0	W.	Idem.
10.	9	77 0	W.	Clear.
	12	77 0	W.	Idem.
	6	80 0	W.	Idem.
11.	9	80 0	E.	Clear.
	12	80 0	E.	Idem.
	6	80 0	E.	Idem.
12.	9	80 0	E.	Clear.
	12	80 0	E.	Idem.
	6	80 5	E.	Idem.
13.	9	77 0	E.	Clear.
	12	80 5	E.	Idem.
	6	77 5	E.	Idem.
14.	9	78 0	E.	Light clouds.
	12	61 0	E.	Clear.
	6	79 0	E.	Idem.
15.	9	73 5	S. S. W.	Clear.
	12	76 5	W. S. W.	Idem.
	6	76 0	N. W.	Idem.
16.	9	73 0	S.	Hazy.
	12	76 0	S. W.	Bright.
	6	74 5	N. W.	Clear.
17.	9	72 5	S. W.	Clear.
	12	73 5	W. S. W.	Idem.
	6	74 5	S. W.	Idem.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Sept. 18.	9	73 0	S. W.	Clear.
	12	76 0	S. W.	Idem.
	6	75 0	S. W.	Idem.
19.	9	74 0	S. W.	Clear.
	12	75 0	S. W.	Light clouds.
	6	77 5	N. W.	Idem.
20.	9	74 0	S. S. W.	Light clouds.
	12	76 0	S. S. W.	Idem.
	6	75 0	W. S. W.	Clear.
21.	9	74 5	N. W.	Clear.
	12	76 0	W. N. W.	Idem.
	6	73 5	W.	Cloudy.
22.	9	71 0	S. W.	Clear.
	12	73 5	W. S. W.	Idem.
	6	74 0	W. N. W.	Idem.
23.	9	72 5	N. N. E.	Clear.
	12	76 0	W. S. W.	Idem.
	6	74 5	W. N. W.	Idem.
24.	9	73 5	N.	Clear.
	12	76 0	N. W.	Cloudy.
	6	76 5	N.	Idem.
25.	9	75 5	E.	Clear.
	12	78 0	E.	Idem.
	6	76 5	E.	Idem.
26.	9	75 0	E.	Clear.
	12	78 0	S.	Idem.
	6	73 5	S. S. W.	Idem.
27.	9	72 0	W.	Clear.
	12	76 5	S. W.	Idem.
	6	74 5	W. N. W.	Idem.

28 REMARKS ON THE YELLOW FEVER

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Sept. 28.	9	71 0	W. N. W.	Clear.
	12	72 5	W.	Idem.
	6	71 5	S. W.	Cloudy.
29.	9	69 0	N.	Clear.
	12	73 0	N.	Idem.
	6	72 5	E.	Idem.
30.	9	66 5	N.	Clear.
	12	71 0	N.	Idem.
	6	71 5	N.	Idem.
Oct. 1.	9	68 0	N.	Clear.
	12	72 0	N.	Idem.
	6	73 5	W. N. W.	Light clouds.
2.	9	68 5	S. W.	Clear.
	12	71 5	W. S. W.	Idem.
	6	79 5	S. W.	Idem.
3.	9	71 0	W.	Clear.
	12	72 5	W.	Cloudy.
	6	71 5	S. W.	Clear.
4.	9	72 5	E.	Clear.
	12	74 0	E.	Idem.
	6	73 0	E.	Cloudy.
5.	9	72 0	E.	Clear.
	12	74 5	E.	Idem.
	6	74 0	E.	Idem.
6.	9	66 5	N.	Clear.
	12	72 0	N.	Idem.
	6	74 0	N. E.	Cloudy.
7.	9	64 0	N.	Clear.
	12	70 5	N.	Idem.
	6	69 5	N. W.	Idem.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Oct. 8.	9	62 5	N. E.	Clear.
	12	64 5	S. S. W.	Idem.
	6	68 0	S. W.	Idem.
9.	9	65 0	E. N. E.	Light clouds.
	12	71 0	E.	Clear.
	6	70 5	N. W.	Idem.
10.	9	65 5	E. N. E.	Clear.
	12	70 0	N. W.	Light clouds.
	6	69 5	N. W.	Clear.
11.	9	68 5	N.	Heavy clouds.
	12	70 0	W.	Idem.
	6	67 5	S. S. E.	Cloudy.
12.	9	68 0	S.	Misty.
	12	68 5	S. S. W.	Idem with rain.
	6	66 5	S. S. W.	Cloudy.
13.	9	69 5	S.	Misty.
	12	70 0	S.	Idem with rain.
	6	68 5	W. S. W.	Cloudy.
14.	9	69 0	W.	Light clouds.
	12	71 0	S.	Idem.
	6	70 0	S. W.	Idem.
15.	9	69 5	W.	Heavy clouds.
	12	71 5	S.	Bright.
	6	69 0	S. S. W.	Light clouds.
16.	9	69 0	S.	Light clouds.
	12	71 0	S.	Cloudy.
	6	68 5	S. S. E.	Idem.
17.	9	68 5	S. S. E.	Cloudy.
	12	67 0	S. S. E.	Idem.
	6	67 0	S. S. E.	Idem.

80 REMARKS ON THE YELLOW FEVER

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Oct. 18.	9	68 0	S. S. W.	Clear.
	12	69 0	W.	Idem.
	6	70 0	W.	Idem.
19.	9	69 0	S.	Bright.
	12	71 5	S. W.	Cloudy.
	6	69 5	S. W.	Clear.
20.	9	68 5	N. W.	Cloudy.
	12	67 5	N. W.	Heavy clouds.
	6	69 0	N. W.	Idem.
21.	9	64 0	N. W.	Clear.
	12	67 0	N. W.	Idem.
	6	66 0	N. W.	Idem.
22.	9	64 5	N.	Clear.
	12	66 0	N. W.	Idem.
	6	67 0	N. W.	Idem.
23.	9	63 5	N. N. W.	Mist with rain.
	12	66 5	N. W.	Cloudy.
	6	64 0	N. W.	Clear.
24.	9	57 5	N.	Clear.
	12	65 5	N. W.	Idem.
	6	64 0	N. W.	Light clouds.
25.	9	67 0	W.	Cloudy.
	12	68 0	W. N. W.	Idem.
	6	65 0	W.	Idem.
26.	9	65 5	S. W.	—
	12	66 5	S. W.	Clouds and mist.
	6	65 0	S. W.	Idem.
27.	9	66 0	N. W.	Light clouds.
	12	67 0	N. W.	Idem.
	6	66 5	N. W.	Bright.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Oct. 28.	9	65 0	W.	Cloudy.
	12	67 0	S.	Heavy clouds.
	6	66 0	S. W.	Clouds and rain.
29.	9	66 0	N. W.	Clear.
	12	67 0	N. W.	Idem.
	6	68 0	N. W.	Idem.
30.	9	57 5	N. N. W.	Clear.
	12	64 0	N. W.	Idem.
	6	63 5	N. W.	Idem.
31.	9	58 0	N.	Clear.
	12	63 5	W. N. W.	Hazy.
	6	61 5	W. N. W.	Light clouds.
Nov. 1.	9	63 0	N. W.	Hazy.
	12	63 5	N. W.	Cloudy.
	6	63 0	N. W.	Idem.
2.	9	63 0	S. W.	Mist with rain.
	12	63 5	S. W.	Idem.
	6	63 0	S. W.	Idem.
3.	9	66 0	W.	Thick clouds.
	12	67 0	W.	Idem.
	6	65 5	W. N. W	Bright.
4.	9	62 5	N.	Clear.
	12	65 5	W. N. W.	Idem.
	6	65 0	N. W.	Idem.
5.	9	61 0	W.	Clear.
	12	65 5	W. N. W.	Idem.
	6	65 0	W. N. W.	Light clouds.
6.	9	63 5	N. W.	Clouds and rain.
	12	65 0	N. W.	Bright.
	6	64 0	N. W.	Idem.

32 REMARKS ON THE YELLOW FEVER

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Nov. 7.	9	58 5	N. N. W.	Clear.
	12	62 0	N. W.	Idem.
	6	61 5	N. W.	Hazy.
8.	9	58 0	N.	Clear.
	12	64 0	N.	Idem.
	6	62 0	N.	Idem.
9.	9	57 5	W.	Clear.
	12	63 0	W.	Idem.
	6	62 0	W. N. W.	Idem.
10.	9	62 5	N. W.	Clouds and rain.
	12	63 5	W.	Cloudy.
	6	62 0	W.	Bright.
11.	9	61 5	N. W.	Clear.
	12	64 0	N. W.	Idem.
	6	62 0	W. N. W.	Idem.
12.	9	60 0	N. W.	Light clouds.
	12	61 5	N. W.	Clear.
	6	60 5	W.	Idem.
13.	9	59 5	W.	Light clouds.
	12	62 5	N.	Clear.
	6	62 0	N. W.	Idem.
14.	9	55 5	N. E.	Clear.
	12	63 0	W.	Idem.
	6	61 0	N. W.	Idem.
15.	9	59 0	E.	Heavy clouds.
	12	63 0	E. S. E.	Idem.
	6	60 5	S. S. E.	Clouds and rain.
16.	9	62 0	W.	Mist and rain.
	12	62 5	N. W.	Idem.
	6	58 0	N. W.	Idem.

Date.	Hours of the Day.	Thermometer.	Winds.	Atmosphere.
Nov. 17.	9	50 5	N.	Clear.
	12	57 5	N.	Idem.
	6	55 5	N.	Idem.
18.	9	51 0	N.	Clear.
	12	57 5	N.	Idem.
	6	54 0	N.	Idem.
19.	9	50 0	N.	Clear.
	12	57 0	N.	Idem.
	6	53 0	W.	Idem.
20.	9	51 0	N.	Clear.
	12	58 5	E.	Idem.
	6	57 0	E.	Idem.
21.	9	57 0	E.	Clear.
	12	57 0	E.	Idem.
	6	58 0	E.	Idem.
22.	9	54 5	N. N. E.	Clear.
	12	50 0	E.	Idem.
	6	58 0	E.	Idem.
23.	9	57 0	E.	Clear.
	12	60 0	E.	Idem.
	6	58 5	E.	Idem.
24.	9	58 5	E.	Cloudy.
	12	60 0	E. S. E.	Idem.
	6	59 0	N. W.	Idem.
25.	9	53 0	N.	Clear.
	12	58 5	N. W.	Idem.
	6	57 0	N. W.	Idem.

CHAPTER III.

OBSERVATIONS ON CONTAGION, &c.

THERE is no subject, perhaps, upon which a greater diversity of opinion has prevailed than that of the contagious or non-contagious properties of Yellow Fever: and it is quite clear that the same diversity must continue to prevail so long as we are unable to reconcile our prejudices with the facts which occur to observation, in the course of medical practice. The Spanish physicians, until very lately, were, to a man, impressed with a belief that the yellow fever was contagious in the most unlimited sense of the word; that it was communicable by the touch, or actual contact with the diseased body, or by breathing the air of the room in which that body lay; that the clothes or bedding of the sick, or any thing that had touched them, were a sure and infallible medium for the conveyance of the contagious principle (whatever it was); and that no matter to what distant region or climate these infect-

ed materials might be transplanted, the latent virus would there spring up and flourish in all its native and original malignity.

Long experience and extensive observation convince me that no opinion can be more erroneous than this. It is true, that, for some years past, the Spanish physicians themselves have been shaken in their faith upon this subject; and some of them, in their writings, have even admitted doubts as to the probability that the disease called yellow fever can be communicated by intercourse between the healthy and the sick *in atmospheres not epidemical*. This admission, although extorted from them by unanswerable facts, is made with reluctance; for, whatever their books may contain, they still think, speak, and act, with all their original prepossessions to the contrary; and demonstrate by their practice, that the opinions they have *published* are entirely at variance with those they have *suppressed*, and which they still permit to regulate all their movements in the management of this disease.

If the occasional desolation of those countries in which yellow fever is epidemical, were to be received as proof, there could be no doubt that the disease is contagious in a high degree: but I am well convinced that such a mode of reasoning would be quite fallacious; that the yellow fever cannot be communicated by actual contact, or conveyed through any positive medium; that it cannot propagate in *atmospheres not epidemical*; and that if it were possible in one hour to remove an hospital, filled with patients labouring under the worst forms of this disease, from *Seville* to *London*, not a single individual of these countries would be affected by the importation.

It is a fact, ascertained beyond dispute, that there are certain climates in which venomous reptiles cannot live. Ireland, for instance, is supposed, and with good reason, to be peculiarly blessed in this respect; and though it may be as impossible to account for the one phenomenon as the other, I am perfectly satisfied that the yellow fever could no more exist in this country than those rep-

tiles could, to which I have alluded in illustration of the fact.

If the imaginary case, relative to the importation of persons labouring under yellow fever, which I have put for the sake of argument, were realized, it is, to be sure, impossible to say how far the *sick* might be affected by the change of climate and situation; but I believe, that even if those who should happen to be in attendance upon them should, from *fear*, or any other predisposing cause, be attacked by fever, it would be strictly the fever common to these countries, and not marked by any of the characteristics which distinguish the febrile diseases of less favoured climes.

Notwithstanding the precautionary measures resorted to, to prevent the importation of yellow fever, it is absurd to suppose (considering the constant intercourse between these countries, Spain, America, and the West Indies), that we should not long since have been visited by it, if it were possible that it could be propagated through any medium whatever. The advocates for

contagion contend, that clothes, once infected and not subsequently purified, will retain the noxious matter for an indefinite time: now, admitting this to be the case, is it conceivable that we could have escaped this contagion? Is it to be believed, that of all the infected materials of Spain, America, and the West Indies, no part ever reached Great Britain? Thousands and tens of thousands who had suffered from yellow fever in those countries, afterwards reached this in safety and in health; and is it to be presumed, that, of all these, not one ever brought with him a coat, waistcoat, or any other part of dress or covering that had passed the ordeal of contagion through every stage and form of the disease? I shall leave it to time (the sovereign arbiter of disputed points) to answer these questions. At present I believe it would be impossible to adduce facts either to prove or disprove the truth of my opinions: but, although it may not be in my power to demonstrate, to the mathematically sceptical, that the yellow fever could not exist in the atmosphere of England, or its principle be conveyed thither through any medium whatever, still I think

I shall be able to show, by *cases* which occurred for the most part under my own observation, that it is not a contagious disease even upon what may be considered its own soil; or, in other words, that it cannot be communicated by *clothes, contact, or near approach.*

The remark, that "man is the same every where," is applicable to fever: and as, in the one case, it was never meant that each individual resembled his fellow man in every minute ramification of virtue and of vice; so, in the other, it is not contended that the characteristics, or accompanying symptoms of fever, are always alike, though the disease, subject to modifications, is every where the same. With regard to the causes which are supposed to produce it, it has been usual, amongst authors, to divide them into *remote* and *proximate*, and they may perhaps be justifiable in presuming to determine upon the latter; but I have always thought, that, in alluding to the former, they were partly in error. A peculiar state of the atmosphere is the *only* remote cause upon which even conjecture can venture to

form an idea touching the subject; for, however humiliating the confession may be, we must admit, that beyond conjecture we can know nothing.

That those persons who are engaged in the performance of offices for the sick, suffer in a greater proportion than those who are not, or than those who entirely seclude themselves, cannot be denied: but, lest this acknowledgment should be taken as an admission of the fact of contagion, I shall endeavour to show that the yellow fever cannot be communicated by contact, or near approach to the sick, unless a previous derangement of health predisposes to such an event.

Innumerable instances occurred, in the course of my attendance upon patients labouring under yellow fever, wherein persons *in full health* were constantly occupied about the sick, without being at all affected; and this single fact I take to be conclusive evidence that fever is not necessarily or inevitably contagious: and, independently of this, there is something in the very mode in

which fevers prevail, which goes to prove, as far as the thing is capable of proof,—first, that they are produced by atmospheric influence, or some other agency as little understood; and, secondly, that the most unlimited intercourse between the healthy and the sick has no *direct* power in producing or propagating the disease.

I presume it will be admitted, that even in the most healthy seasons few countries are entirely free from fever, and that it prevails, to a much greater extent, at some times than at others. During an epidemic, that is, during those particular periods when even the advocates for contagion are forced to admit the influence of atmospheric air in the production of the disease, fever spreads to an alarming extent, generally carrying off numbers from every dwelling into which it once finds an entrance. This they account for, by saying that the disease was *produced* in the first instance by the state of the air, and afterwards propagated by means of the unavoidable intercourse between the healthy and the sick. In making this assertion, they have all the

advantage that can be derived from the impossibility of disproving it; but I would beg leave to observe, that fever is never entirely absent from any country. A portion of it is to be found in all districts, and in the most healthy seasons, sufficient to form a *nucleus* adequate to all the purposes of contagious propagation; and how can it happen, that the moment the *epidemic* ceases, and a more healthy season approaches, fever seldom or never rages from house to house, or from individual to individual? Having fastened upon one object, it runs its course, and most commonly departs without injury to the neighbourhood, or even to the other branches of the family in which it appears. If fever be a *contagious* disease, according to the strict, as well as popular, interpretation of the word, how does it happen, that upon such occasions it rarely extends to those who frequent the infected chamber, and are engaged in constant attendance upon the sick?

I shall now proceed to lay before the reader some further observations upon this

subject, as connected with the epidemic which prevailed at Xerez in the year 1820.

On the 23d of September 1820, I arrived at Xerez, where it became my duty to encounter a disease upon which the Spanish faculty seemed able to make but little impression. Contagion was a subject which even then had attracted a good deal of my attention. I had some knowledge of the disease known by the name of yellow fever, as it appeared in the West Indies; and as I there did not look upon it as contagious, I conceived that I might, without personal risk, undertake its cure in Spain; for I concluded that a disease which was generally acknowledged not to be contagious in the West Indies, would be equally innoxious in a northern latitude. In consequence of this opinion, I undertook the management of it without the slightest apprehension of personal danger. At this time I had an opportunity of hearing the different opinions of the Spanish and English inhabitants of the town, upon the subject; for they discussed the question freely, though evidently not without prepossession, the faculty being

strongly prejudiced in favour of the common opinion of contagion, and never seriously, or at least willingly, entertaining any facts or arguments which operated against the doctrines they had been taught in their schools. A short sojourn in the town convinced me that truth was not to be found in hearsay, or candour expected from men whose minds were made up and locked against conviction; I therefore determined upon collecting such materials as the nature of my situation might afford, to enable me to form a judgment for myself.

In a town wherein epidemic fever prevails, there are few who will not look upon it as personally contagious, when they observe that, upon attacking one individual of a dwelling, it generally spreads rapidly among those who lodge under the same roof. This indeed has been so frequently noticed, as to have impressed superficial observers with the idea of its contagious nature. This I believe not to be the case; but although propagation from person to person is not evident, there are certainly grounds for the supposition, that in the ill-ventilated

apartments of the sick, a noxious material emanates from the subject, which alters the salubrious quality of the atmosphere to such a degree, as sometimes to render it unfit for supporting the necessary actions conducive to health, and thereby indirectly to produce fever. But let it be remembered, that the disease thus arising seldom originates in airy apartments. Its attacks are confined to ill-ventilated houses, where the noxious effluvia produced by disease, are increased in activity by the aggregation of subjects in a narrow space, to such a degree of intensity as suddenly to induce a disorganization of the alimentary canal, that terminates in fever. A person exposed to a limited quantum of air, which envelopes those who are sick of the yellow fever, if of a susceptible habit, soon experiences indisposition; and even if it should happen that his constitution resists a regular attack of fever, his stomach and bowels become more or less deranged, partly from the offensive air which he is obliged to breathe, and still more from the impression made upon his mind, by the occurrences passing immediately under his observation. It is

the effect of this vitiated air of ill-ventilated houses which has impressed the community with the notion of the highly contagious properties of yellow fever; for it is taken for granted, that all those who sicken hold direct communication with the infected, never considering that thousands, such as nurses and other attendants, in whose arms the dissolution of patients often occurs, and upon whose bodies, clothes, &c. the blood and black vomit are frequently thrown, escape its attacks. The instances which I myself have seen, during my treatment of the disease at Xerez, in proof of the fact as to nurses and attendants not apparently suffering in greater proportion than those who were simply exposed to the ordinary atmosphere or the air of the sick chamber, are so numerous as to leave little doubt on my mind as to the non-existence of personal contagion in the epidemic yellow fever of Andalusia, as it appeared in 1820. Persons of *susceptible* habits, who breathed the infected air of sickly houses, and were much exposed to its influence, suffered in greater proportion than those who walked

the streets* : but persons who walked the streets did not suffer in greater numbers than those who secluded themselves from all intercourse, and who were only exposed to the common epidemic cause which obviously pervaded all points within the epidemic town.

* It must be admitted, that persons who are exposed to the impression of noxious air, in the sickly impure abodes of the poor, contract disease in much greater proportion than those who are otherwise circumstanced. This is obviously occasioned by the effects of ill-conditioned air, for the like does not often happen in well-ventilated houses. The disease which seemed to be the effect of this morbid material, although, when well formed, very analogous to the genuine yellow fever, differed, in so far as my observation went, very materially, during the incipient moments, from that contracted by persons who walked the streets, and who held no communication with the sick. In the latter case, the attack was in general sudden; while, in the former, the disease crept on gradually. Some uneasiness about the stomach was first observable; the appetite gradually diminished: slight headach at intervals; dreamings and disturbed sleep; succeeded by distention of the abdomen, flatulence, and obstinate costiveness. These symptoms, subject to modifications during several days, and even weeks, ultimately terminated (if no remedy had been administered) in formal fever.

The effect of the ill-conditioned air in impure and dirty apartments, wherein sick were lodged, appeared evident in those who were long exposed to its influence; even in those who were not susceptible of *severe* attacks. If, upon entering the houses of the poorer classes, the impure condition of the atmosphere was not perceptible to the sense of smell, its existence was indicated by a sensation of dryness in the mouth; an inclination to spit; a preternatural excitement or working of the abdominal muscles; and, not unfrequently, by nausea and vomiting, to which costiveness or black viscous stools, accompanied by slight *pyrexia*, frequently succeeded.

In Xerez, the first manifestations of disease were usually in the stomach and alimentary canal, producing, in many cases, a total change in their secretions and excretions, and which, if neglected, often terminated in fever. The foregoing symptoms evidently originated in the noxious quality of the atmosphere in the abodes of the poor; and it was singular, that, without any ostensible cause, even in apart-

ments that could not have undergone changes from the admission of pure or fresh air, the atmospheric condition evidently underwent alterations for which I have never been able to account, those changes occurring in the course of a single day: for it often happened, that the sick person who, at one moment, could not be approached, from an effluvium of which words can convey no idea, might be particularly examined at the termination of an hour, without any offence to the olfactory nerves of his attendants. It appeared to me to be difficult precisely to discover at what periods of disease these changes occurred: they were not commonly perceptible during the stages of depression; they seemed to have possessed a higher degree of intensity during the stages of excitement, on the first and second day, than at any other period.

The Spaniards, blinded by prejudices impressed with the authoritative seal of antiquity, never wish to deviate from one routine. The physicians themselves, although, apparently, advocates for ventilation (according to their published opinions), do not

practise what they teach; while the people, acting under their direction, think that seclusion of air and light is actually necessary for the recovery of the sick of all descriptions, and most particularly of those who suffer from yellow fever. They do not act without a reason; for they imagine that the indication of cure, in fever of all types, consists in producing a determination to the surface; and, to ensure this effect, the windows and doors are closed, the chamber is heated by means of lighted charcoal which emits little smoke, and the patient is covered up in bed with an enormous quantity of clothes in order to force a sweat. It is under circumstances of this nature, where persons are crowded together in dark, ill-ventilated houses, that the disease spreads rapidly; and this has impressed the bulk of the people with an idea of the highly contagious properties of yellow fever. On a superficial examination of the subject, there is, no doubt, an appearance of contagious propagation, whereas the extensive influence of the malady is attributable to the state of the atmosphere, aggravated by the want of ventilation, and acting upon subjects pre-

disposed to disease, by fear, anxiety, or some partial derangement of one or more of the organs essential to life.

Fear of contagion, I believe, predisposes the subject, or produces an aptitude in the constitution for the reception and subsequent development of the disease. This is the reason assigned by the Spaniards why persons who seclude themselves from intercourse fall in as great proportion as those who walk the streets: the fear of infection and the well-known fatality of the disease, producing the most dreadful impressions on the mind. I am the more convinced of this from the effects which fear produced upon myself: for, although I undertook the management of the sick at Xerez without the slightest apprehension, yet time, and the calamitous scenes which I witnessed, soon brought on a depression of spirits which I could not resist; and which, though it did not produce yellow fever, led to such a general derangement of health as compelled me for a time to forego the duties of my situation.

It is believed, and, in my opinion, with some reason, that persons who have once had the yellow fever are not susceptible of second attacks. This, I believe, is generally, though not always, the case; for I have seen many, and treated some, who declared that they had had the disease during the rage of former epidemics, and who yet sickened in the year 1820, and suffered from a malady bearing the diagnostic marks of the prevailing epidemic. When I served in the West Indies, I myself contracted a disease acknowledged to have been the yellow fever, in its worst form: and it is, perhaps, to this circumstance that I should attribute the mildness of two or three attacks of illness that I experienced afterwards at Xerez; and which, as I have observed, though not amounting to yellow fever, were yet sufficient to force me, for a time, to relinquish my professional avocations.

Experience warrants me in asserting that a person in the full bloom of health is not, under any circumstances, susceptible of contagion from intercourse with patients labouring under fever: but fever being an ef-

fort of nature to expel from the habit something that is obnoxious or hurtful to it, I am equally well assured that when a predisposition to disease exists, fever will be quickly generated. Amongst the predisposing causes we may reckon *fear, excessive fatigue, anxiety of mind,* or such *derangement* of any of the *principal organs* of life, as prevents the due and healthy performance of its functions. That fear is a predisposing cause, no man who knows any thing of disease, will attempt to deny; for the instances in which fevers have been produced by apprehension are innumerable. The sluggishness likewise, with which the functions of life are performed, by persons under the influence of excessive fatigue, if not in itself disease, is, *pro tempore,* another and a strong predisposing cause of it; but a partial derangement of any of the principal organs, such as the liver, the lungs, the brain, the stomach, or the intestines, is, of all predisposing causes, the most powerful. Fever invariably produces derangement in a weakened part. If a man labouring under headach, after a debauch, enters the room of a fever patient, he probably contracts the

disease, and the head will be particularly affected. In the same way, if a man whose stomach is deranged, from any accidental cause, exposes himself to the same influence,—fever, in all probability, will ensue; and though all parts of the frame will sympathize more or less throughout the course of the disease, the stomach (its original seat) will continue to the last to be seriously affected.

The following cases, in illustration of the effects of fear, may not be unimportant.

General Sarsfield and his *Aid-de-Camp* were riding through Xerez during the rage of the epidemic of 1819. On arriving at the southern extremity of the town, the General inquired what that part was called; and on being informed that it was San Miguel, a parish dreadfully affected by the epidemic fever, he was seized with violent vomiting: general febrile irritation supervened, and he was confined to his room for the three succeeding weeks. In this case the sudden shock produced an extraordinary impression on a man who, as a soldier, is remarkable for bravery.

Mr. *Ballieros*, a gentleman of respectability, was much in the habit of visiting the sick with me. Having had the disease, he entertained no fear of a second attack. He was with me, however, one day when I bled a patient: and as the blood flowed, he was impressed with an unpleasant feel, which was speedily succeeded by fever that continued for four days.

Mr. *Gomez*, who avoided intercourse as much as possible, was forcibly seized, by a gentleman who had been in the habit of frequenting sick chambers, with a view of exciting alarm. Fever ensued, and he died.

I shall now submit to the reader a few cases which came under my own observation, in illustration of some of the foregoing points. They will tend to prove that the disease was not personally contagious; that is, that it did not propagate by contact, clothes, or near approach,—that it occurred in a great number of instances among persons who secluded themselves from all intercourse with the sick, and that it was of so

peculiar a nature as to affect those only who were *predisposed* to disease, or *were living in the epidemical atmosphere* *.

* Cases of a very ambiguous nature relative to the infectious properties of this disease in the epidemical atmosphere, have come within my own observation during my sojourn in Xerez; and although I am inclined, even in those cases, to attribute the appearance of disease to the pre-existing cause (viz. epidemic influence), to the local action of the contaminated air of sick rooms on the stomach and intestines; or to the impressions made on the mind from the calamitous scenes which were hourly conspicuous throughout the town, with all classes of society; yet I think it my duty to detail a few cases wherein the existence of contagious propagation seemed most apparent. Of these, the cases of ARAN and GOMEZ were most prominent. Aran was taken ill on the 14th of October with a disease of a very malignant nature. The *son*, a boy seven years old, who communicated freely with the father during the first night of his indisposition, was attacked on the following day with a similar disease. Both died. Mr. Gomez contracted the malady on the 17th of October. The disease did not appear under an aggravated form, but it soon assumed a malignant character. The wife and son were taken ill on the 19th, the symptoms of a similar nature in all, and the three died. It may be necessary to remark, that four or five persons, who were young and susceptible, held free communication with the sick in the house of Gomez for three or four days, without receiving harm. The family of the Gomez's observed strict seclusion. Aran's house

Mr. LEON, a wine-merchant of note in Xerez, his wife, and two others, were at-

was the seat of disease several weeks before; but I must acknowledge that, had there not been a probability of the disease being produced in the second instances by the same cause which gave origin to it in the first, I would attribute its extension (particularly in the case of Aran's son) to contagion. The foregoing are the only marked cases which came within my observation at Xerez; but as it may be useful to throw as much light as possible on a subject of such importance as this, I shall submit to the reader's consideration a copy of a note which I received from Dr. SEMERANES. I believe what he states to be correct; therefore I shall give its contents in his own words:

“ On the 12th of October 1819, three men who had broken into the house of a landed proprietor of this town, who resided in the *Calle de Piernas* in a house adjoining the hospital *San Juan de Dios*, were made prisoners, and committed to gaol. Having examined them on the morning of the 13th, I found them in health. One had the disease in the year 1800; the other two were susceptible of the infection of the disease which then raged in this town, having its principal *focus* in the hospital *San Juan de Dios*, and contiguous houses. Communication between the gaol and town was in a manner prevented, and until then it was free from contagious diseases. The three prisoners were accommodated in a separate part of the building, in order to prevent communication with the others. On the fifteenth day subsequent to their imprisonment, one was attacked with the

tacked with the epidemic fever much about the same time. The husband and wife died. The others recovered. I was called on to visit the old lady in an advanced stage of her illness. Her daughters and grand-daughters officiated as nurses, afforded her all the assistance possible during her last moments, and yet received no injury. Ten persons who were susceptible (never having had the disease), and who inhabited the house during the sickness, escaped. The son-in-law was attacked with the fever, from which he recovered, but died of a relapse at an after-period; the disease did not spread.

Mrs. THOMPSON, the wife of a Scotch gentleman residing at Xerez, died, on the

yellow fever in its full character; the other, on the eighth day after. The disease was communicated to four persons who imprudently approached the sick, with the view of assisting them to the prison-door, on their way to the hospital. This short statement shows that, in some cases, contagion communicates itself to people immediately after having intercourse with infected persons or places; in others it does not show itself for a considerable time after the intercourse or contact has taken place.

(Signed) "FERDINAND SEMERANES."

night of my arrival in that town, in the arms of her husband, after an illness of five days. Mr. Thompson never undressed himself during her illness. He watched her with the fondest attention from the moment of attack until she breathed her last. An old man, a young girl, and a child, the daughter of Mr. Thompson, contracted the disease. He attended them all. The old man died, and the others recovered; but Mr. Thompson himself, and the rest of the family, who had never had the disease, were not attacked.

A MOUNTAINEER died in the house of an English deserter named *Aran*. A child sickened, on the fifth day after his death, and recovered. The Englishman and son, with two others, escaped.

The wife of Mr. GIRO, a Frenchman, sickened on the 28th of October. This lady, who imagined that *seclusion* was sufficient to guard herself and family from the epidemic, avoided all intercourse with the inhabitants. She was attacked, and, after a very dangerous illness, recovered. Two of her boys contracted the disease, while

she was in a state of convalescence, and died. Two young girls who officiated as nurses for the sick, a young boy who also contributed his assistance, and four others, all young and susceptible, escaped. One of the daughters became indisposed during the illness of the boys. Her illness, which lasted but one day, was not yellow fever.

A NUN, in the *Convento del Concepcion*, contracted the disease. She was attended by *Dr. Ferran*. Intercourse with the sick in this instance had not taken place, and the others were not affected.

MISS ROMERO, a young lady of some consequence, observed the strictest seclusion, admitting only a faithful servant within her room. She sickened on the 3d October, and, after a severe illness, recovered, without communicating the disease to the attendants.

A silversmith, named SEBASTIAN ALCEDO, and family, who lived in the *Plaza de Plateros*, having avoided intercourse during the epidemic of 1819, continued healthy.

In the year 1820 they had recourse to the same means of safety; notwithstanding which, a girl of eleven years of age sickened. When her indisposition was noticed, the healthy part of the family departed to another house, where, on their arrival, a girl and boy were taken ill. The three died within the fifteenth day.

Two young girls were affected with the epidemic, in the out-house of *Mr. John Gordon*. They both recovered; but the disease was not communicated to two persons who were in attendance, although the house was ill ventilated, and the air of the sick room extremely impure.

In the street called SEMBLAS, four persons contracted the yellow fever: one died, and three recovered; while eleven, who were in the house, and susceptible, as never having had the disease, were not attacked. The ventilation of this house was exceedingly bad, and the communication between the healthy and sick was direct and constant.

A young man in the same street contracted the yellow fever. The house was well ventilated. Thirteen persons who resided in it were not affected by the disease.

In No. 22 of the street called LAS CABEZAS, four persons were affected, and died. There were eighteen others in the same house, who all escaped. It was ill ventilated.

In a house in the place of SAN MARCOS, ten persons were affected with the epidemic fever, who all died. Nine escaped in this house, though in constant communication with the sick. The house was dirty and ill ventilated.

In a house within three doors of the last, nine were taken ill, of whom five died. Seven persons, who had never had the disease, were not affected by it, though in constant attendance upon the sick.

I shall now offer some further evidences that the yellow fever does not multiply, unless where an epidemic influence exists; at least, that it did not do so in the year

1820, when the disease was most malignant and fatal. In all the epidemics which have affected the different cities of Andalusia since the year 1800, numbers of persons were removed to the country while labouring under the disease, and many others were taken ill while flying from the scene of mortality; but in no one instance that I am acquainted with, was the disease communicated to the attendants, or inmates of the same houses, however exposed to its influence. In the year 1820, the exemption was not confined to the country people, or to individual houses; but large towns, whose locality and form of construction rendered them peculiarly liable, were not affected by the introduction of cases of the worst kind from the infected towns. In every case (and the instances were numerous), the disease disappeared with the death or recovery of the patient; and occurrences of a similar nature have so often been observed during the rage of epidemics, in North and South America, as to leave no doubt on my mind, that the propagation of yellow fever, by intercourse, does not take place. I shall

now give a few well-authenticated cases in illustration.

ALCALA DE LOS PANADORES is a village, distant two leagues from SEVILLE, in which the bread for the support of the city is baked. In the year 1800, when fifteen thousand persons died of the yellow fever in Seville, the citizens visited the village daily for bread; many of them sickened there, and some died; but the villagers were not affected by the malady, presumptively because there was no atmospherical epidemic influence there. Besides, fugitives, to the number of eighteen, from Seville, died in the village without communicating the disease to the inhabitants.

Mr. JOHN GORDON, in a letter from the country, states the following facts:

“ In the year 1800, when Mrs. Gordon's father was *Procurador Major* to the *Carthusian* convent, which is nearly two leagues distant from Xerez, there were from seventy to eighty men at work there daily. The majority of the workmen paid nightly visits

to the town, which was then affected by a destructive epidemic, and many of them contracted the disease. Those who sickened in the convent were taken on carts to town, because the *Procurador* was determined not to suffer them to remain there while labouring under the disease, there being no physician in attendance. Some of the infected concealed themselves, and succeeded in evading the vigilance of the overseers so effectually as to die on the road to town. Thirty of the MONKS, and several servants, who had never entered the infected town, continued healthy. Similar occurrences took place in subsequent epidemics."

This gentleman observes, that in the year 1819, the daughter of a man named *Puentes Capitas*, left her house in Xerez, when the epidemic set in, to inhabit a cottage in the neighbouring country. She sickened on the night of her arrival in the country, and died after a short illness. The family and attendants were not affected by the malady. I have been also informed by this gentleman, and the fact has likewise been related to me by several others, that

an officer passed through Cadiz and Xerez, in the month of September 1820, to visit a lady in the latter place, with whom he was in love. Upon his arrival at Xerez, he learned that the object of his affections was in the country, in consequence of which he remained only a few hours in the town. He was attacked by fever on the night of his arrival in the country, and died after a short illness. The lady nursed her lover from the commencement of the attack until his death; and though neither she nor any of the family in the house had ever had the disease, it did not spread.

He goes on to state, that the carrier who was in the habit of going from MONTILLA to CADIZ with oil, was, on his return, attacked with fever bearing the diagnostic marks of the epidemic. He died after a short illness; but the family, which was exposed to the influence of the malady for a considerable time, was not affected by it.

A few days subsequent to the decease of a man in the town of BURNOS, I received

a letter, of which the following is a copy, from a gentleman who then resided there.

“ BURNOS, Dec. 4, 1820.

“ I have lately been informed, by the *vicar* of this town, that the yellow fever has been repeatedly introduced here, without a single instance of its affecting a second person. In the year 1800, sixteen persons, labouring under epidemic fever, clandestinely introduced themselves, and died: the disease did not propagate. After the town of ESPEXA had been almost depopulated by epidemic fever, the clothes of hundreds of the unfortunate victims were introduced into this town, and sold, without infecting an individual. On the 7th of September last, a sergeant (I cannot say of what regiment) entered this town from the direction of Xerez; and, notwithstanding the vigilance of the authorities and the severity of the disease, he reached the house of his friend. On the morning of the 11th, the black vomit set in; and the physician, only then, informed the Board of Health that he had a case of yellow fever under treatment. Guards were immediately placed over the house,

and the patient died on the sixth day. The Board of Health, fearful of the ill effects which the neglect of the *faculty*, on similar occasions, might produce, fined the physician, who, it appears, was convicted of keeping the secret from lucrative motives. The disease ended there.

(Signed) “ F. L. SWEETMAN.”

The following is a copy of a letter, dated
“ RONDA, Oct. 6, 1820.”

“ On visiting the COUNT of VILLA CRESEY'S sister, on the 30th of September, I was informed, that, on the preceding evening, her brother, who is a medical man, observed a woman in the street labouring under fever. As the symptoms and countenance of the woman indicated the existence of yellow fever, he immediately announced the case as one of the epidemic kind. She was ordered to be placed in a LAZARETTO, where she only survived a few hours. A Cadiz passport was found in her pocket. The period of her sojourn in Cadiz could not be correctly ascertained; but, as she had no fixed abode, it was apprehended she had communicated freely with the inhabitants;

and, consequently, the spreading of the disease was daily dreaded; but without foundation, for no second person was affected by it.

(Signed) "SWEETMAN."

A regiment was encamped in a wood, at the distance of a mile and a half from the town of Xerez, during the prevalence of the epidemic of 1820. Some of the soldiers, who, contrary to orders, visited the town, fell victims to their imprudence. An officer also, who exposed himself to the influence of the epidemic air, died in camp. The disease did not propagate, however, through the camp; the attendants, as well as all those who had avoided intercourse with the epidemic town, escaping.

When the epidemic of 1800 broke out, the family of MR. HAURIE went into the country. The *book-keeper*, at first, could not be prevailed upon to go with the rest. He, however, soon became apprehensive, and departed. On the night of his arrival at the country-seat, he fell ill. The physician in attendance could not say, posi-

tively, at the first visit, that it was the epidemic fever; in consequence of which, the family used no precaution against contagion. The patient turned yellow, and died, after a short illness. Thirty-six persons inhabited this house; and although they communicated freely with the sick man, they continued healthy. The driver who conveyed the corpse to town on the back of an ass, and who was susceptible, as never having had the disease, received no harm.

The general hospital of Xerez, in the year 1800, was distant half a league from the town, where from thirty to forty persons died daily. The disease was not communicated to any of the attendants.

The town of PUERTO SANTA MARIA is situated at a central point between Cadiz and Xerez. It was generally rumoured, and credited, that all communication between this and the infected towns, was prevented during the epidemic of 1820. This, in reality, was not the case; for I myself passed through it, upon four occasions,

without interruption. Some deaths from yellow fever took place in the town of *Puerto Santa Maria*. Many persons from Cadiz and Xerez sickened there: all the neighbouring towns and villages, in fact, communicated with it; still, the disease was limited and confined to a few, who contracted it in the infected places, and who either died or recovered without communicating it to the inhabitants of the town.

The ISLA DE LEON, a town of some magnitude, is situated at the extremity of the causeway that leads from Cadiz to the main land. The communication with Cadiz was open for a month subsequent to the appearance of the epidemic fever: the inhabitants, notwithstanding, continued healthy: there was one death from yellow fever, but the attendants were not affected.

PUERTO REAL is a large town skirting the bay of Cadiz. The people of Cadiz and Xerez communicated with the inhabitants of this town. The population continued healthy.

CHICLANA, a small town, is distant three leagues from Cadiz. The son of the *Ordinario*, or messenger, who communicated with the infected towns, sickened there. His attendants, and all others, escaped.

A man who contracted the disease in Xerez, sickened in ALCALA DE LAS GASULES, a mountain village distant four leagues from Xerez, and died. Four cases of remittent fever appeared about this time, which, although they occasioned little or no alarm in the village, excited the most painful apprehension *in some of the neighbouring parts*, where it would appear that reports favourable to the *doctrine of contagion* are readily received. No harm ensued.

A man who had communicated with the inhabitants of Xerez, sickened in a small village called PUENTES DE LA CAMPANA, but without injury to the inhabitants.

The instances of persons from Xerez and Cadiz who sickened in the neighbouring towns, villages, and country-houses, and

even far in the interior, were too numerous to attempt to detail. It may suffice to state, that in no one instance did the disease affect a second person in any of the towns or country-houses wherein epidemic patients were accommodated: and this, I contend, leads inevitably to the conclusion, that the yellow fever does not propagate, even under the most disadvantageous circumstances, except in epidemical atmospheres.

CHAPTER IV.

SYMPTOMS OF THE YELLOW FEVER AS MANIFESTED IN THE SANGUINE TEMPERAMENT.

THE yellow fever of Xerez exhibits considerable variety in the manner of attack and subsequent course, from causes of local or constitutional contingency. As it would be difficult to describe the various ways in which it appears, I shall endeavour to detail the symptoms under two heads; viz. the one in which excessive vascular energy predominates; the other, in which there is a deficiency of vascular power. The distinctions which I make will, I trust, be sufficient for the elucidation of the subject; for, although there appear to be many distinct forms, yet, as the state of the eye and expression of countenance are the diagnostic marks in all (however different the other symptoms are from one another, from pe-

cularity of habit of body, or other cause), and as the treatment (in so far as my judgment enables me to form an opinion) need not be varied to any considerable extent except in the cases under consideration, I shall confine my description to them only. The cause of the disease is one, the mode of attack is various according to the series of parts upon which the action is principally conspicuous; and as there are a number of contingent causes which act so as to produce a transfer from one part to another, the writer describes the disease according to the expression of symptoms on the different series. The character of the series of parts on which the action is prominently made, constitutes one *variety* or *form*; the form changes character as the cause is transferred to another; and it happens not uncommonly that they are mixed in various degrees, though the action on one part is prominent over the others. This idea forms the base upon which the following description is laid.

The first *variety* or *form* of fever which I shall endeavour to describe, manifests its principal action on the vascular system.

This disease, although extremely alarming from the violence of symptoms which succeed the period of invasion, is not very fatal, under proper management; but, if neglected, or left to nature, it runs a rapid and destructive course. Its attacks, for the most part, are sudden, though sometimes gradual; the actual period of invasion being preceded for days by headach and disagreeable sensations at the stomach. The onset is usually indicated by a sense of cold at the extremities, which gradually extends to the back and loins, and is generally succeeded by chillness of long duration. The strength, in general, is so little impaired during the first moments, that the patient can scarcely fancy himself ill. The appetite is sometimes unusually good; the spirits more or less exhilarated; the voice more than usually strong and clear; and the language free, rational, and rarely incoherent. But the patient's lips tremble while he speaks, and are observed to be in motion even when he is silent. With his condition now he soon becomes dissatisfied; and either goes to bed, or repairs to his medical attendant to ascertain the cause of his sensations. He is

attacked with headach, which is commonly severe, at times quite excruciating, and principally confined to the forehead. The eye is red and suffused; the countenance dull; the pulse labouring and irregular, seldom above 90, frequently obscure and depressed. The skin, during the continuance of the chills, is cool, and occasionally covered with a tenacious clammy sweat.

These symptoms, which mark the first stage, usually continue to the fifth hour, when, the disease being fully formed, the patient generally becomes restless, and shows an inclination to talk loudly. The head is violently pained, and there is a sense of tightness about the eyes. Transitory flashes of heat, resembling those produced by a red-hot iron when closely applied towards the surface of the body, pass over the forehead and cheeks, ceasing and returning at intervals, and leaving behind them a disagreeable sensation of chill in those parts. This sensation continues for some hours, and is ultimately succeeded by a permanent flush of the entire countenance, amounting sometimes to crimson. The eye generally denotes

the existence of disease from the moment of actual invasion; and it not unfrequently happens that the eye and countenance mark its approach even before the chills set in. The eye is inflamed, painful, difficult of motion and intolerant of light, protruded and agitated; the conjunctiva surcharged with red vessels, accompanied by an inflammatory condition of the lining membranes of the lower lids. The countenance, at some times, is sad, dull, and careless: at others, lurid and grim, with agony and distress strongly depicted in it. Questions are answered carelessly but correctly, in such a manner, however, as to impress the medical attendant with the forcible marks of a disordered state of the intellect. The *alæ nasi* are dry internally. The tongue is clean during the first hours; but ordinarily changes after a short time, and becomes loaded and white, sometimes rough and dry, and sometimes covered with a glutinous matter which adheres firmly to its surface. There is an inclination, without the ability, to spit out; for the salivary secretions are speedily altered to a clammy, tenacious matter, which gradually diminishes in quan-

tity, as the disease advances. The mouth is hot, the lips parched and pale: the thirst is sometimes urgent, at other times not considerable; and the temporal arteries throb violently. The stomach is irritable; and acute pain, considerably increased on pressure, is always present at the scrobiculus cordis. The bowels, for the most part, are constipated; and when otherwise, the evacuations are watery, seldom bilious or feculent. The abdomen is painful on pressure. The heat of the body is generally great. Whenever sweats follow the formation of the disease, they are of short duration and partial, being confined to the forehead and breast, and seldom so profuse as to give hopes of producing benefit. The pulse is, generally, from 70 to 90, expanded and full. The urinary discharge is diminished, not unfrequently suspended, and always high-coloured. The pains of the body and limbs are sometimes excruciating, particularly in the calves of the legs.

These symptoms occasionally abate about the 12th hour from the commencement; but the abatement never amounts to what may

be called intermission; and it was so indistinct in most cases, and the symptoms recurred with such aggravation, that I was more disposed to attribute the change to the effect of the remedies employed than to any other cause. A change, however, was in some cases distinct about the 24th hour, the symptoms generally increasing in violence from the beginning of the attack until that period, when a diminution of febrile irritation became evident, indicated by the abatement of the headach, pains of the extremities, heat of the surface, and general febrile excitement. This change in the condition of the patient is usually accompanied either by a gentle moisture or copious sweat, which rarely extends to the lower extremities; attended, however, with momentary relief.

The diminution of febrile tumult is thus occasionally distinct about the 24th hour, though in most cases there is no perceptible change: but whether evident or not, there is from this period an increase of fever. About the 25th hour the headach

(if there was any previous alleviation of it) returns, and increases, sometimes, to such a degree as to occasion delirium. The face is deeply flushed, and indicative of extreme anguish. The eye, which seldom undergoes any alteration from the temporary diminution of febrile irritation, now becomes still more desponding. There is a sensation of burning heat in the orbits; and the marks of inflammation (if redness had before existed) are augmented. The eye, at this period, exhibits great variety in different subjects; but in general it is red, glistening, and frightful to behold, somewhat resembling the eyes of cats in twilight, or those of a drunkard in the moments of intoxication. The countenance is peculiar and not easily definable by words, having an inanimate sadness of expression, which, with the state of the eye, constitute diagnostic marks of a disease difficult to be mistaken by those who have once seen it. The thirst, and foulness of the tongue, increase. The lips are dry, parched, and shrivelled. The respiration is quick, hurried, and oppressed. The pulse undergoes very little change. The stomach is generally irritable: the liquor ejected is

either clear, consisting of the ordinary drink, or of a dark-coloured ropy mucus. The pain of the abdomen is severe, and increased by pressure. The stools, if not of a dark colour in the commencement, now change to a brown or black, and are watery. The urinary discharge is scanty, and frequently altogether suspended; when secreted, it is voided with pain and difficulty. The pains of the extremities prove extremely distressing about this period; and flatulent eructations set in on the close of the second day, increased considerably by an erect posture. These symptoms, subject to modifications, increase in violence from the 24th to the 48th hour, when an abatement of fever is again evident, marked by a freedom from headach (which rarely recurs after this period) and a diminution of bodily heat; and the patient, for a short period, enjoys a state of comparative happiness.

This second change is of as short and uncertain duration as the first, and is usually succeeded by an aggravation of all the symptoms, which increase in urgency un-

til the 60th or 62d hour, when, if the disease is about to terminate fatally, there is a sudden subsidence of all fever, without any ostensible evidence of crisis. The skin becomes cool and clammy; the pains subside; the countenance assumes a serene aspect, and the eye recovers its animation. Presently, the conjunctiva, which is surcharged with veins, changes to a dirty yellow, and the body to an olive colour. The tongue becomes moist; the crust begins to separate; and the thirst, if any existed, subsides altogether. The pulse is expanded and regular, scarcely differing from health. The feet are cold; and the patient continues in this state for some time perfectly free from distress or pain; at length he grows restless, and tosses about in bed. He feels an oppression at the pit of the stomach; and, after a few minutes, he vomits a quantity of matter like coffee-grounds, which is succeeded by relief and by a change for the better in the countenance.

The foregoing symptoms, suddenly succeeding febrile irritation, indicate, on the

third, fifth, or seventh day, a retrograde movement in the febrile course, which may, in my opinion, be considered as of fatal tendency. When they are conspicuous on the third day, life is generally destroyed on the fifth; but when many of them are absent, and when those that are present are less violent in degree, the disease runs a longer course, and the patient will not die before the seventh or beginning of the eighth day.

If there be a continuation, or an increase, of febrile excitement, during the third day, if the heat of the body increases, the vomiting disappears, and the pulse retains its usual vigour, while the countenance assumes a placid appearance, sanguine hopes may be entertained of a favourable issue.

The foregoing were the symptoms which usually characterized this form of the disease, in its common mode of attack, from the period of invasion, until death. There were cases, however, in which its approaches were more sudden, and distin-

guished by symptoms of a more violent nature, the action on the system being so quick as to resemble an electric shock. The patient, in these cases, is deprived of all sense and motion, without experiencing any previous indisposition. He falls as if from a blow, becomes wild and delirious, and, not unfrequently, foams at the mouth. This stage, if it may be so called, is of short duration: the *delirium ferox* subsides, the senses return, and, on opening the eyes (an action seemingly effected with great difficulty), he views all around him with a stare of wild astonishment. The head soon becomes tortured with lancinating pains; the eyes redden; the tongue appears red and dry, and the skin hot. These symptoms increase for a given time, when, if active measures are not resorted to, death, preceded by hæmorrhages from the mouth, nose, and anus, closes the scene upon the second or third day, or sooner.

CHAPTER V.

TREATMENT OF THE DISEASE AS MANIFESTED
IN THE SANGUINE TEMPERAMENT.

IN this treacherous and malignant form of fever, the ordinary medical aids, or those which were to be found in the town of Xerez, were often insufficient to make any impression on it. Its course is so rapid, that there is little time for consideration: for, if the few first hours are allowed to pass away, without some bold and decided measure, all subsequent attempts are of little or no avail. This form of malady, as would appear from the foregoing history of it, and also from the appearances on dissection, is, incontestably, of the inflammatory kind. When a patient, who labours under an attack of it, is submitted to treatment at an early period of the disease, I would recommend his being immediately immersed in a warm bath of high temperature (viz. 100 degrees of Fahrenheit), where he is to remain for fifteen or twenty minutes, or until

the whole of the body is perfectly cleansed by means of coarse cloths or flesh-brushes ; after which he is to be carefully dried and put to bed. A vein is then to be opened in one or both arms, and the blood allowed to flow until the pulse undergoes a decided change, or fainting supervenes from actual loss of blood ; on the occurrence of which, the arm may be tied up. Blood-letting, as subtracting the impulse from the diseased organs, presents itself as the most effectual means of arresting the disorder. I have made trial of it myself in many cases, and with decided advantage. In some it appeared to cut short the disease: in others it was succeeded by copious sweats and alvine discharges ; and in all, if carried to a sufficient extent, it removed the head-ach and general distress. From the very beneficial effects which were observed to result from the extensive use of this remedy, during the rage of the epidemic of 1820, I think I am warranted in saying, that were the other auxiliaries at hand, which are necessary for the successful treatment of fevers, the mortality would have been comparatively trifling ; not exceeding, in all

probability, one or two in twenty*. The mode of subtracting blood, and the quan-

* The Spanish physicians have, for many years past, been very much prejudiced against the use of the lancet in fevers, from an idea that abstraction of blood was directly and unqualifiedly debilitating. The arrival of Dr. JACKSON in Cadiz (to whose indefatigable zeal and unexampled perseverance, we are entirely indebted for the thorough knowledge we now possess as to the beneficial effects of this invaluable remedy in fevers), and the very great success which attended copious venesection in the case of Dr. M'GIBBON, induced some of them to try the effect of bleeding in yellow fever; and an official publication which appeared in the DIARIO MERCANTIL of Cadiz, dated the 25th of October 1820, will give ample proofs as to the success which attended the experiment. The following is a copy:

“ Estado analítico de las Enfermedades.

“ La constitucion medical de este mes, el predominio de los vientos al E. y los calores que estos producen han ocasionado calenturas de varios órdenes, particularmente del de biliosas, las que por omision de los individuos invadidos, ó por defecto del régimen curativo, han solido degenerar en pútridas ó malignas de éxito funesto. Ademas de estas enfermedades propiamente estacional les se ha manifestado en este vecindario el contagio del tifo-ictérodés, fiebre amarilla vulgarmente dicha, el que ciertamente ni seha propagado con la rapidez que otras veces, ni ha desenrollado el aparato de sintomas tan terribles con que se presentó el ano pasado. Es verdad que el plan curativo ha sido diferente del que ha tenido lugar

tity to be taken away, vary considerably according the circumstances of the case, and

hasta ahora: *las sangrias*, que han sido generalmente proscriptas en esta fiebre, han producido muy buenos efectos en la actualidad. Los facultativos cèlebres de que abunda esta plaza, persuadidos de que el contagio afecta idiopaticamente la membrana mucosa del canal alimenticio, ocasionando en ella una flegmasia mas ó menos aguda, no han dudado en recurrir al plan anti flogistico, y de consiguiendo á las sangrias, como una de sus principales partes, practicàndolas muy en los principios de la enfermedad, y repitiéndolas, con concepto á la vehemencia de los sintomas, estado de robustez del individuo, edad, sexo, temperamento y método de vida.

“Satisfecha esta primera indicacion, se presenta naturalmente la segunda que debe llenarse, cual es la de evacuar las primeras vias: lo que se ha conseguido felizmente á beneficio del *calomelano*, combinado con *la jalap*, ó bien de una disolucion del sulfato de magnesia, y manna en el cocimiento de tamarindos. Con solo este plan, auxiliado de la dieta vegetal y de las bebidas mucilaginosas ligeramente aciduladas, se han obtenido felicisimos resultados, segun los confiescan los buenos prácticos, y se patentiza por el éxito que ha tenido este metodo, tan sencillo como racional, en la sala de incomunicados de este hospital militar, al cuiado y direccion de mi sábio amigo y companero D. PEDRO MARIA GONZALEZ, quien por su medio ha conservado à la Patria las vidas de muchos de sus apreciables defensores.

(Signed) “FRANCISCO DE FLORES MORENO.”

the condition of the patient. If the head-ach is great, the eye red, inflamed and prominent, the countenance flushed, the limbs painful, and sickness be present at the stomach, with universal uneasiness of the system, and a hard strong pulse; the patient should be placed in a recumbent posture and a vein opened, from which blood should be allowed to flow until fainting succeeds; after which a brisk cathartic composed of calomel and jalap, or the compound extract of colocynth, is to be administered, and followed up by a solution of salts with infusion of senna; to which may be added such quantity of the liquor ammoniæ acetatis as will act on the skin while the purgative acts on the bowels. If these medicines be slow in operation, purgative enemata may be thrown up the rectum; and if they fail in promoting evacuations by stool, a stimulating draught, composed of the tincture of myrrh and aloes, two drachms for a dose*, or of jalap, rhubarb,

* R. Aloes barbadensis unc. ij;

G. myrrh. unc. j;

Spirit. vini rectificat. unc. iij.

Stet per 24 horas, et adde spirit. vini gallici ℥j. Stet per sex dies, et cola per chartam.

and tincture of jalap*, will seldom fail of producing the desired effect. After the patient is bled, and the bowels evacuated, if there is much irritability of the stomach, a very large blister should be applied to the epigastric region; and effervescing draughts, with a few drops of tincture of opium, may be taken every hour, or half hour, according to the urgency of the symptoms. If the headach returns after bleeding and other evacuations (which does not often happen), the head may be shaved, and blisters applied to the temples and nape of the neck, extending downwards between the shoulders; while cold lotions, composed of lime-juice, vinegar, and water, are constantly kept to the head, until all uneasiness subsides. In the evening, or about the tenth hour from the commencement of the attack, I would recommend the *pediluvium*, in preference to the general bath, as being equally efficacious and much less troublesome to the patient. The *pediluvium* is to

* R. Jalap. pulv. gr. viij;

Rhæi rad. cont. gr. x;

Tinct. jalap. ℥vj;

Aq. font. ℥ss. M. Ft. haust.

be arranged in the following manner. A tub, equal in height to the bed upon which the patient sleeps, is to be placed at the foot of it, filled with water heated to about 100 degrees of Fahrenheit. The tub being fixed, the patient is to be moved gently downwards until his knees arrive at the lower part of the bed; so that when the legs and feet are in the bath, the lower extremities may be perfectly at ease. A part of the bed-clothes is then to be brought over the bath, so as to allow the vapour to pass freely upwards to cause a moisture of the whole surface. This description of foot-bath, if properly managed, will be found of great utility: its use has been attended with the utmost advantage in Xerez, and served, on many occasions, to produce copious sweats, to allay irritation, and, frequently, to induce sleep. When the patient is replaced in bed after the foot-bath, the blanket should be changed.

If the plan of treatment which I have thus sketched be properly attended to during the first day, it will generally be found sufficient to arrest the disease, and, often, to

stop the fever altogether. On the second day, and even on the first if the disorder be violent, CALOMEL and JAMES'S POWDER, in form of pill, given in the proportion of five grains of the former to four of the latter, every second hour, will be found an *invaluable medicine*. This combination, notwithstanding the nauseating effects of the James's powder, is frequently found to remain on the stomach when nothing else will. It maintains an open state of the bowels, without producing that distressing and alarming purging which too often arises from the operation of drastic purgatives; while, by its operation on the system at large, it produces the most salutary effects. The warm bath is to be repeated on the second day, and, if the symptoms indicate the necessity of the lancet, the vein is to be opened; and, while the body is immersed, a large quantity of blood can, with safety, be abstracted. If the irritation of the stomach still continues, the effervescing draughts, with the liq. ammon. acet. and tincture of opium, may be repeated; or a weak solution of the superacetate of lead, or the sulphate of zinc, should be administered, as it frequently re-

strains the vomiting without superseding the purgative effects of the calomel.

Fomentations to the lower extremities are always useful about this period; the latter being generally affected with obtuse pain, which is much relieved by the application of flannels wrung out of hot water, and changed every five or six minutes. If the skin is hard and dry, frictions with warm stimulating oils, will prove extremely beneficial in removing the constriction from the surface. On the third day, if the system is not under the influence of the mercury, it will be advisable to continue the *calomel pills*; conjoining *ammonia*, *camphor*, and *opium*, with the view of exciting artificial action*.

* The reader will observe, that in the treatment of the subsequent cases, powerful stimulants were resorted to, sometimes at the termination of the second day, and generally on the third. In all those cases which terminated fatally under my superintendance, the symptoms increased in violence from the period of invasion until the third day, when the febrile tumult subsided, without the ostensible marks of salutary crisis; and this change was invariably the forerunner of death. I have not seen a

The application of blisters to various parts of the body will be found extremely beneficial on the second and third day; and, in many instances, it will be useful to give wine freely. The patient who is treated in the manner which I have detailed, from the time of invasion until the third day, will, in the majority of instances, be under the influence of mercury; after which his recovery is certain and rapid. He will, generally, walk about on the seventh day.

The subjoined Cases will show the plan of treatment which I pursued, for the cure of this disease, in Xerez, under circumstances the most untoward.

recovery where it was distinctly marked; things assumed the retrograde course afterwards, and life was gradually consumed. Powerful stimulants were therefore given on the second or third day, with the view of exciting artificial action throughout the system, so that the patient might be got over the period of depression, and eventually saved from destruction.

CASES.

CASE I.

Francis Rorque, an Irish clergyman of the *Capuchin* order, twenty years of age, and of a robust habit of body, contracted the yellow fever on the 17th of October 1820. I visited him in two hours after the attack, and found him in bed. He accosted me with unusual hilarity; spoke rather at random; asked several questions, but seemed regardless of answers. The head is violently affected; the forehead particularly. The face is flushed, the cheeks red, and the redness circumscribed. The eye inflamed and glistening; the tongue white and somewhat loaded. There is thirst and clamminess of the mouth. The heat of the skin is great. The pulse 75, full and strong. The bowels constipated. There has been no alvine evacuation for the four last days.

I opened a vein in the arm, and abstracted three pounds of blood, which removed the headach without materially altering the

state of the pulse. Purging medicine, and fomentations to the lower extremities.

Oct. 18. The medicine produced very abundant stools during the night, which, at first, were of a natural colour, but, towards morning, black and watery. The stomach is irritable, and the head slightly pained. The eye, surcharged with red vessels, watery and glistening. The tongue very much loaded. The thirst urgent. The lips dry and parched, and the countenance gloomy. The pulse 75, hard and full. Eructations, distressing while the body is in an erect posture.

Calomel, tartarized antimony, and opium, combined in form of pill, to be taken every two hours, with effervescing draughts. Pediluvium.

Oct. 19. Passed a bad night. The irritability of the stomach continues, and the eructations are extremely distressing. There is much pain at the scrobiculus cordis. The countenance is anxious, wild, and desponding. The tongue loaded, white, and dry. The mouth and lips parched, and the skin

dry and rough. The abdomen tense, and painful on pressure. The stools black, watery, and highly offensive.

A large blister to the stomach; another to the nape of the neck, extending downwards between the shoulders. Calomel, camphor, and opium, every two hours, with the effervescing draughts, and liq. ammon. acet. Friction of the surface with warm stimulating oils. Cooling acidulated drinks ad libitum.

I was seated at the patient's bedside in six hours after the taking of the foregoing report; and noticing, as I thought, a change for the better; when restlessness, pain, and distress at stomach, suddenly came on. I examined the pulse, which was soft and compressible, and the temperature of the skin was natural. The eructations became very distressing. The countenance darkened, and he vomited black matter in considerable quantity. When the vomiting subsided, the distress abated, and finally ceased altogether.

A grain of opium.

Oct. 20. He slept after the opiate. Three or four fetid evacuations in the night produced by a purge of tincture of myrrh and aloes, which was administered last evening. The countenance better than at any former visit, and the eye lively. The conjunctiva of a yellow tinge. The lips dry and parched. The tongue loaded, moist, and of a dirty brown colour. The thirst removed. The heat of the surface below natural. The eructations recur at intervals, and are extremely distressing in the erect posture. The bowels are extraordinarily agitated. Sand, resembling gunpowder, is deposited on the bottom of the bed-pan after each evacuation.

Calomel, camphor, and opium. Effervescing draughts, and the liq. ammon. acet.

Oct. 21. Some irritability of stomach during the night, but the countenance is tolerably good. The conjunctiva of a dirty yellow colour. The tongue cleaner. The lips pale and dry. The skin flabby, and the heat of the surface below natural. The pulse expanded and inelastic. The evacuations black, watery, and fetid. Distress at the scrobiculus cordis.

Two large blisters to the epigastrium. The pills with calomel, camphor, and opium, to be continued, and mercurial friction to the thighs.

Oct. 22. The black vomiting returned this morning, and still continues. There is great anxiety of countenance. The tongue clean; the skin below natural heat, of a dingy yellow colour. The pulse 70, and compressible; the inferior extremities cold. Obscure hickup.

Evening. Frequent black vomiting during the day. The cold is extending over the surface, and the hickup increases. The pulse is expanded, and the intellect unimpaired.

The patient died at nine o'clock.

CASE II.

An English deserter named ARAN, aged thirty-five, and of a robust habit, was taken ill, in the afternoon of the 14th of October, with epidemic fever. I visited him in half an hour from the period of attack. The head is giddy, but not painful. There is a

circumscribed redness of the face. The eye is inflamed, and unable to endure the stimulus of light. The lips tremble as he speaks, and his language is incoherent. The tongue is clean; the lips dry and white; and the thirst urgent. The pulse is 80, full and strong; the skin immoderately hot; and he complains of deeply seated pains in the lower extremities.

I abstracted three and a half pounds of blood from the arm, which brought on *syncope*, and considerably relieved him. A purgative was ordered. But being an unmarried man, and having no nurse, nothing more could be done.

Oct. 15. On visiting the patient early this morning, I found him in a helpless and forlorn condition, without a creature to afford assistance. The face is red; the eye dim and of a yellow colour; vision impaired. The breast of a leaden colour; the tongue clean and thirst excessive. The pulse elastic, strong, and full. The skin hot, and the evacuations have been copious, black, and watery.

Calomel, camphor, and opium, with a

view of allaying irritation and producing sleep.

Evening. The camphor and opium failed of the desired effect. The general distress and febrile irritation are augmented. The face and countenance the same as in the morning. The eye red, glossy, and frightful in appearance. The skin very hot, and the stools black as ink. Urine not secreted. Occasional vomiting of a brown slimy matter.

Camphor and opium.—N. B. The patient having no attendance was ordered into hospital.

Oct. 16. Was reported to have passed a bad night. Some vomiting at distant intervals, not black. The febrile excitement is somewhat diminished. The redness of the face is lessened, and the eye is more animated and natural; but the conjunctiva is yellow. Vision regained. Tongue clean. Lips parched and pale. Pulse expanded and free. Heat of the skin diminished. A small quantity of urine was passed this morning.

Calomel, camphor, and opium, repeated. Blisters to the stomach, nape of the neck,

and calves of the legs. Sinapisms to the feet. Some wine to be taken, with a view of supporting the temperature of the body, which now diminishes gradually.

Oct. 17. Passed a comparatively good night. The countenance improved. Face pale, tongue red and moist, and thirst inconsiderable. The pulse weak, compressible. The stools very frequent, watery, black, and offensive. Urine suppressed. The blisters only seared.

Camphorated mixture, ammonia, wine, brandy, &c.

Oct. 18. The pulse scarcely perceptible, and the cold gradually extends from the feet upwards. Low delirium and hickup.

Died at twelve o'clock this night.

CASE III.

NICHOLAS ANTIBENAS, aged twenty-two, was suddenly seized on the night of the 10th of October with violent headach, nausea, and general febrile irritation. I visited him at a period of ten hours from the time of invasion.

The head, across the forehead, is violently pained. The eyes are red and glassy. The cheeks red, and the lips dry. The tongue white and loaded. The pulse 78, full and hard. The heat of the skin pungent. The bowels constipated. The lower extremities are painful, and a sensation of weight or fulness at the stomach, is exceedingly distressing.

Bled to the extent of two pounds, which removed the headach and relieved the stomach. A purgative of calomel and jalap.

Evening. Fever not at all abated. Pulse violent in its stroke, but the headach has not returned. Lost two pounds more of blood, which brought on syncope. The purgative repeated. Effervescing draughts every two hours.

Oct. 11. Reported to have passed a bad night. Vomited at intervals. The face is flushed, and the eye red and glassy. The countenance anxious, and expressive of great distress. The lips dry and red. The tongue white and loaded. The thirst urgent. The heat of the surface excessive. Pulse 80. The abdomen swollen and painful on pres-

sure. Passed some black stools. Urine inconsiderable and voided with pain.

Pills of camphor and opium washed down with effervescing draughts.

Oct. 12. The stomach was irritable during the night, and he had three dark-coloured evacuations. Symptoms the same as yesterday.

The medicines to be continued.

Oct. 13. The countenance improved, tongue clean, bowels free, and stools more natural. The pulse energetic and full. The gums sore, slight salivation.

The medicines to be continued, with the omission of the calomel.

Oct. 14. Convalescent.

CASE IV.

Doctor M'GIBBON, an English practitioner at Cadiz, was attacked with the epidemic fever on the 15th of September 1820. The symptoms were of the most urgent nature, when I first visited him. He was bled to the quantity of two pounds, which

induced a slight syncope; but the symptoms, notwithstanding, continued with unabated severity, and I was again obliged to take away one pound and a half of blood, which produced the most beneficial effects. The urgent symptoms, however, recurred on the second day, when he was again bled to the extent of a pound and a half. His recovery was rapid.

The medical gentleman whose case I have just now sketched was kind enough to favour me with the outlines of the three following cases, treated by himself, during the epidemic at Cadiz in the year 1820.

CASE V.

The brother-in-law of MR. BUTLER, a Cadiz merchant, was seized with the epidemic fever on the 8th October 1820. The symptoms were very alarming. Seven pounds of blood were taken from the arm during the first days. Calomel and James's powder were administered, in the proportion of twenty grains of the former to five of the latter. Charcoal given to the quan-

tity of fifteen grains every half hour, for six successive hours, with effervescing draughts, proved extremely serviceable in checking the vomiting. The torpor of the bowels was removed by draughts, composed of rhubarb, jalap, tincture of jalap, and water. The recovery of this patient was so speedy that he walked about on the 13th day.

CASE VI.

CAPTAIN TAYLOR, master of the English brig, *William Mind*, caught the epidemic fever on the 9th of October 1820. The symptoms set in with great violence. Five pounds of blood were abstracted from the arm at one bleeding, and calomel and James's powder were administered in the proportion of eighteen grains of the former to six of the latter three times a day. The patient was convalescent on the third day.

CASE VII.

JOHN HORE became indisposed on the 2d of October 1820. The symptoms,

as usual in this epidemic, were extremely violent. He was bled to the amount of three pounds. Calomel and James's powder were given in large doses, and the patient was convalescent on the 5th day.

I shall now give two cases of epidemic fever, treated by the Spanish physicians; the one in the hospital *St. Juan de Dios* at CADIZ, the other in XEREZ; and also the appearances on dissection.

CASE VIII.

HYACINTH VALVERDEZ, aged thirty, of muscular frame, was admitted into CADIZ hospital on the 25th August 1820, labouring under epidemic fever. The symptoms continued severe until the 5th of September, when, from excessive dryness, and disease, the tongue split deeply, in different parts, and discharged a large quantity of blood, which, apparently, produced convalescence. He walked about, for a few hours, daily. His appetite good. The pulse small and

contracted. The general appearance indicated some latent mischief. On the 7th September he was reconfined to bed, and his pulse was hardly perceptible. The countenance anxious and desponding. A dingy yellowness was perceptible in many parts, particularly about the chest and conjunctiva of the eye. On the 8th the pulse disappeared at the wrist: still his appetite was good. The abdomen painful, tense, and swollen; and a crepitus was observable on pressing it. The alvine evacuations were watery and black, and the urine was scanty; but he slept tolerably well. The skin was constricted and below the natural temperature. On the 9th his strength was astonishingly great, though the pulse was still not to be felt. During the 10th, and part of the 11th day, these symptoms continued; but towards the close of the 11th his strength failed; and on the 12th, after a few loose stools, he expired.

DISSECTION.

HEAD. Cheesy hard lumps, and exudations of similar substance, but softer, with

inflammatory adhesions, of recent formation, along the course of the longitudinal sinus. Considerable venous congestion all over the surface of the *cerebrum*. The *plexus chorooides* inflamed. The lateral ventricles contained a great quantity of bloody serum. Considerable effusion on the *basis cranii*.

THORAX. The *lungs* healthy. The *pericardium* contained about a pint of fluid, slightly tinged with red. The right ventricle flaccid; the left unusually firm. *Aorta* natural.

ABDOMEN. The *liver* enlarged, extremely firm and vascular, and heavily injected with black blood. The *spleen* enlarged and highly vascular. The *gall-bladder* distended with bile, not differing, in colour or consistence, from natural. The *stomach* contained a quantity of greenish fluid; its internal coat inflamed at different points. The *duodenum* slightly inflamed. The *jejunum* gangrened at the distance of three inches from the *duodenum*. The *cæcum* distended with air, and floating, as it were, on the intestines. Considerable pres-

sure was necessary to force the air into the *colon*. The *colon* contracted and empty; and the state of the *rectum* was similar to it. The *mesentery* yellow in some parts, inflamed in others. The urinary bladder contracted. The *radial artery* so diminished in size as scarcely to admit a small pin. On cutting into that part of the *jejunum* which was gangrened, grumous blood appeared, with which the internal contiguous portions of the intestines were thickly covered.

CASE IX.

GENARO VICARIO, a young man of robust habit and considerable muscular power, was admitted into the hospital at Xerez on the 11th November 1820, labouring under epidemic fever. The disease, at first, appeared in a mild form, but, on the third day, the symptoms became serious. *Hiccup* and *dyspnœa* set in on the 6th, and he died on the 9th. I examined the body a few hours after death, in presence of the attending physician of the hospital.

DISSECTION.

THORAX. The *lungs* collapsed. The right pale; its convex surface adhering, in several parts, to the *pleura*. The left *lung* inflamed. The *heart* was preternaturally enlarged and collapsed. The left *auricle* and *ventricle* full of blood, resembling tar in colour. The right *auricle* and *ventricle* empty. The *pericardium* contained about four ounces of fluid of yellow colour. The *aorta*, before its bifurcation to form the iliac arteries, was extremely small, destitute of blood, and of a yellow tinge internally.

ABDOMEN. The *liver* pale, compacted, and destitute of blood. The *gall-bladder* considerably distended with bile, not unlike *molasses*. The *spleen* enlarged and distended with black blood. The *stomach* greatly distended; pale externally; internally lined with slimy mucus, of a greenish colour, and so gelatinous in its nature as to form strings and bubbles when detached from the villous coat. The internal surface of the stomach was not inflamed: the villous coat was

natural. This organ contained about a pint of fluid which appeared to consist of blood and bile. On a superficial examination it resembled blood in a state of putrefaction; but on straining it, from an elevated position it manifested the colour and tenacity of the contents of the *gall-bladder*. The *omentum* was brown; no marks of inflammation. The small intestines were all diseased; the villous coat black and lined with slime resembling that which adhered to the internal surface of the stomach. The *cæcum* was gangrened to the size of half a crown. The *colon* and *rectum* contracted. The urinary bladder diminished in size. The *pelves* of the kidneys were distended with urine. The cellular membrane, about the breast and abdomen, was yellow in some parts; brown in others.

To the foregoing cases I shall now subjoin two of which I had the exclusive management.

CASE X.

ANTONIO MORATELLI, aged nineteen, was taken suddenly ill on the morning of the

6th November; and I visited him in two hours from the time of attack.

Forehead painful; throbbing at the temples. Face flushed; the eyes dull; lips dry; thirst urgent. The tongue clean; pulse 78, hard and wiry. Skin moderately hot, dry, and rough to the touch. The stomach and abdomen painful on pressure. Distressing pains of the inferior extremities. Bowels constipated. No chilliness.

Venæsection to two pounds and a half. A purge of calomel and jalap.

Evening. The headach, which had been relieved by the bleeding, returned; but in a mitigated degree. The extremities free from pain. The tongue white; thirst urgent; lips parched; the eyes glistening, watery, and surcharged. Cheeks flushed. Partial sweats. Bowels still constipated. Pulse 77. The abdomen tense, distended, and slightly pained on pressure. Respiration hurried.

Purgative enemata. A cathartic mixture of infusion of senna with salts.

Nov. 7. The enemata were returned without effect. Patient became chilly about nine o'clock last evening, and shook a little.

The purgative mixture was retained, and produced several copious stools. Head slightly affected. Eyes more cheerful, and of a pearly whiteness. The cheeks pale; tongue white as paper. Pulse 70, and regular. Bowels distended. Urine scanty.

Calomel, nitre, and opium every two hours; fomentations to the lower extremities, and frictions with camphorated oil.

Evening. Skin below the natural heat. Lassitude and languor. Vomited copiously at one o'clock. A copious evacuation downwards at the same time; colour black.

Calomel and opium.

Nov. 8. Bowels well evacuated during the night. Gums swollen, but no salivation. The tongue white, moist, and covered with a clammy white froth. Thirst continues. The cheeks dark red. Head free. Pulse 70. Skin hot.

Camphor, calomel, and opium in large doses.

Twelve o'clock A. M. Vomiting troublesome since morning; the matter ejected brown and slimy. Heat of surface below natural. Feet cold. Skin flabby. Pulse 80,

and feeble. The abdomen not painful on pressure. The countenance distressed and dull.

A blister to the epigastric region, and another to the nape of the neck. Medicines repeated; some wine; the body to be rubbed with camphorated oil.

Evening. Not better. Blisters not acting.

Pediluvium. Frictions to be repeated.

Nov. 9. Passed a bad night. Low delirium. Has had three black, watery evacuations. The countenance grim. Head free. An increase of pain in the lower extremities. Legs cold. Abdomen painful on pressure. Respiration hurried. Pulse 70, and feeble. The temporal artery not to be felt.

While I am taking this report, he grows more restless. Pulse scarcely perceptible at the wrist. Complains of pain at the stomach. Black vomiting.

Medicines repeated. A purgative draught of tincture of myrrh and aloes. Frictions to be continued. Blisters to the calves of the legs. Wine in small quantities.

Evening. Pulse not perceptible. Has

vomited frequently since morning. Extremities quite cold. One inky stool at three o'clock.

Nov. 10. The pulse perceptible, but weak. Delirium. The coldness of the extremities extends upwards. Acutely sensible of pain from the blisters. Petechiæ appear all over the body.

Wine ad libitum.

Nov. 11. Pulse not perceptible. Skin yellow. Extremities cold. Colliquative sweats.

Died at twelve A. M.

DISSECTION.

THORAX. *Lungs* collapsed. *Pericardium* contained little or no fluid. The *heart* yellow: some bloody serum in the left auricle and ventricle. Right auricle and ventricle empty.—ABDOMEN. The *diaphragm* yellow. The *liver* of the natural size, but hard, and containing a large quantity of grumous blood. The *gall-bladder* large, and distended with black bile. The *stomach* highly inflamed, and covered with a glutinous slime near the cardiac orifice. The *duodenum* brown exter-

nally; darker internally, and containing a quantity of fluid resembling the black vomit. The *jejunum* partially gangrened, and exhibiting *introsusceptio* in three points;—two within five inches of each other; the third, distant about one foot from them, and the superior portion of the intestine overlapping the inferior in all. The *jejunum* likewise contained some fæces, mingled with matter resembling the black vomit: it was considerably distended with air, and the villous coat was brown and jelly-like. The *ilium* gangrened in parts, and its villous coat resembling the jejunum. The *cæcum* was brown externally, and contained fæces of some consistency. The *colon* distended with air, and approaching to a gangrenous state in many parts. The *omentum* and *mesentery* yellow. *Kidneys* and *pancreas* natural. *Aorta* empty, and of a yellow tinge internally. *Venæ cavæ* distended with air; little blood. The cellular membrane, all over the body, yellow.

CASE XI.

MISS PERI, a beautiful girl, twenty years of age, was taken ill with fever on the 11th

of October. I visited her in a few hours after the attack. Great pain of the head, particularly about the temples, which is increased by light. The countenance dejected, cheeks flushed, and the tongue foul. Insatiable thirst, and an inclination to vomit. Skin dry and cool; the abdomen painful, and an indescribable sensation of distress at the scrobiculus cordis. The inferior extremities painful. Dyspnœa.

Two pounds of blood taken from the arm. A cathartic of calomel and jalap. Fomentations to the lower extremities.

Evening. Headach and pains gone. Dyspnœa increased.

Reopened the vein, but had not taken more than five ounces of blood when she fainted.

Nov. 12. Reported to have passed a bad night. Is restless. Bowels well evacuated in the course of the night. Stools black. The countenance not at all improved. The eyes more inflamed. Tongue white. Thirst abated. Cheeks flushed. Distress at the scrobiculus cordis continues. The abdomen painful on pressure. The urine

scanty, and the symptoms of dyspnœa rather increased than otherwise.

Venæsection, to the quantity of a pound and half, when syncope supervened. Pills, composed of calomel, antimony, and opium, every two hours. Effervescing draughts, with the liq. ammon. acet.

Evening. Fever considerably increased, and the dyspnœa entirely gone off.

Pediluvium.

Nov. 13. The patient passed a good night: copious sweating followed the pediluvium, and she slept a good deal. The stomach was once sick during the night; and the appearance of the countenance is not encouraging.

The pills repeated. Broth and wine in small quantities. Friction of the body with camphorated oil. The pediluvium.

Evening. The patient better. Has had some sleep. The gums are sore. Slight ptyalism.

Nov. 14. Passed a good night. The ptyalism rather increased. Countenance improved. Spirits good. The tongue clean,

and thirst gone. Bowels open, and stools pretty natural. The skin is hot, and there is slight nausea at stomach.

Small doses of nitre, antimony, and opium, with effervescing draughts.

Nov. 15. Continues to improve. Ptyalism considerable. Moments of general tumult and agitation, but, for the most part, free from uneasiness. The pulse good. Complains of heat of the skin.

Nov. 16. Several copious, feculent stools in the course of the last night. Heat of skin diminished. General moisture of the surface.

Nov. 17. Convalescent.

CHAPTER VI.

SYMPTOMS OF THE YELLOW FEVER, AS MANIFESTED IN THE NERVOUS, OR SEROUS TEMPERAMENT.

I AM now to exhibit another *variety* or *form* of this disease, different, in many respects, from that which I have just described. This classification I have been led to adopt for the sake of brevity; and because I think, that under those two heads every thing necessary to be said of the yellow fever may be comprehended.

The second form in which the yellow fever presents itself, is by far the most common and dangerous: it is particularly characterized, in the commencement, by a deficiency of vital heat; by impaired sensibility; and by a sudden withering, if I may so call it, of the whole frame. The patient, at one moment in a state of perfect health, is, the very next, struck by some power that at

once deprives him of all his energies, transmutes him to a living corpse, and marks him for the grave. He resembles a blighted plant, from which all the characteristics of health and vigour are gone, while the stem for a time retains just a sufficient degree of freshness to assure us of the nature of the injury. Without any previous notice, the patient, in these cases, is instantaneously attacked, and throws himself upon the bed. When questioned as to his state, he is unable to give any rational account of himself; and the physician finds it difficult sometimes to make any thing out of the confused mutterings by which alone the patient denotes a consciousness of such questions as are put to him. He is generally peevish, fretful, restless, and chilly, about the period of invasion. The chills, which are usually slight, sometimes continue for a few minutes only; but more commonly they terminate about the third or fifth hour. There is no evident symptom of fever present. The tongue is clean; the skin cool and dry. The eyes are bloodshot, and the countenance is stupid and comatose. Headach and pains of the extremities set in after a short time; and

as they increase in violence, the chills diminish. Febrile heat, not of high temperature, but of a caustic pungency, supervenes, appearing first about the head, and finally diffusing itself all over the trunk. The head, although not violently pained in general, is much implicated; and the intellectual powers are more or less impaired. There is, at times, an involuntary tossing of the head, by the patient himself; but, upon any attempt made by others to move it, he evinces a great degree of irritability, as if he were amazed and distressed by the disturbance. The countenance is, almost always, deadly pale, with the exception of the cheek, which is generally of a deep red*: it is sometimes agitated and grim; sometimes pale and desponding; the expression careless and indicative of internal mischief. The eye exhibits considerable variety; it is frequently red and painful, impatient of light, and agitated; red and painful, watery and glistening; pretty natural in appearance, but difficult to be moved; white, glossy, and

* I look upon the circumscribed redness of the cheek as one of the most fatal symptoms in this disease, when the other parts of the face are pale.

painful. In some cases the conjunctiva assumes a blueish cast, and is surcharged with blue vessels, while the cornea is watery and glistening. This eye is frightful to look at, and invariably indicates a malignant disease. The eyebrows are frequently knit or contracted. The lips are generally pale, sometimes the reverse. The mouth is dry and parched, the breath hot and pungent, resembling a diffused blast from a distant furnace; or clammy, moist, and cool. The tongue is clean for the first six or seven hours, often dry, but it becomes white in general after that period. It is so changed in appearance in some instances, as to induce a person who had not seen the like before, to believe that it had been rubbed over with lunar caustic. It is sometimes red and clammy; brown, dry, and slightly loaded; white, and covered with spots resembling petechiæ; hard, thick, and swollen. I have seen a case wherein one half was blue as if approaching to gangrene, the other half red. The man recovered. He was a patient in the hospital SAN JUAN DE DIOS at CADIZ. The tongue is so dry and

hard at times, that it cracks deeply in various parts, and bleeds freely. There is little thirst in the beginning, and seldom even in the advanced stages, particularly in those cases which terminate fatally. The skin in general is below the natural temperature, dry, thick, and constricted; it is occasionally flabby, damp, and greasy. The temperature of the lower extremities is mostly under that of the trunk; the feet are frequently cold. The pulse is slow and contracted, sometimes irregular, the average range between 80 and 90 pulsations in the minute. The stomach is usually irritable; the matter rejected is ordinarily of a turbid watery nature, or of a ropy consistence in the early stages; in the advanced periods it is dark, turbid, and black. Vomiting, although a common symptom, is not always present; cases terminate fatally without it; but nausea is rarely absent. The patient often complains of weight and heaviness about the stomach, to which the Spaniards give the name of *fatigas*. The abdomen is tense and painful, the pain slight in general, but capable of being rendered acute by pressure.

He passes black stools which deposit a black and gritty sediment, but are rarely, if ever, feculent; they are sometimes watery and copious, sometimes slimy and small, and frequently mixed with flaky substances, apparently abrasions from the internal coats of the intestines. The urinary discharges are very irregular, sometimes scanty and high-coloured, often suspended altogether. As the disease advances, the pulse frequently disappears at the wrist. The coffee-coloured vomiting appears; the patient screams violently on some occasions; upon others the body becomes covered with petechiæ. The parotid glands enlarge in a few instances; and these symptoms continuing and increasing, life is destroyed on the fourth or fifth day, but sometimes at a much later period.

The symptoms enumerated generally mark this destructive disease; they are liable to changes from various causes; but in general there is on the first day restlessness, a want of vascular energy, a deficiency of vital heat, a dry and constricted surface, inexplicable anguish at stomach, a par-

tial or total suspension of all the secretions and excretions, nausea or vomiting, a countenance extraordinarily changed from common, with a peculiar malignancy of expression; slight headach, and coldness of the extremities. These symptoms continue for two or more days, and are finally succeeded (when the issue is fatal) by a withering of the surface, black vomiting, eructations of wind from the stomach, obscure hickup, and death.

I cannot say that I have observed periodical changes during the two first days; but on the third, fifth, or seventh, either febrile heat of high temperature supervened, or depression took place which was speedily followed by death.

The first perceptible change in the condition of those who were so fortunate as to recover, was, an increase of vital heat, an accession of fever about the third, fifth, or seventh day; a change for the better in the countenance; and an abatement, or cessation, of the screaming, if such had existed. These favourable changes usually took place

in those whose systems became rapidly saturated with mercury; and the course of the distemper, after this period, and up to that of convalescence, was pretty similar to what has been described in the inflammatory form of the disease.

It was very remarkable in many cases, that although it was impossible, by any effort, to excite the attention of the patient, or to induce him to raise his head, even for a second of time, from the pillow, he would, notwithstanding, upon feeling an inclination to empty his bowels, suddenly jump from his bed, stagger to the night-chair, and, after accomplishing his purpose, return to the bed again, and relapse into the same lethargic state. It is also deserving of remark, that although the surface of the body was sensible to ordinary *stimuli* (to the irritation of a fly, for instance), blisters seldom made any impression upon it in the advanced stages.

When the depletory system of treatment was not carried to sufficient extent during the incipient stages, *in all forms of the yellow*

fever (where the termination was favourable), a bright yellowness of the conjunctiva, neck, and breast, was conspicuous on the third or fourth day, which gradually spread all over the body, increasing in brightness as the disease advanced towards convalescence. When the issue was fatal, the skin assumed a leaden colour about the termination of the second or beginning of the third day; sometimes at a later period, if the disease was slow in its course. Those appearances were not common when the evacuating plan was duly attended to; for, a general yellowness of the body was not then observable in the majority of instances, but a change in the conjunctiva alone. A distinct crisis was uncommon when the disease was actively treated; commencing salivation betokened the ostensible subsidence of the febrile process: but when left to nature, or treated on the palliative plan, the critical periods were visibly marked by copious evacuations, viz. hæmorrhages from the nose, mouth, anus, bladder, vagina, &c. or by abundant feculent discharges, sweats, hypostatic urine, &c.

CHAPTER VII.

TREATMENT OF THE YELLOW FEVER, AS MANIFESTED IN THE NERVOUS, OR SEROUS TEMPERAMENT.

IT is incumbent on me to acknowledge that my treatment of this form of the disease (particularly when I first undertook it) was far from being successful; but, at the same time, I have the satisfaction of reflecting that I was much more so than the Spanish physicians. Between the malignity of the disease and the deficiency of the means by which it was most likely to be successfully combated, I had, but too often, the mortification to see my patients die, in spite of every effort I could make to save them. In the majority of cases every hour aggravated the symptoms, and left not a ray of hope, from the first moment of the attack to the period of its fatal termination; while in others (to the medical attendant, by

much the most annoying and harassing) it was not uncommon to find a patient beyond the possibility of recovery in the evening, who upon the morning of the same day had given every promise of amendment.

It so happened that my practice in this form of the disease was limited; but I had abundant opportunities of seeing the hospital practice in *Cadix* and *Xerez*; and I can safely assert, that, out of more than 100 patients, who were severely attacked, and who were treated by the Spanish physicians, not one recovered. This may appear an exaggerated account of the mortality, but the Spanish physicians will not attempt to deny it; and I mention the fact only to show how completely the disease was beyond the reach of medicine.

In some of the first cases that occurred to me, I tried bleeding, purgatives, fomentations, friction with warm oils, antimonials, and blisters, without effect: at length, finding all other remedies fail, I had recourse to *emetics*, and to these principally I am in-

clined to attribute the recovery of the few who did not fall victims to the disease.

With regard to the general mode of treatment, I would recommend that the patient, on the first day of the attack, should be immediately placed in a hot bath, and left there until the body is thoroughly heated, or, in other words, until a degree of artificial fever is produced. He should then be rubbed dry, and covered, in bed, with more than the usual quantity of clothes. If, after he has been in bed for half an hour, reaction takes place, I would then advise the abstraction of a small quantity of blood: but if he continues cold, I would only repeat the bath. Recourse should next be had to emetics; and as the *subsulphas hydrargyri*, or turbith mineral, and ipecacuanha (in the proportion of six grains of the former to five of the latter), will be found effectually to unload the stomach, without much straining, I would recommend it in preference to any other. After the operation of the emetic, calomel and James's powder should be exhibited in the proportions of five grains of the former to three of the latter, in the

form of pills, every two hours ; with a view of preserving an open state of the skin and bowels, and of affecting the system. The head should be shaved, and blisters applied to the temples and nape of the neck, while the head is kept cool by means of cold applications. The skin should be rubbed over with heated oils when there is much dryness and constriction. The *pediluvium* and fomentations may always be used with advantage. *Opium*, *camphor*, and *ammonia* should likewise be had recourse to, where the prostration of strength is great. The *liquor ammoniæ acetatis*, effervescing draughts, wine, and the mineral acids, may also be tried, according to circumstances ; but *emetics* are the remedies upon which our greatest reliance is to be placed. In two forlorn cases I tried a weak solution of the *argentum nitratum* with a view of checking severe hiccup, and it certainly answered the purpose for which it was intended : the patients did not recover ; but as it stopped the hiccup and procured rest, I think it right to mention it as a remedy which may be tried without detriment in such cases.

The epidemic was nearly over before I thought of giving a trial to emetics; but the results, in the cases in which they were administered, afford me every reason to believe that they will be found an invaluable remedy in the yellow fever. I made use of them in seven cases, in all of which they produced copious slimy vomitings, followed by immediate relief of the præcordial distress. I generally repeated them three or four times in the course of four-and-twenty hours; and of seven who were thus treated, only one died.

In the case of a young woman named DOMINGO MIHIO, where an emetic of the subsulphas hydrargyri was administered early, the disease was cut short, and she was convalescent on the second day. I would, therefore, strongly recommend a fair trial of this remedy in the yellow fever; for I am disposed to think (and the opinion is formed upon practical observation) that vomiting, whether arising spontaneously, or brought on by medicine, at an early period is highly advantageous. Throughout the whole of this disease, and particularly of the second

form of it, the stomach appears to be the organ primarily and principally affected; and there cannot be a doubt but that it is of the utmost consequence to free it, without delay, from the black and putrid matter with which it is oppressed, before it be conveyed, by absorption, into the system.

By the timely use of emetics, I was fortunate enough also to preserve the very valuable life of Mr. *Mitchell*, of the house of *Gordon* and Co. at *Xerez*. His case was one of the worst I saw, and he was saved by keeping up a constant vomiting for several hours. The discharge was spontaneous at first, and of a light green colour, but which soon changed to a darker hue. The parotid glands rapidly enlarged to a considerable size; the vomiting became black*, and the skin assumed a leaden colour. At this

* The blackish liquor which is, occasionally, ejected from the stomach in great quantities, during the course of this fever, does not strictly constitute what is understood by the *black vomit*. The former is a slimy semi-transparent fluid; the latter exactly resembles *coffee-grounds*, and is seldom seen but in the last stages of the disease.

time I began with the emetics, and repeated them at intervals of six hours, until the stomach was freed of an enormous quantity of the black-coloured fluid. The bowels were kept open by *calomel* in large doses, which quickly affected the system; and no untoward symptom afterwards occurred except a retention of urine, which was easily removed by the warm bath.

A Return of Admissions, Discharges, and Deaths from epidemic Yellow Fever, in the Siguenza Hospital at Xerez, between the 24th of August and the 21st of November 1820.

ADMITTED	201
DISCHARGED	73
DIED	112
REMAINING	16

N. B. Amongst the discharged were several slight cases, and some not of the epidemic kind.



I shall now present the reader with the cases and appearances on dissection of two persons who laboured under this disease.

CASE I.

QUAN MORATELE, aged thirteen, was taken ill on the morning of the 7th of November 1820. I attended a patient where this boy resided, and being in the house I had the opportunity of examining his condition at the instant the chill set in. The eye dull, heavy, and somewhat inflamed. The skin cool and moist. The tongue clean. Slight thirst. The pulse 80, and contracted. The loins slightly pained. Considerable irritability.

A purge of colomel and jalap.

Evening. The eye red and surcharged. The countenance sharp and distressed. The tongue white. The lips dry. The mouth clammy. The skin under natural temperature. The pulse 84, rather more expanded than in the morning. Distress at stomach. Slight pain on pressing the abdomen.

Bled to the extent of ten ounces*. Calomel and opium at bedtime. The pediluvium and fomentations to the abdomen.

*The propriety of bleeding may be questioned in this case, without the auxiliary aid of the warm bath. It was resorted to, principally with the view of increasing susceptibility of impression, in order that the system might be the more readily acted upon by the calomel.

Nov. 8. Reported as having passed a good night. Three dark-coloured stools. The eyes surcharged with blue vessels; painful on motion. No headach. The tongue white and covered with froth. The lips pale and dry. A circumscribed flush of the cheeks. The skin rough and dry, under the natural temperature. The urine scanty. No pain whatever.

Calomel, nitre, and opium, in form of pills, every two hours. The pediluvium, and friction of the skin with hot stimulating oils.

Evening. There is a tendency to coma. The eye is dim and highly inflamed. Low delirium. The feet cold. Pains in the lower extremities. The pulse free and expanded, destitute of force. The skin below natural heat, dry, thick, and withered. The tongue white and clammy. The breath hot. The aspect wild. The stools black and slimy.

Blisters were applied to the nape of the neck and epigastric region at three o'clock; but they make no impression. Fomentations, frictions, &c.

Nov. 9. Reported as having slept well. One copious stool in the night. Coma. At nine o'clock the pulse became wiry and frequent; the limbs cold and flabby. Complained of distress at stomach. Restlessness and irritability set in; and he vomited black.

Evening. The countenance is more natural. The tongue clean at the edges. Considerable debility. The pulse unenergetic, expanded. Low delirium. The conjunctiva tinged with yellow. The skin of a dingy yellow colour. Obscure hiccup.

Calomel, camphor, and opium. Fomentations to the abdomen. Solutio nitratis argenti gr. iij ad ℥j.

Nov. 10. Delirium, and an uncommon degree of restlessness during the night. Frequent vomiting of black matter. Groaned and screamed incessantly. When asked where the pain was, he answered, that he had none. He still screams loudly. The extremities are cold and flabby. The pulse not perceptible.

Died at four, P. M.

DISSECTION.

I examined the body two hours after death.

THORAX. The *lungs* pale and sound. The *heart* bloodless. The *pericardium* contained its usual quantity of fluid.—**ABDOMEN.** The *liver* was harder than natural, and pale. The *gall-bladder* contained a large quantity of viscid, black bile. The *stomach* was distended with air; pale externally, and still more so internally: it contained a small quantity of matter resembling that of the black vomit, and the internal surface was covered with glutinous mucus, which, when rubbed off, discovered a pale, healthy surface, with the exception of a few red spots at the cardiac orifice. I do not remember to have seen, even in animals which were bled to death, the abdominal contents so pale. The *bladder* was pale and distended with urine. The *kidneys* paler than usual. The *omentum*, and all the intestines, were pale and without blood, except that portion of the *ilium* which is united with the *cæcum*, and which was gangrened for five or six inches, with-

out any evident marks of inflammation in the contiguous portions of the intestines. The villous coat of the intestines resembled that of the stomach, except in the gangrened part, which was clotted with blood. The *aorta* and *venæ cavæ* were bloodless, and, internally, of a yellow tinge, the former particularly.

Of the state of the head I can give no account. The dissection, so far as I went, was performed by stealth, and at the hazard of being surprised by those who would, probably, have handled me very roughly, had they detected me in the operation. I was acting indeed with the permission of a French gentleman, who owned the house in which the patient died; but so great is the aversion of the Spaniards to any examination of the sort, that I was obliged to forego the more tedious operation of laying open the head.

CASE II.

TREATED BY A SPANISH PHYSICIAN.

SAMUEL MARTIN, aged twenty, was admitted into the hospital SAN JUAN DE DIOS,

at Cadiz, on the 2d of September 1820, labouring under fever. The forehead painful. The tongue white, moist, and loaded. The eye red and painful. The lips dry. Thirst. The skin moderately heated. The bowels constipated. The patient stated, that the attack was sudden, and not preceded by chills.—On the second day, the skin was dry, parched, and rough. The headach increased. No change in the state of the eye. The tongue red and dry. The lips pale and shrivelled. The pulse 79, expanded and destitute of force. The countenance anxious and wild. The stomach irritable. General restlessness and want of sleep. Slight pain of the abdomen and black stools.—On the third day, the skin was constricted and hard. The countenance anxious and wild. The tongue red and hard. The cheek red and circumscribed. The pulse contracted and irregular at times. One scanty, black, and offensive stool in the night. Urine scanty and fetid. Much restlessness. The skin of a dingy yellow colour.—On the fourth day, there was much restlessness. The head was tossed frequently from one side to another. The countenance inanimate, anxious, and

wild. The tongue brown, dry, and hard. The pulse feeble. The extremities pained. The abdomen tense and painful. An intolerable sensation of heat at the scrobiculus cordis. The skin cool, dry, withered, and thick. Blood oozes from the nose and gums.—On the fifth, black vomiting. The countenance expressive of anguish. The face of a yellow colour. The conjunctiva of a yellow tinge. The cornea dim and opaque. The pulse intermitting. The urine suppressed.

Died on the morning of the seventh day.

DISSECTION.

Examined in four hours after death.

THORAX. The *lungs* collapsed; adhesions to the *pleura*. *Heart* bloodless, yellow, and seemed distended with air. *Liquor pericardii* bloody. Internal coat of the *aorta* slightly inflamed, and of a dirty yellow tinge. The artery itself seemed contracted. The *vena cava ascendens* inflamed internally; bloodless, and distended with air.—**ABDOMEN.** *Stomach* moderately distended with air: a small quantity of greenish-coloured mucus

adhered to the whole of the internal coat, which was gangrened towards the cardiac orifice. The quantity of fluid contained in it was small, and resembled what the patient had vomited previous to death. The *liver* and *spleen* were sound. The *gall-bladder* was not enlarged, but contained black bile somewhat more liquid than usual. The *pancreas* was gangrened, at its right extremity, to the size of a shilling. The *duodenum* contracted in parts. The *cæcum* entirely gangrened. The *colon* and *rectum* were likewise gangrened in many parts, but without any appearance of inflammation in the neighbouring portions of the intestines. *Urinary bladder* distended with urine; and the *heart*, *arteries*, and *veins*, destitute of blood, owing, most probably, to that consuming process which so peculiarly distinguishes this form of the disease.

CASE III.

ANNA LOPEZ, aged sixteen, was attacked with fever, in its most concentrated form, on the 15th of October. I visited her in a few hours subsequent to the period of inva-

sion. The attack was sudden, and not preceded by chills. The eyebrows were knit. The countenance agitated and grim. The cheeks flushed. The lips pale. The eyes red, painful, and impatient of light. The tongue rather white. The thirst trifling. Slight headach. Considerable mental derangement. The skin not much heated above natural. The feet cold. The pulse 90, contracted and irregular. The abdomen tense; slightly pained. The bowels constipated. The urine scanty. No irritability of stomach.

A purge of calomel and jalap. The pediluvium.

Evening. One fetid black stool. The head painful. The heat of the surface greater than in the morning. The feet warm.

Bled to the quantity of fifteen ounces. The pediluvium to be repeated.

Oct. 16. The head was relieved by the bleeding. Was once purged during the night. Has been in a lethargic state for several hours: when roused, the eyes are opened, but peevishly shut in an instant. Delirium. The countenance ghastly and

grim. The tongue white, not loaded. The lips pale and shrivelled. The skin constricted and dry. The pulse 80, expanded. The feet rather cool. The stools black and watery. The urine secreted in very small quantity. Neither nausea nor vomiting.

Calomel, antimony, and opium, in form of pill, every two hours. The pediluvium, and friction of the skin with hot stimulating oils.

Oct. 17. Coma and delirium. Has been restless and irritable during the night. The pulse more expanded than yesterday; destitute of force. The feet cold. The thirst inconsiderable. A slight hæmorrhage from the vagina. The abdomen painful. The urine suppressed.

The calomel, antimony, and opium, to be continued. Camphorated mixture, and the liq. ammon. acetat. The pediluvium, and fomentations to the abdomen.

Oct. 18. Coma, delirium, and restlessness, since last report. The heat of the body below natural. The feet cold. The pulse 78, free, and destitute of force.

The pills to be continued. The pediluvium, and fomentations for the abdomen.

Evening. Black vomiting about an hour since, the quantity small. She is now sensible for the first time. The aspect is better. The feet cold. The pulse resembles the pulse of health. The tongue moist.

Calomel, ammonia, and opium in the form of pill every two hours during the night. Wine, brandy, &c.

Oct. 19. Screams incessantly. The delirium recurred with violence. The stools are numerous, black and watery. The lower extremities continue cold. The pulse as yesterday. The urine suppressed. The tongue clean. The countenance expressive of anguish.

Died on the 20th.

CASE IV.

MARIA BASSARIO ROTI, aged nineteen, was attacked on the 16th of October with the epidemic fever. I visited this patient with *Bartholomew de Maria* (physician to the civil hospital), who expressed a wish to see my mode of treatment. On examining

the patient we found that the disease was not yet formed, the chills being rather severe. I ordered her some purgative medicine and the pediluvium, with the view of restoring heat to the lower extremities, which were then exceedingly cold; and we fixed upon an hour for an evening visit. We accordingly met at the appointed time. The chills had subsided. The heat of the surface was rather beyond natural. The head painful. The eye heavy, red, and painful. The countenance confused. The abdomen painful on pressure. The urine scanty; and the pulse was small, but possessed of elasticity. The Doctor was of opinion that the lancet was not admissible in such a case; but upon my assuring him that the pulse would be benefited by the abstraction of blood, he seemed anxious that the experiment should be tried. After the patient lost about fourteen ounces of blood, the pulse rose, and the headach and pains of the extremities subsided. The Doctor was pleased to express his satisfaction at the speedy amendment which was in this instance produced by the lancet; and I have no doubt, but that he

has had, ere this, ample proofs of its utility in similar cases.

An emetic was given.

On the second day the symptoms were rather urgent. The headach had not returned; but the skin was dry and constricted. The countenance was anxious and wild. The eye red. The cheek flushed. The lips dry. The tongue white and dry. The thirst inconsiderable. The abdomen painful on pressure. Distress at the scrobiculus cordis. The feet somewhat under the natural temperature. She screamed incessantly. A large blister was applied to the epigastric region. The abdomen was fomented. The pediluvium was resorted to. Calomel, antimony, and opium, were administered in large quantities, so as to affect the system in a short time; and she was convalescant on the seventh day.

CASE V.

MARIA VEHUSEE BADEDÓ was taken ill about the 10th of October, and visited by DOCTOR RIBERO, who paying a few visits declared that she could not survive the

attack ; and consequently requested that the friends might dispense with his attendance. When I examined the patient, which was on the 12th, the pulse was contracted and sharp. The countenance gloomy. The eye bright and glossy. The head slightly affected. The cheek flushed. The eyebrows knit. The lips pale and dry. The tongue dry and white. The skin arid. The feet colder than natural. Slight pain on pressing the abdomen. Distress at the scrobiculus cordis. The stools black and watery.

Bled to the quantity of fourteen ounces, which evidently produced benefit, and was ordered a purge of calomel and jalap. The pediluvium, and fomentations for the abdomen.

On the 13th she seemed worse. The distress at the scrobiculus cordis was great. The countenance was careless, grim, and distressed. The skin dry and constricted. The feet cool. General restlessness and irritability. The pulse contracted. The urine extremely scanty. The stools scanty and black.

Calomel, antimony, camphor, and opium. The pediluvium and fomentations to be repeated. Friction of the surface with hot

stimulating oils. Blisters to the epigastric region and nape of the neck. On the 14th the patient was much better. The symptoms of distress had subsided during the night; and she continued to take the pills until the system became affected; after which her recovery was most rapid.

APPENDIX.

ON THE SUPPOSED INTRODUCTION OF THE YELLOW
FEVER INTO THE TOWN OF XEREZ DE LA
FRONTERA IN THE YEAR 1820.

THE Spanish physicians in general, and the majority of the people, believed in the doctrine of importation; they supposed that the yellow fever could not appear in the towns of Andalusia without the intervention of a foreign agent; in consequence of which, whenever an epidemic took place in any of the seaport towns, its origin was attributed to the introduction of contagion through some channel or other. They were not in general very particular in their investigations on the subject; for reports, however vague and improbable, operating in favour of their preconceived notions, were quickly propagated throughout the country, and finally believed by all the people; while those of opposite tendency were little, if at all, attended to, and were soon overlooked without any attempt to ascertain their correctness. The appearance of the yellow fever in Cadiz and Xerez in the year 1820, without a possibility of its introduction from a foreign source, has thrown some light on the subject, which we may hope will ultimately produce a beneficial effect. When the epidemic yellow fever made its appearance in

Cadiz and Xerez in the year 1820, the reports in circulation, which were credited by the people, were very inconsistent in themselves, and contrary to the common nature of things. One party contended that the fever was imported from Gibraltar in some bales of goods, which were deposited in certain houses in Xerez; another would have it, that silks were smuggled into Cadiz over the walls in the night-time, and distributed among the people, in that part of the town wherein the epidemic made its first appearance; while a third asserted that it was brought from Cadiz to Xerez in the person of a woman named *Jeronima Contreras*, who it was said arrived in the latter place on the 10th or 11th of August, and hired herself as servant to *Dona Manuella Rameiro*, at whose house she only remained two days in consequence of indisposition. After this she repaired to the abode of an old friend, named *Consolation*, who resided in a house called *Cartuja*, in the *Calle de Arcos*, where she remained only a few days, before she was removed to the hospital *de la Sangre*, where she shortly afterwards died of a disease which her attending physician, Dr. *Ribero*, declared was not yellow fever. The disease having made its first appearance in the house in which this woman lodged, gave a plausibility to the report of importation through that channel; and in consequence of Dr. *Ribero's* opinion, a board of medical men was ordered to investigate the subject, with the view of ascertaining whether or not it was correct. Much time was spent in the investigation, but it could not be ascertained whether she had been in Cadiz or not during the specified time. I requested the particulars from the Board of Health, and was politely favoured with the following account:

“ On the 10th or 11th of August 1820, a young woman named *Jeronima Contreras* arrived in Xerez from Cadiz, and hired herself as servant in the house of *Dona Manuella Rameiro*, in the street called *Torneria*, where having scarcely been two days, she became slightly affected with fever, apparently proceeding from a cold, which, however slight, rendered it necessary for her to leave the house, and apply for assistance at the habitation of an old friend of hers, named *Consolation*, who resided in the house known by the name of *Cartuja*, in the street called *Arcos*, and who received her from motives of friendship which had long existed between them, having formerly lived as servants together in the house of *Joseph Gaona*, now of this town. In this house she remained two days, where she was visited by *Maria Roman*, a lady of some property, who charitably gave her some soup with a view to promote perspiration; but to no effect. According to the report of some of the family, the symptoms most conspicuous were a high and acute fever; her face red; her eyes heavy and red; frequent dejections, &c. As the treatment could not be undertaken in this house, she was removed to the hospital *de la Sangre*, where she died on the sixth or seventh day from her invasion.

“ On the 14th, 15th, and 16th of the same month of August, eight persons living in the same house of *Cartuja*, a man in the street called *Aocla*, No. 1167, and two young persons in that of *Omaria*, second house on the right hand side from the street called *Arcos*, were attacked by a disease, which even at the beginning was not looked upon in the light of yellow fever. Of the eight first mentioned persons, five died as follows:

“ 1st. One on the third day. He was a young man from twenty to twenty-five years of age. Nervous symptoms; vomiting of blood, apparently without corruption; hysterics and black dejections.

“ 2d. A man thirty-six years of age died on the commencement of the fifth day with similar symptoms.

“ 3rd. An old man and a woman between the sixth and seventh day, both without vomits or nervous symptoms.

“ 4th. A girl aged fourteen on the eleventh day; but without having shown the aggravated symptoms of the yellow fever until the eighth day.

“ On the day succeeding the death of the three, who died almost at the same time, on the sixth, seventh, and fifth days from the period of their invasion, a consultation of physicians was held on the remaining sick, including a man who lived in the market-place, who, after being attacked, left the house of *Cartuja*, where he had been assisting some of his friends. After some deliberation on the part of the doctors, it was declared that the fever was malignant and contagious.

“ An attempt has been made to ascribe the introduction of this contagious disease to some goods, which were said to have been deposited in the house of *Cartuja*, but this in reality proceeds from a mistaken notion, as is evident from the following facts.

“ 1st. The place in which the goods were placed was the chapel of the *Desamparados*, in the house contigu-

ous to that in which the first cases appeared; and in the *Calle de Arcos*, corner house to that of *Omaria*.

“ 2d. The fever did not enter these three houses for many days after the contagion was proclaimed.

“ 3d. As the man who died in the market-place was by profession a smuggler, his death was naturally ascribed to the influence of these goods; but there is a greater probability in favour of the opinion, that the disease was communicated to him by those sick friends to whose care he contributed his aid.

“ 4th. The goods were removed and sold in the second, third, and fourth districts of *San Miguel*, where the epidemic fever did not appear till long after the whole town had been declared in a state of infection.

“ The reasons which influenced the public to suppose that the disease was introduced by the goods were, the invasion of a barber who lived in a street called *Francos*, and who died on the 26th of August; and also a servant of *J. C. Haurie*, Esq. who was attacked on the 23d of August, and died on the 27th. It was said that they were friends, that the one shaved the other, and that both had assisted in the conveyance and sale of the goods; but as the first assertion is proved to be false, Mr. Haurie's servant being in the habit of being shaved at a barber's shop in the *Plaza Plateros*, where he had undergone that operation but a few days before his death, the second also is improbable, as well for the stated reasons, as from the parts in which the goods were deposited hav-

ing only a very few sick.—No doubt therefore remains, but that the yellow fever was introduced by the servant woman who came from Cadiz, where she contracted the disease; as it had first made its appearance in *that city* *.”

The Commissary of the Barrier, or the officer who superintended the health concerns of the district, obliged me with the following concise account.

“*Mary Roman*, mistress of the Carthusian house, informed me, that *Jeronima Contreras*, aged twenty-eight years, fell sick on the 15th of August, in the house of the parish priest *Ramino*, and that afterwards she removed to the house of *Consolation*, in the street called *Arcos*; from whence, being sick five hours, she was conveyed to the hospital *de la Sangre*, where she died.”

With reference to the foregoing statements of the Board of Health, and Commissary of the Barrier, it appears that they are completely contradictory, and one must be incorrect.

I before mentioned that it was doubtful whether this woman had been in Cadiz or not; and if I am to credit the account given me by a respectable gentleman in whose service she had previously been, it is more than probable she was not there. I was informed by this gentleman

* This is not the fact; for there was not a case of yellow fever in Cadiz until several days subsequent to its appearance in Xerez.

that he met the woman alluded to on the 2d of August in the streets of Xerez, and that his servant had some conversation with her on the 7th of the same month, so that she had only a few days to go to and return from Cadiz. If this account be true (and I have no reason to doubt its authenticity), it gives strong grounds for the supposition as to her not having been in Cadiz; for the journey backwards and forwards is attended with expense rather too great for persons under her supposed limited means: nor is it probable that circumstances could have induced her to return to Xerez after so short a stay; for it was conjectured that her visit to Cadiz was merely a matter of speculation, there being a greater probability of her improving her condition (being a woman of the town, it was said) in a rich commercial city, than in a country town. Besides, allowing that she had been in Cadiz, it is difficult to conceive how she could have brought a disease from a city in which it did not actually exist: for the disease made its appearance in Xerez much sooner than in Cadiz; the first case having appeared in the latter place on the 19th of August, whilst she was taken ill in Xerez on the 15th.

The reports relative to this woman were so numerous, vague, and inconsistent, that I determined if possible to come at the truth by personal investigation. I accordingly visited the Carthusian house with Mr. *Haurie* the wine-merchant, who was then a member of the Board of Health. This gentleman, to whom I am greatly indebted for his unremitting attention to me at Xerez, who was always zealous in the cause of humanity, and particularly assiduous in every point connected with the health concerns of the town, volunteered his services on the occasion.

The woman from Cadiz, we were informed, lived in the house for twenty-one days previous to her indisposition. She was not the first, it was said, who was taken ill in the house; but they were unacquainted with the date of her indisposition. It was ascertained, however, that the husband and wife fell ill on the 17th, the boy soon after. They all died on the same day, viz. on the 26th or 27th. Two countrymen died a few days previous to the indisposition of the persons alluded to, in a neighbouring street (who had no communication with the Carthusian house), of a disease which was generally acknowledged to have been the yellow fever. Three deaths in one house at a suspicious season of the year attracted the attention of the Board of Health, and, as I before said, physicians were appointed to investigate the subject, who declared the disease to have been yellow fever. Guards were in consequence placed over the house, and all communication with the town was cut off. While the eyes of the public were attentively fixed on the infected house, the disease suddenly appeared in one of the adjacent streets, at the distance of 100 yards from the other, in the person of a countryman who had no communication with the infected house; nor had any of the family with whom he resided. A guard was immediately placed over the second house; but whilst the military were actively employed in preventing intercourse with the infected houses, a third case appeared in the large Carthusian house adjoining the small one; and guards were in consequence placed there. There was no communication, it was said, between the Carthusian houses. While the attention of the town was directed to the infected spot, an unexpected case appeared at the distance of one mile, in the house of

J. C. Haurie, Esq. and so blinded were the authorities on the score of propagation by intercourse, that an investigation was immediately instituted for the purpose of ascertaining whether the servant had been lately employed in smuggling, or not; but while this case was the subject of examination, the disease appeared at a distant point, about a quarter of a mile from Mr. *Haurie's*; observing a direct line from east to west. The cases at the extreme points now began to multiply; the futility of guards was soon perceived, the disease spread rapidly in those places where it made its first appearance, and continued there with unremitting severity throughout the epidemic season, assuming, particularly in the eastern extremity, a character of a more malignant and fatal nature than had been hitherto witnessed, for few of the infected escaped the destructive malady.

It not uncommonly happened, during the rage of the epidemic in question, that streets in which there was not a case of yellow fever, were surrounded on all sides by infected ones; and healthy houses attached to diseased, were occasionally situated in the centre of the sickly district, which escaped contamination, where no precaution whatever was taken to insure the safety of susceptible families. It not unfrequently happened also, and I witnessed the fact myself, that six, eight, ten, or every individual in the house who contracted the disease, fell victims to it; while, in the adjacent one, equal numbers sickened, without the occurrence of a single death. It would be difficult to discover what this extraordinary difference in the nature of the disease was owing to, the houses being constructed alike, and similarly ventilated:

the fatality can only be attributed, in the one case, to a more concentrated degree of epidemic influence, and consequent malignity; while, in the other, it was comparatively trifling.

From what I could collect from some of the old and respectable inhabitants of Xerez, who witnessed the different epidemics since the year 1800, it appears that the disease, in its incipient movements, generally observes a direct course, influenced, it is presumed, by particular winds (the east wind more frequently than any other), seizing upon certain parts, and producing a mortality in them, for the numbers attacked, surpassing considerably that of any of the other infected parts of the town: while the streets situated within the sphere of disease, continue free from the impression of it throughout the whole course of the epidemic.

This would lead to the supposition, that its influence emanates from particular points of the earth, that it strikes upon certain parts, exciting in some, from its higher degree of concentration, a disease of a nature so malignant, as even to differ materially from that which in other parts is produced by the same exciting cause, but so modified in its nature, as to give to the one, essential properties of which the other is totally destitute. This was strikingly the case in a few streets in Xerez during the rage of the epidemic of 1820, where, in a well-formed disease, no mode of treatment seemed to make forcible impression, and the patients usually died within a short period from the hour of invasion.

It may not be unimportant to remark in this place, that some of the people of Xerez, from the numerous epidemics with which the town has been affected, and from the unaccountable appearance of that of 1820, imagine that the disease which was formerly of foreign origin, is now become the inherent endemic of the country; brought into activity occasionally, by local or atmospheric causes, assuming a type more or less malignant, according to the nature of the predisposing cause. This supposition has lately engrossed the ideas of the enlightened, and even staggered the belief of the prejudiced rabble, some of whom are now doubtful, as to whether it may not take place without importation from a foreign country; from which cause, many whose occupations in life prevent the removal of their families into the country during the rage of epidemics, use no precaution whatever to secure themselves or generation from attacks of the disease: on the contrary, the lower classes, who generally maintain the doctrine of predestination, and who, if we judge from external appearances, are regardless of the consequences, and the misery which this destructive disease entails upon them, endeavour to expose the younger branches to its impression, from a well-founded supposition that young persons escape in much greater proportion than middle-aged or old ones. They even go so far as sometimes to inhale the breath of persons whose attacks are slight, in order that they may be affected by a similar malady.

Seclusion and locality, however complete or good, were not latterly considered as safeguards. Space and ventilation during the epidemic in question seemed to

have been most useful, as few sickened in the broad well-ventilated streets and squares, notwithstanding their great commercial intercourse with the infected parts of the town. This was not always the case; for, during the rage of former epidemics, the broad and well-ventilated places suffered most; while the ill-ventilated parts were in a manner free from the disease. It is a singular fact, that in that part of the town which was most affected in the epidemic of 1819, few were attacked during the rage of that of 1820. This was attributed to the surviving population having passed the disease during the preceding epidemic, and their not being in consequence susceptible of second attacks: but this supposition was not correct; for I visited several of the houses, and found that there were few in which there were not persons who never had the disease. I mention this fact for the purpose of showing that there were certain parts more directly under epidemic influence than others: for the extreme points to the east and west, the most filthy and worst ventilated, suffered most severely: the central, or most frequented parts, were comparatively little affected; while the circumjacent points were in a manner free from fever, there being only a few cases at distant intervals.

QUERIES AND ANSWERS.

PREVIOUS to my departure from Xerez, I submitted, through the Board of Health, for the consideration of the medical gentlemen, the following Queries, with the view of ascertaining what their opinions then were relative to contagion.

Mr. RANCES, a French physician, who had been medical and surgical lecturer in the college at Cadiz for several years past, favoured me with answers to them.

I. If the yellow fever be an imported disease, and an imported disease only, how is its appearance in Cadiz and Xerez in the year 1820 to be explained?

Answer.

Although some modern writers say that yellow fever has not appeared in Cadiz since the year 30, we observe that LIND mentions this city as having suffered from it in September and October of 1784; *Seville* in 1649, *Castile* and *Navarre* 1696. This interval of time afforded grounds for the belief that the disease was epidemical and imported, and not endemical or of domestic

origin; but what has happened in Cadiz and Xerez in the year 1820, would induce us to look upon it as endemical, as its introduction could not be traced by the most careful investigations of the different Boards of Health, and particularly of that of Xerez. If we attend to what many authors say as to the cause of this disease, we find that they generally agree in opinion that scarcity of rain, excessive heat, intermixed with dews or frequent mists, depressing passions, violent exercise, abuse of spirituous liquors, and other concurring causes of a similar nature, may be considered as predisposing. If at the same time we consider what observation and experience have proved with regard to *hydrophobia*, *variola*, and other diseases of a similar nature, which frequently remain dormant in the system for a time, until some powerful cause brings them into action; we shall find that the yellow fever need not be imported in order that it may appear in many villages of the Peninsula, and especially of Andalusia, which, on account of its temperature, and the causes already assigned, is more liable to its attacks than any other part of the kingdom. Miasmata, which have remained from the preceding year, may break out again, and show themselves with more or less activity, according to the predisposition of the subject, and the activity of the exciting causes; so it has been observed, that since the year 1800, when this disease first made its appearance in Andalusia, it has been felt with more or less severity during the following years in the different places which had been affected by it at that period. All that has been stated might tend to decide the question as to the disease being considered as introduced or epidemical, or as endemical or belonging to the country. However, besides

this statement not affording a convincing proof, we cannot deny but that there exist many arguments which may be opposed to it; so that the first question, viz. if the yellow fever is absolutely an imported disease, how is its appearance in Cadiz and Xerez to be accounted for? is a problem very difficult of solution.

II. If the disease be personally contagious, how is it explained, that persons who bury the dead, who wash and tumble the bedding and body-linen of the sick, or who occupy the chambers of the sick without purification, escape from the disease, or are not more liable than others to attacks of it? Clothing or other matters that have been in contact with the bodies of those who suffer from small-pox, measles, or common typhus fever, cannot be touched with impunity.

III. If the disease be positively and personally contagious, how does it happen that persons who carry the disease with them to a healthy district, die of the disease, but rarely if ever communicate it to their attendants? The case is different with diseases of an acknowledged contagious nature: they propagate in any place.

IV. If the disease arise from contagion, and contagion only, how does it happen that persons who have been secluded from all intercourse with others, have been attacked with the disease almost in the same proportion as if they had not been secluded?

Answer to Queries II. III. and IV.

By contagious disease is understood a malady which is produced from the infection of a sound subject, by a sick one, either directly or indirectly. The word epi-

demic, which is derived from the Greek words *epi* ad and *demos* populus, signifies a disease proceeding from a cause foreign to the place, and attacking several persons at the same time. These two definitions are applicable to other diseases besides the yellow fever; and we must therefore not be astonished that the same occurrences take place in it, as in other maladies; for instance, variola, before the immortal *Jenner* made his discovery of the vaccine, was known to be an epidemical disease, and consequently contagious; for the individual who was once affected by it, was not liable to second attacks, and a person who was not labouring under the disease could not infect others; it passed from the sick to the healthy either directly or indirectly: but, at the same time, who can satisfactorily trace the first person who contracted the disease amongst the inhabitants of a town, and why that person was not attacked with the disease before the setting in of spring, summer, or beginning of autumn? Where did the virus remain during the winter? Why was not the subject who never had the disease before, and who lived in the house or in the vicinity of the house of the infected person, infected by it; whilst others who resided at a considerable distance from the infected contracted the disease? Why individuals who never had the disease, who were placed in the sick bed, and dressed in the body-linen of the patient, did not contract the disease; while it affected others under the most careful means of separation? Let these questions be answered, and then we may probably be able to give a decisive answer to the second, third, and fourth Queries. We find that in the malady in question the same occurrences take place as in the small-pox and hydrophobia; for it is established by

positive facts, that the individual bitten by a mad animal has in many instances been a long time without showing any of the characteristic symptoms of hydrophobia. It might be asked then, where the poison lay without producing its effects? and why it manifests itself now without waiting any longer? It may be inferred, that the disease not affecting numerous individuals who actually approached the infected, even attended them, touched their clothes, &c. while it affected others who carefully avoided communication, and paid the greatest possible attention to ventilation, is no more than has been observed in variola. We could answer the difficulties or arguments which may be brought forward by the specious doctrine of the influence of the atmosphere, its variation, constitution of the individual, habits of life, &c.; but the same difficulties will remain, and we had therefore better acknowledge our ignorance with the same ingenuousness as we acknowledge our want of knowledge of many secrets which nature has withdrawn from our investigations.

V. What are supposed to be the signs which distinguish this disease from all others? Yellowness and black vomiting occur in other fevers; they do not always occur in this; and as they appear only at late periods, they cannot be held as diagnostics.

Answer.

Although authors in general agree in giving to the yellow fever the same characteristic marks, we nevertheless observe many of these symptoms in other diseases; and without referring to the author for a complete de-

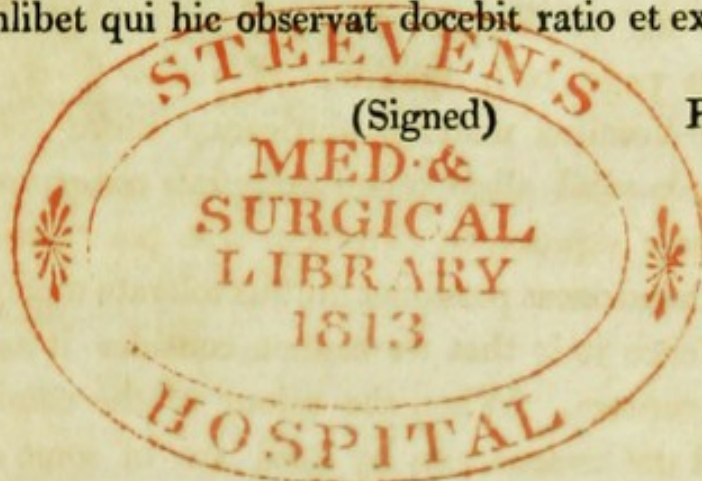
scription of them, we can observe that the yellow colour from which it derives its name is not apparent in some individuals, and is sometimes observed in acute fevers of other types, especially if the subject be labouring under certain passions of the mind; from which it follows that yellowness is not a distinct symptom of this disease. Black or yellow vomiting ought to be considered an equivocal symptom in some instances, and in others fatal. The black vomiting of the yellow fever ought not to be confounded with the atrabiliaro of *Bennett*, nor with the black one of *Hippocrates*, nor with what *Newton* explains in page 107, speaking of yellow fever, where he says, "Vomitus materiæ nigricantis instar rob sambuci (quando nihil aliud quam sanguinis congrumati) in acutis lethale signum, in chronicis vero post quartanam aut hypochondriacas passiones diutius tolerata melioris spei sunt." Hence it is that we cannot consider it as a diagnostic symptom. When the colour of the vomiting is dark, and the evacuations by stool are of some consistence, it may then be considered as a critical evacuation, in like manner as evacuations of various kinds foretell and produce convalescence in sicknesses of other descriptions.

VI. Are there not certain points or localities in every place where the disease appeared, in which it strikes with a peculiar force, or produces an extraordinarily fatal effect; others where it is comparatively mild and little fatal: on what cause would this appear to depend?

Answer.

The miasmata which take place on particular spots of dirty parts, the little ventilation in the interior of the

houses, the accumulation of persons in small habitations, are generally considered as occasional causes of the yellow fever. We must not then be astonished, that in places where the foregoing either partially or totally exist, the inhabitants are afflicted with the disease in all its rigour: whilst others who are free from all those circumstances are affected slightly, because in the latter case the miasmata which produce the yellow fever are deprived of the union with the exhalations and evaporations of those corrupted parts. *Hæc generatim dicta sunt, plura quamlibet qui hic observat docebit ratio et experientia.*



(Signed)

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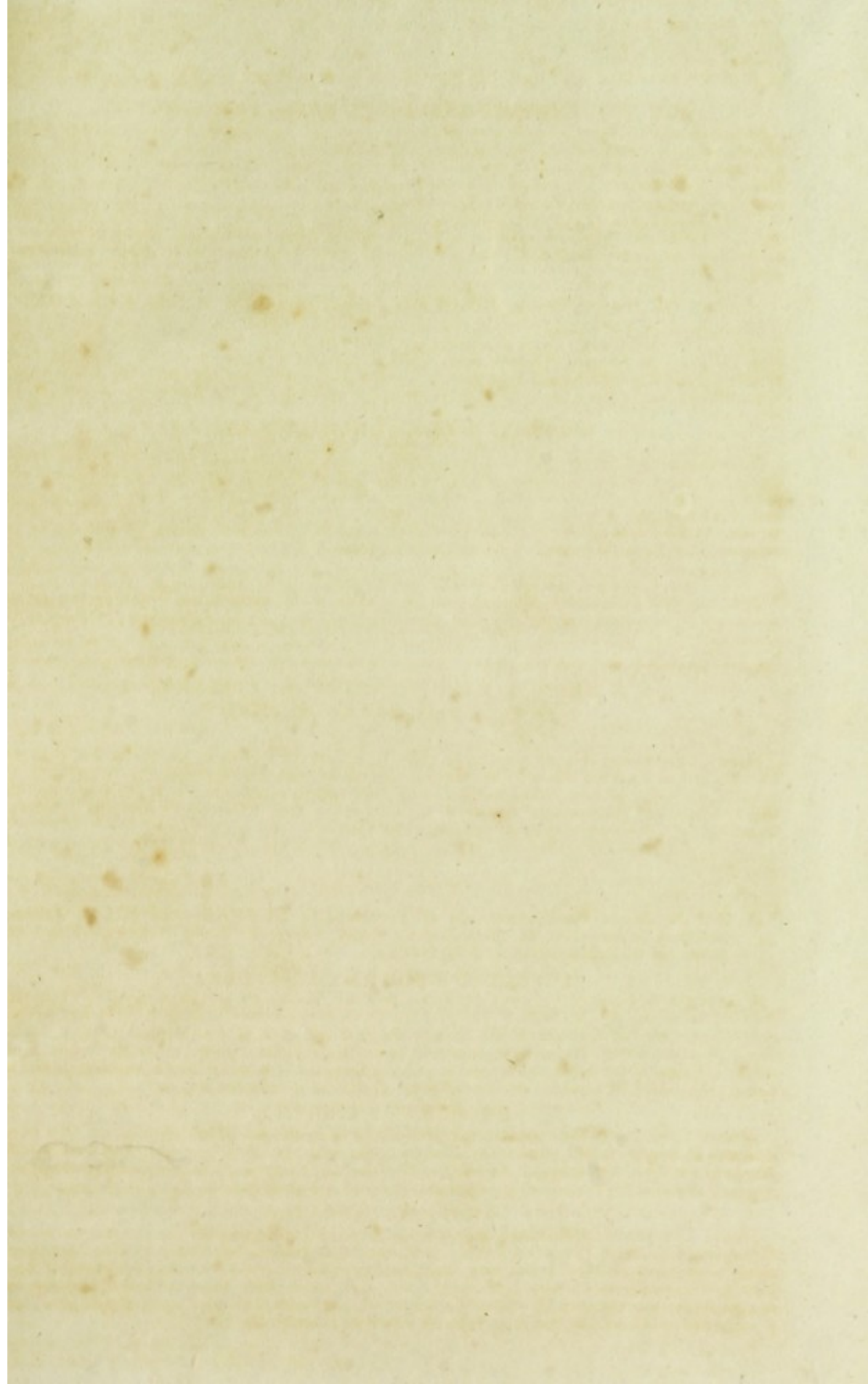
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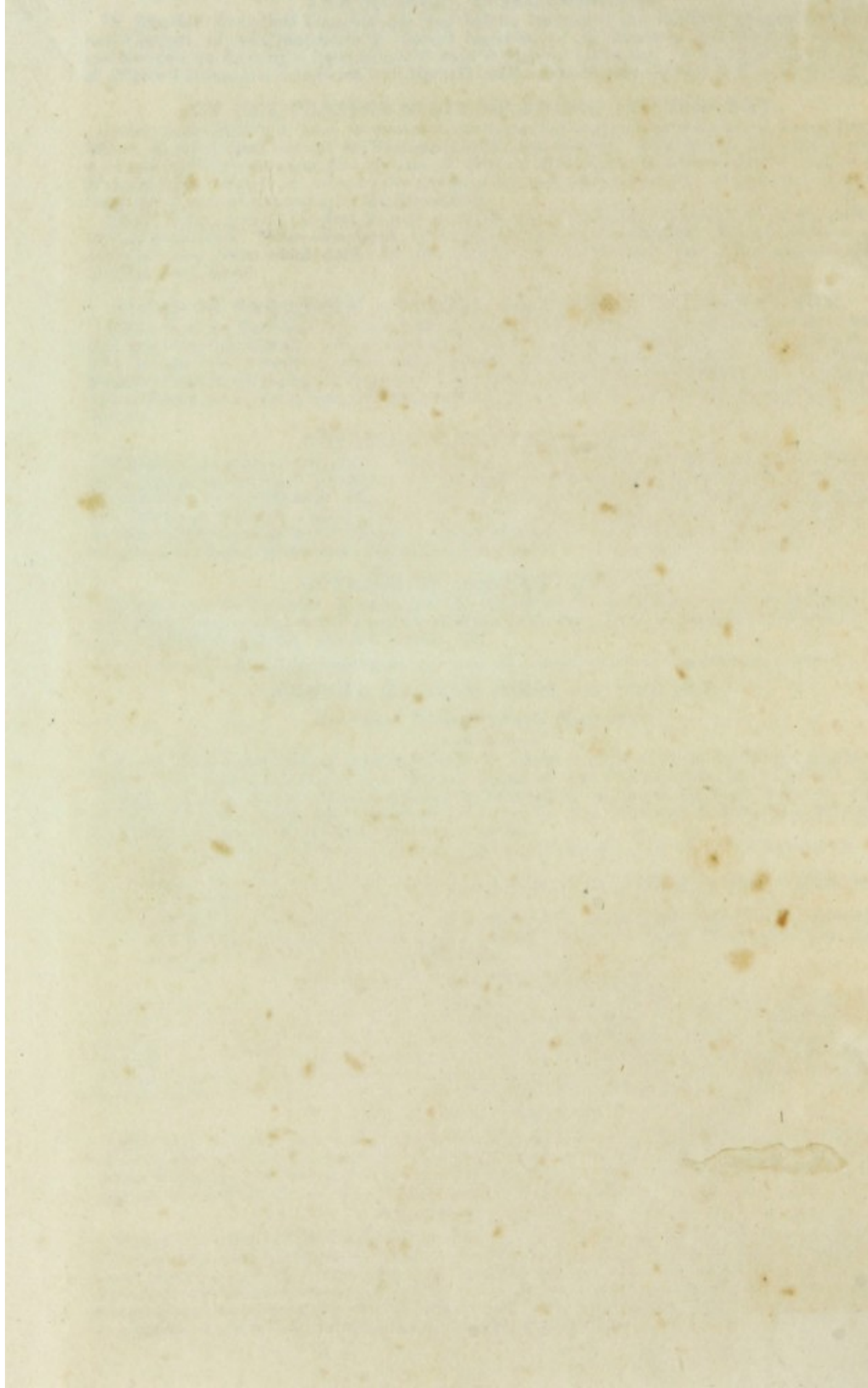
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