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OBSERVATIONS

ON THE

EPIDEMICAL DISEASES

OF

MINORCA.

FROM THE YEAR 1744 TO 1749.

TO WHICH IS PREFIXED

A short Account of the Climate, Productions, Inhabitants, and Endemial Distempers of Minorca.

BY GEORGE CLEGHORN, M. D.
Professor of Anatomy in the University of Dublin.

WITH NOTES, &c.

BY BENJAMIN RUSH, M. D.
Professor of the Institutes and Practice of Medicine in the University of Pennsylvania.

SECOND AMERICAN EDITION.

PHILADELPHIA:
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1812.

District of Pennsylvania, to wit:

********* BE IT REMEMBERED, That on the seventeenth
* * day of October, in the thirty-seventh year of the
* L. S. * Independence of the United States of America,
********* A. D. 1812, Francis Nichols, of the said district, hath deposited in this office, the title of a book, the right whereof he claims as proprietor, in the words following to wit:

"Observations on the Epidemical Diseases of Minorca. "From the year 1744 to 1749. To which is prefixed a "Short Account of the Climate, Productions, Inhabi-"tants, and Endemial Distempers of Minorca By George "Cleghorne, M D. Professor of Anatomy in the Univer-"sity of Dublin. With Notes, &c. By Benjamin Rush, "M. D. Professor of the Institutes and Practice of "Medicine in the University of Pennsylvania. Second "American Edition."

In conformity to the act of the Congress of the United States, intitled, "An act for the encouragement of learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies during the times therein mentioned."—And also to the act, entitled, "An Act supplementary to an Act, intituled, "An Act for the encouragement of learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies during the times therein mentioned," and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL,
Clerk of the District of Pennsylvania.

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TO THE

STUDENTS OF MEDICINE

IN THE

UNIVERSITY OF PENNSYLVANIA.

GENTLEMEN,

THE following work contains a greater mass of practical knowledge in a small compass, than any book perhaps of the same kind in medicine. It has passed through many editions, and it now occupies a place in the libraries of most of the physicians in the British empire. Its merit consists chiefly in the number and importance of its facts, which afford the surest passport of a medical book to present and future generations. The notes which I have added to this first American edition of this valuable work, are intended to point out a few of its errors, but chiefly to impress those remarks, upon your minds, which accord with the diseases and mode of practice that are common in the United States. The notes to which I allude, are distinguished from those of the author, by the references being made by means of the letters of the alphabet.

Permit me to recommend to your imitation the same practice in improving the science of medicine, which has been pursued by the author of this work. It consists, as you will perceive, in delivering dis-

32/458

eases from the insulated place they held in systems of nosology, and connecting them with climate, season, aliments, drinks, dress, and national manners. To enable you to imitate our author with success, it will be necessary to record facts as they occur. "Studium sine calamo, somnium," said the Latin poet. The same thing may be said of the most extensive practice, where notes are not made of diseases. A correct knowledge of them, however strongly impressed upon the mind at the time they are seen, will pass out of the memory like a dream in the course of a few years. By recording the facts which relate to them, the extremes of youth and age may be made to meet in a middle point, or in other words, the benefits of long experience may be anticipated in early life. The book now in your hands is a proof of the truth of this remark. It was composed and published before the author had attained the thirty-fourth year of his age.

In composing the notes which I have added to this work I have taken it for granted that you are acquainted with the principles of medicine which I have taught in the university of Pennsylvania, and of course I have omitted an explanation of them in the occasional references I have made to them.

I shall conclude this dedication by subjoining the following account of the life of our author extracted from Dr. Benjamin Hutchinson's Biographia Medica, from which you will discover some other of the means, beside those that have been mentioned, by which he acquired his knowledge and reputation in his profession.

"Dr. George Cleghorn was born of reputable pa-

rents at Granton, in the parish of Crammond, near Edinburgh, on the 18th of December, 1716. His father died in 1719, and left a widow and five children. George, who was the youngest son, received the rudiments of his education in the grammar school of Crammond, and in the year 1728, was sent to Edinburgh, to be further instructed in the Latin, Greek, and French; where, to a singular proficiency in these languages, he added a considerable stock of mathematical knowledge.

" In the beginning of the year 1731 he resolved to study physic and surgery, and had the happiness of being placed under the tuition of the late Dr. Alexander Monro, a name that will be revered in that university, as long as science shall be cherished and cultivated. This great professor was esteemed by all, but especially by those who were more immediately under his direction. It was the lot of young Cleghorn to live under his roof; and, in one of his letters, his pupil appeared to dwell with peculiar pleasure upon this circumstance, observing that 'his amiable manners, and unremitting activity in promoting the public welfare, endeared him to all his acquaintance, but more particularly to those who lived under his roof, and had daily opportunities of admiring the sweetness of his conversation, and the invariable benignity of his disposition.' For five years he continued to profit by the instruction and example of his excellent master, visiting patients in company with him, and assisting at the dissections in the anatomical theatre; at the same time he attended in their turn the lectures in botany, materia medica, chemistry, and the theory and practice of me-

dicine; and by extraordinary diligence he attracted the notice of all his preceptors.

"On Dr. Fothergill's arrival from England at this university, in the year 1733, Dr. Cleghorn was introduced to his acquaintance, and soon became his inseparable companion. These pupils then studied together the different branches of science under the same masters, with equal ardour and success; they frequently met to compare the notes they had collected from the professors, and to communicate their respective observations. Their moments of relaxation, if that time can be called relaxation, which is devoted to social studies, were spent in a select society of fellow students, of which Fothergill, Russel, and Cuming, were associates; a society since incorporated under the name of the Royal Medical Society of Edinburgh.

"Early in the year 1736, when young Cleghorn had scarcely entered into his twentieth year, so great had been his progress, and so high a character had he acquired, that, upon the recommendation of Dr. St. Clair, he was appointed surgeon in the 22d regiment of foot, then stationed in Minorca, under the command of general St. Clair. During a residence of thirteen years in that island, whatever time could be spared from attending the duties of his station, he employed, either in investigating the nature of epidemic diseases, or in gratifying the early passion he had imbibed for anatomy, frequently dissecting human bodies, and those of apes, which he had procured from Barbary, and comparing their structure with the descriptions of Galen and Vesalius. In these pursuits he was much assisted by his corre-

spondent Dr. Fothergill, who, he acknowledges, was indefatigable in searching the London shops for such books as he wanted.

"In 1749 he left Minorca, and went to Ireland with the 22d regiment, and in the autumn of 1750 he went to London, and, during the publication of 'The Diseases of Minorca,' attended Mr. Hunter's anatomical lectures. In the publication of his book he was materially assisted by Dr. Fothergill. Of this work the following eulogium has been pronounced by a competent judge: 'It forms a just model for the imitation of future medical writers; it not only exhibits an accurate state of the air, but a minute detail of the vegetable productions of the island, and concludes with medical observations important in every point of view, and in some instances, either new, or applied in a manner which preceding practitioners had not admitted.' It is a practice for which we stand indebted to Dr. Cleghorn, to recommend acescent vegetables in low, remittent, and putrid fevers, and the early and copious exhibition of bark, which had been interdicted, from mistaken facts, deduced from false theories.

"In 1751 the doctor settled in Dublin; and, in imitation of Monro and Hunter, began to give annual courses of anatomy. A few years after his residence in Dublin he was admitted into the university as lecturer in anatomy. In the year 1784 the college of physicians of that city elected him an honorary member; after which, from lecturer in anatomy, he was made professor, and had likewise the honour of being one of the original members of the Irish academy for promoting arts and sciences, which is now established by royal authority. In

1777, when the royal medical society was established at Paris, he was nominated a fellow of it.

"About 1774, on the death of his only brother in Scotland, he sent for his surviving family, consisting of the widow and nine children, and settled them in Dublin under his own eye, that he might have it more in his power to afford them that protection and assistance of which they might stand in need. His eldest nephew, William, he educated in the medical profession; but after giving him the best education which Europe could afford, and getting him joined with himself in the lectureship, the doctor's pleasing hopes were unfortunately frustrated by the young gentleman's death, which happened about the year 1784.

"Dr. Cleghorn, with an acquired independence, devoted his moments of leisure to farming and horticulture. But his attention to these employments did not diminish his care of his relations, who, from a grateful and affectionate regard, looked up to him as a parent: the duties of which station he so tenderly supplied, as to induce Dr. Lettsom, from whose memoirs this account is taken, to apply to him the words of Horace, 'Notus in fratres animi paterni.' Dr. Cleghorn died in December 1789."

With cordial salutations, I am, gentlemen, very respectfully your sincere friend,

BENJAMIN RUSH.

September 1809.

TO THE

SOCIETY OF SURGEONS

OF

HIS MAJESTY'S ROYAL NAVY.

GENTLEMEN,

As many of you must be sensible, how little the best information we can acquire in this temperate climate, qualifies us for treating the diseases which are frequent in warmer latitudes, with the desired success, I take the liberty to address the following sheets to your society.

They contain, it is true, an account of the diseases only of a small, remote part of the British dominions; but of a part in which numbers of his majesty's subjects, beside the natives and those employed in the protection of the place, are often brought together, both in time of peace and war: and as the qualities of the air, and the course of the seasons in Minorca correspond nearly with those in several other parts of the world, to which our fleets frequently repair, it is probable that the diseases may likewise be similar.

Would all who practise physic in our factories and colonies abroad embrace the opportunity which their situation affords, to make proper observations on the sick, and communicate them to the public, we should

soon have a more exact and ample history of diseases, than we are yet possessed of; and future practitioners would be enabled to shun the dangers into which many have fallen, and to conduct those committed to their care through the disorders to which they are exposed, with satisfaction and honour to themselves, and no small benefit to their country. It is therefore with great pleasure that I see this is particularly recommended, in the plan for publishing medical observations, which you have lately established, and will, it is hoped, prosecute with the vigour which so useful an institution deserves.

For my own part, I must confess, I had not been long in Minorca ere I had great reason to wish that some of the practitioners who had been there before me, and who must have seen how widely the predominant distempers in this island differ from those in England, had been at the pains to furnish their successors with some hints, some observations, by which the fatal consequences frequently attending these diseases, might have been timely foreseen, or happily prevented.

Being therefore fully convinced, that some remarks of this nature might be useful to those who should afterwards practise in this island, I determined to observe and record, with the utmost care and impartiality, whatever should appear conducive to a thorough knowledge of its diseases and their cure; imagining that, next to the immediate care of the sick, this would be the most essential service, which one in my station could render to the public.

With this view, in the year 1743, I began to keep a diary of the weather, to remark the course of the

seasons, to describe the diseases which they produced, and that commonly in the chambers of the sick: which diary I continued, with no small labour and assiduity, in the midst of an extensive practice, both among the English and Natives, till the year 1749, when the removal of the regiment, in which I have the honour to serve, obliged me to leave the island, and furnished me with leisure for revising my observations, and collecting, from a vast multitude of cases, such general remarks as appeared worthy to be communicated to the public.

You will observe that amongst the epidemics of Minorca, tertian fevers make the most considerable part. The diversity of their types, the violence of their symptoms, their fallacious intermissions, their sudden, and too frequently pernicious events, rendered it necessary to give an explicit account of them; and the more so, as they seldom appear in this manner in the northern parts of Europe; though in Greece, in Italy, and the adjacent countries, it is evident from the remains of antiquity,* and the writings of the most judicious moderns,† that they ever have been, and still are, very frequent, and that with a surprising constancy and uniformity of symptoms; though to one who never had an opportunity of observing them in all shapes, nor seen them amply described, they have the appearance of great irregularity and confusion.

* Hippocrat. Aphor. § iii. No. 21, and De Morb. Vulg. Lib. vii. Asclepiad. apud Cæl. Aurel. de Morb. Acut. Lib. ii. Cap. x. Galen de Morb. Temp. sub finem.

† River. Lib. xvii. § iii Cap. i. Lancis. Epid. Torti Therapeut. Special. Bianch. Hist. Hepat. p. 3, &c.

And it is more than probable, from the accounts of several physicians* and travellers, that epidemical tertians are not wholly confined to the coasts and islands of the Mediterranean; but that they are equally frequent and destructive in many other parts of the globe, and perhaps may be deemed the anniversary autumnal distempers of most hot countries in the world.

A tertian, it is true, when once discovered, may for the most part be readily cured, as we have so safe and efficacious a remedy as the bark in our hands. But in warm climates, such is the rapid progress of this distemper, that it is requisite we should know it in the beginning, that no opportunity may be lost of giving the remedy in a sufficient quantity to avert those dangers into which the sick are otherwise very soon precipitated: yet the variableness of its aspect, and its frequently personating other acute diseases, render this often difficult to the most experienced; and much more so to those who have seldom or never seen such tertians, as they are only now and then to be met with in England.

These considerations induce me to believe, that the account of them contained in the following pages, will neither be unacceptable nor useless to many of your society; and particularly to those, who, by their station in his majesty's service, are often obliged to take care of numbers of their fellow subjects, in climates exposed to such disorders; whilst at the same time their quick transition from one place to

* Spigel. de Semitertian. Lib. iii. Cap. i. Tennent on the Diseases of Virginia, p. 12. Warren on the Fever of Barbadoes, p. 70.

another, prevents their acquiring a competent knowledge of the various epidemics from their own observation.

To you therefore, gentlemen, I address these remarks with the utmost deference and esteem, being in hopes, that the motives which prevailed with me to offer them to you and the public, will sufficiently plead my apology to both, for any imperfections which may appear in this performance, with regard to method or expression. I am,

Your most humble servant,

G. CLEGHORN.

CONTENTS.

INTRODUCTION.

The Air in Minorca . . . . . *Page* 1
The Seasons of the Year 2
Heat and Cold 2
Winds 3
Rain, and other Meteors 4
The Soil, and its Productions 6
Corn 7
Wine 7
Pulse 8
Roots, Sallads, and Pot-herbs 9
Fruits and Trees cultivated 11
indigenous 21
Minerals 26
Fish 27
Cattle . . . . . .
Domestic Fowl 31
Wild Fowl 32
Water Fowl 32
Birds of Passage 32
Eatable Snails 34
The natural Temper of the Minorquines 34
Their Diet 35
Their Festivals and Public Diversions 37
Their ancient Usages 39
Endemial Diseases 42
Obstructions of the Abdominal Viscera 42
Hemorrhoids 44
Ulcers of the Legs 44
Ruptures 45
Sore Eyes 45
Nephritic Pains 45
Convulsion of the Jaw in Children 46
Accidents from endemial Causes 47
Their Notions of Witchcraft and evil Spirits 48

CHAPTER I.

The Weather described from the Year 1744 to 1749 *Page* 49
A Thermometrical Table 73

CHAPTER II.

A short Account of the epidemical Diseases from 1744 to 1749 75

CHAPTER III.

Tertian Fevers, why so called 85
The Diversity of Tertians occasioned by the different Types of their Periods, viz.
Simple Tertians, true and spurious 88
Double Tertians 88
True, Spurious, and Subintrant Double Tertians . 89
Triple Tertians 89
Semitertians 90
Intermittent, Remittent, and Continual Tertians . 90
Anticipating and Postponing Tertians 91
The Diversity of Tertians occasioned by the different Symptoms of their Paroxysms 91
Lipyria, Febris Syncopalis, Assodes, Elodes, &c. . . . 92
The Constancy of Nature in the Course of Tertians . . 93
Their most frequent Form in their Beginning 94
In their Progress 95
In their State and Declension 96
Signs of Security in Tertians 98
of Danger 99
of Death, and when to be expected 101
Appearances on opening the Bodies of the Dead . . . 104
What Species of Tertians are most common in Minorca . 106
Management of the Non-naturals in the Cure of Tertians 107
Of Bleeding 114
Of Vomiting and Purging 117
When Tertians may be left to Nature 119
When they require the Bark 120
When Purgatives should be joined with the Bark . . . 123
When Cordials 123
Prejudices against the Bark considered 125
Its Use recommended in several Cases, where forbid by Authors 129

The Cure of the Symptoms in Tertians . . . . . *Page* 132
Acute Pains in the Back and Limbs 132
Vomiting and Purging 132
Restlessnes and Head-achs 133
Hemorrhages from the Nose 133
Pain and Inflammation in the lower Belly 133
Coma 133
Hiccough 134
Abscesses near the Hip 134
Parotids 134
Of Relapses of Tertians, their Prevention and Cure . . 135
Of sporadic Tertians 136
The Frequency of epidemical Tertians in many Parts of the Globe 137
The Bark recommended by the best Practitioners of different Nations 138

CHAPTER IV.

Of the Sudamina or Rash 139
Of the Essere, called Favas in Minorca 140
Of the Cholera Morbus 141

CHAPTER V.

In what Manner Dysenteries begin 143
How they terminate, and the Appearances in such as die of them 144
Ipecacuanha and Vitrum Antimonii recommended in some Dysenteries 146
The antiphlogistic Method in others 147
Hardened Excrements commonly collected in the Guts, when the Ilium, Colon, or Rectum is inflamed . . . 148
Calomel with Opium, the best Remedy to dislodge them . 148
Of old inveterate Dysenteries 149
Opium of great Service in them 149
In what Sort of Dysenteries the Bark is successful . . 150

CHAPTER VI.

General Remarks on the Summer and Winter Fevers . 152
Of the Pleurisy in the Year 1746 154
Its treacherous Remissions 157
On what Days the Patients died 158

Appearances in the dead Bodies . . . . . *Page* 159
A Case of an Abscess in the Liver 160
The natural Evacuations which terminate Pleurisies . . 161
The capital Remedies in the Cure of Pleurisies . . . 165
Other collateral Helps 169
Of the inflammatory Diseases, epidemical at the same Time with the Pleurisy 170
Extracts from Letters concerning the Pleurisy 171

CHAPTER VII.

Of the Smallpox in the Year 1742 174
Of the Smallpox in 1746 176
Their pestilential Disposition 177
Two Cases cured by the early Use of the antiphlogistic Method 181
Three, wherein this Method failed 181
The Danger of the natural Smallpox, and the Safety of Inoculation 184

THE

INTRODUCTION.

WHEN I determined to write upon the fevers, which have, of late years, been epidemical in MINORCA I thought it would not be improper, in the first place, to give a short account of the nature of the climate; the qualities of the soil, and its productions; the manners of the inhabitants, their diet and way of life; and to mention some other diseases to which they are peculiarly subject.

The following introduction is intended for this purpose; and the reader will easily discover by the style, that it was composed during my residence in that island.

The air is much more clear and pure than in Britain; being seldom darkened with thick fogs: yet the low valleys are not free from mists and unwholesome vapours; and in windy weather the spray of the sea is driven over the whole island; as is evident from the briny dew found on the leaves of vegetables growing in the most inland parts of it. Hence it is, that utensils of brass or iron are extremely susceptible of rust, in spite of all endeavours to preserve them; and household furniture, if not frequently exposed to fire or the sun, contracts a mouldiness, and is destroyed by the moisture.

The summers are dry, clear, calm, and hot; the autumns moist, warm, and unequal; at one time perfectly serene, at another cloudy and tempestuous. Nor are the summer and autumnal seasons of one year much different from those of another. During the winter, storms of any kind, are neither frequent, nor of long continuance (though sometimes very violent); and whenever they cease, the weather returns to its usual serenity. The spring is always variable, but bears a stronger resemblance of the winter than of the summer season.

The changes of heat and cold are neither so sudden nor so great in this climate as in many others. In the compass of a year, the mercury in Fahrenheit's thermometer seldom rises much above the 80th, nor falls below the 48th degree; and though it has been observed, in extraordinary seasons, to reach the 87th, and descend to the 41st degree; yet it attains not usually to either of these extremities, nor continues at them long. In summer there is scarcely ever a difference of four or five degrees between the heat of the air at noon, and at night; and in winter the variation is still less considerable.

What I have said with regard to the thermometer, is to be understood of one kept within doors, and so situated, as neither to be affected by the solar rays, nor the influence of a fire. For if it be exposed to the summer's sun, it will rise 12, 14, or 16 degrees higher than in the house; and in other seasons, the difference between the air in the shade, and that heated by the direct rays of the sun, is frequently found much greater. Yet even in the dog days, the heat of the atmosphere, at least in open places,

where there is a free circulation of air, seldom surpasses that of the blood of a man in health.

The winds about the vernal and autumnal equinoxes, and sometimes during the winter, are extremely boisterous. In the other seasons they are usually moderate; and according to the seamen's observations, they rarely blow in the same direction near the islands adjacent to the gulf of Lyons, as in the open sea.

During the summer, in the mornings and evenings, there is commonly a perfect calm: but the middle of the day is cooled by refreshing breezes, which rise in the east, and following the course of the sun, increase gradually till two or three o'clock in the afternoon; and die away insensibly as night approaches. This renders the intense heat of the sun less dangerous and inconvenient; but if these breezes intermit for a day, the natives themselves grow languid and inactive from the sultriness of the season.

The northerly winds in general are cold, dry, and healthy; they dispel the mists, and make a clear blue sky; whilst those which blow from the opposite points render the air warm, moist, and unhealthy. That the influence of the north wind is superior to the rest, is evident from hence, that the tops of all the trees incline to the south, and the branches on the north side are bare and blasted. The next to it in force is the northwest. Both these winds are frequent towards the close of winter, and in spring; and as they are dry and cold, they shrivel up the leaves of the vegetables, destroy their tender shoots, and are often excessively detrimental to the vineyards and rising corn. The piercing blasts, which

blow at the same season from the northeast, as they are moister, and more frequently attended with rain, are not so prejudicial. The south and southeast winds are by much the most unhealthy. In whatever seasons they blow, the air is foggy, and affects the breathing; but in the summer they are sultry and suffocating. An excessive dejection of spirits is then a universal complaint; and, on exposing the thermometer to the rays of the sun, the mercury has frequently risen above the 100th degree. The west wind is usually drier than the south: the east is cold and blustering in the spring, and sultry in the summer.

The weather in this climate is generally fair and dry; but when it rains, the showers are heavy, though of short continuance; and they fall most commonly in the night.

The sky in summer is clear, and of a beautiful azure, without clouds or rain; but moderate dews descend regularly after sunset.

As the autumn draws near, the weather becomes less serene; whirlwinds and thunder are frequent. In the nights, lightning, and those meteors called falling stars, are very common.

At that season water spouts are often seen in the neighbourhood of the island; and sometimes they break upon the shore. LUCRETIUS* has described

* Nam fit ut interdum tanquam demissa columna,
In mare de cœlo descendat; quam freta circum
Ferviscunt, graviter spirantibus incita flabris,
Et quæcunque in eo, tum sunt deprensa tumultu,
Navigia, in summum veniunt vexata periclum.

De Rer. Nat. l. vi.

them elegantly; and the various shapes in which they appear, are well represented by Dr. Stuart in the Philosophical Transactions.*

About the autumnal equinox a sudden alteration in the weather ensues; the skies are darkened with clouds, and the rain falls in such quantities, that the torrents thereby occasioned, pouring from the hills, tear up trees by the root, carry away cattle, break down fences, and do considerable mischief to the gardens and vineyards. But then these anniversary rains are much more violent than lasting, always falling in sudden heavy showers, with intervals of fair weather. As they come after a long scorching summer, they are very acceptable and beneficial; for they mitigate the excessive heat of the air, give a check to the epidemical diseases, and by softening the sunburnt earth, render it capable of being cultivated. They are commonly accompanied with thunder, lightning, and squalls of wind for the most part from the north. Such storms as these are seldom seen in cold countries; but they are frequent enough in warmer climates; and the description given of them by VIRGIL† is equally just and poetical.

Hail and snow are often intermixed with the rains which fall in winter and in spring; but the snow, for the most part, dissolves immediately; and ice is here an uncommon appearance.

It is not my design to give a geographical account of the island, its situation, harbours, cities, and other particulars of this nature: these may be met with elsewhere. I shall only observe that the whole of it

* Plate 1. vol 4. Part II. † Virg. Georg. l. i. ver. 322.

is what the sailors term low land; excepting a few hills near the center, of which the most considerable, named *Toro* by the inhabitants, may be discovered from sea, in clear weather, at twelve or fourteen leagues' distance.

The surface of the island is rough and unequal; and in many places divided by long narrow vales of a considerable depth, which are called *barrancos* by the natives. They begin towards the middle of the island, and after several windings, terminate at the sea. The southwest side is more plain and regular than towards the northeast; where the hills are higher, with low marshy valleys between them, the soil less fruitful, and the whole tract unhealthy to man and beast. Near the towns and villages the fields are well cultivated, and inclosed by stone walls: but the rest, for the most part, is rocky, or covered with woods and thickets. There are some pools of standing water, and but very few rivulets; one cannot therefore easily account for cardinal De Retz's mistake, (see his Memoirs) when he describes a number of streams pouring into Mahon harbour; unless we suppose him to have seen it in the rainy season.

The soil is light, thin, and very stony, with a good deal of sea salt, and some calcareous nitre intermixed. In most places there is so little earth, that the island appears to be but one large irregular rock, covered here and there with mould, and an infinite variety of stones. Notwithstanding this, it is not only extremely proper for vineyards, but produces more wheat and barley than could at first sight be imagined. And, if the peasants may be credited, it would always yield a quantity of corn and wine sufficient

for the natives, did not the violence of the winds, and the excessive drought of the weather, in different seasons, frequently injure their crops.

The fields commonly lie fallow for two years, and are sown the third. About the latter end of winter, or the beginning of spring, they are first broken up; and next autumn, as soon as the rains fall, they are again ploughed, and prepared for receiving the proper seeds. The tillage is neither a laborious, nor an expensive work; for a plough so light as to be transported from place to place, on the ploughman's shoulder, and to be drawn by a heifer, or an ass sometimes assisted by a hog, is sufficient for opening so thin a soil. The later the harvest happens, the more plentiful it proves. The barley is usually cut down about the 20th of May new style, and the wheat is reaped in June; so that the whole harvest is commonly got in by midsummer day. The grain is not threshed with flails as in England, but trodden out on a smooth piece of rock by oxen and asses, according to the practice of the eastern nations.

In the planting of vines it is customary to lay a large stone on every slip; this is a protection, as VIRGIL observes, (Georg. 2.) against the excessive heat of the sun, which would otherwise, in so shallow a soil, deprive it of all moisture; and at the same time prevents the mould from being washed away by the immoderate rains. September is the season for the vintage. After the grapes are trampled, but before they are pressed, they are sprinkled over with powder of alabaster,* in order to give the wine a

* Called by the natives *Parell.* It is got out of the same pits with the plaster of Paris.

brighter red colour. Such wines as are made with care, from the fruit of old vineyards, still deserve the commendations formerly given them by PLINY.* And they have one property, seldom to be met with in wines of this complexion. I mean that of keeping the body open, which renders them less heating, and therefore less prejudicial. But since the commencement of the war, as Mahon harbour has become the rendezvous for ships of different nations, the quantity of the wine has been more regarded by the proprietors, than its quality. Hence the greater part of it grows sour in the beginning of the summer: and this is probably the principal reason why dysenteries have of late years been both more frequent and more fatal than usual.

The natives hang up clusters of ripe grapes (1) to the ceilings of their chambers, in order to dry for winter store. The *sapa vini* (2), together with various roots and fruits preserved by being boiled in it, amongst other uses, makes a considerable part of their bill of fare on fast days.

In some places there are fields of hemp (3), flax (4), and tobacco (5): they likewise sow beans (6), chichlings (7), chich pease (8), two species of the kidney

* Lib. 24. C. 6. Vina Balearica conferuntur Italiæ primis.

(1) Uvæ Pensiles, *Panjois.*

(2) *Arrop.*

(3) Cannabis, *Canem.*

(4) Linum, *Lli.*

(5) Nicotiana, *Tabach.*

(6) Faba, *Favas.*

(7) Lathyrus, *Guixes.*

(8) Cicer, *Ciurous, Garravanses.*

bean (1), and lentils (2): these being a considerable part of their diet at such times as they are prohibited from eating meat, by their religion. There are a few pease (3) in the vineyards and gardens; but these are commonly reserved for the tables of the wealthy.

In the moist fenny grounds they plant quantities of canes (4), which they make use of instead of laths, to support the tiles, in the roofs of their buildings. They have also in some few places Indian wheat (5), Job's-tears (6), and Indian reed (7): the hard, stony seeds of the two last being perforated and strung, serve them as beads for their rosaries.

Their gardens are more for use than show, and furnish most kinds of potherbs, roots, and sallading, in great plenty: and the herb market of Mahon has been as useful to the British fleet in restoring the health of the sailors, as the harbour in refitting and securing the ships. There are at all seasons, cabbages (8), coleworts (9), lettice (10), spinage (11), en-

(1) Phaseolus. The common white large kidney bean is called *Mongeta;* a smaller sort with a black spot in its middle *Fesol* or *Guixon.*

(2) Lens, *Llentias.*

(3) Pisum, *Posols.*

(4) Arundo donax, *Canya.*

(5) Mayz, *Blad de las indias.*

(6) Lachryma Job, *Lagrimas de viu.*

(7) Cannacorus, *Mariettas.*

(8) Brassica capitata, *Cols capdelladas.*

(9) Brassica aperta, *Cols abertas.*

(10) Lactuca, *Llatugas.*

(11) Spinachia, *Espinachs.*

dive (1), beets (2), parsley (3), cresses (4), leeks (5), onions (6), garlick (7), sellery (8), radishes (9), horse radish (10), sage (11), mint (12), sweet marjoram (13), wild marjoram (14), thyme (15), &c. You have besides these in winter, carrots (16), parsnips (17), turnips (18), artichokes (19), asparagus (20), and colly-flower (21): in summer, love-apples (22), mad-apples (23), guinea-pepper (24), together with various kinds of cucumbers (25), pompions (26), musk-melons (27), and water-melons (28) in great plenty

(1) Cichorium sive Endivia, *Escarolas.*
(2) Beta, *Bledas*
(3) Apium sive Petro selium, *Jullivert.*
(4) Nasturtium, *Murrisa.*
(5) Porrum, *Porras.*
(6) Cepa, *Cebas.*
(7) Allium, *Alls, Ai'as.*
(8) Apium dulce, *Apits.*
(9) Raphanus, *Ravas.*
(10) Raphan. rust. Cochlear. Spec. *Ravas de cavall.*
(11) Salvia, *Sauvia.*
(12) Mentha, *Herba sana.*
(13) Majorana, *Morredux.*
(14) Origanum, *Orenga.*
(15) Thymus, *Them.*
(16) Daucus, *Bastenagues.*
(17) Pastinaca, *Xarovias.*
(18) Rapum, *Naps.*
(19) Cynara, *Carxofas.*
(20) Asparagus, *Esparachs.*
(21) Brassica cauliflora, *Cols flos.*
(22) Lycopersicon, mala Aurea, *Tomatils, Tomatigues.*
(23) Melongena, mala insana, *Auberginias.*
(24) Capsicum, *Pebres.*
(25) Cucumis, *Cubombros.*
(26) Pepo, *Carabasas.*
(27) Melo, *Melons.*
(28) Anguria, *Sindrias.*

and perfection. But as the climate is liable to severe droughts, every garden is supplied with a deep well; from whence, by means of the Persian wheel,* the gardener fills his reservoir, and from it conveys the water, by stone canals, to the different beds as occasion requires.

Beside the fruits common in England, such as cherries (1), apples (2), pears (3), apricocks (4), plumbs (5), peaches (6), medlars (7), mulberries (8), quinces (9), and walnuts (10); several others ripen here, which in colder countries seldom or never come to perfection, even with the help of a hotbed; such as the large juicy pomegranates (11), of which there is great abundance in every garden; lemons (12), citrons (13), and oranges (14), which are all of late years become very common in this island; the almonds (15), which thrive perfectly well in this soil; and the Indian figs (16), which are the princi-

* See a Figure of the *Persian* Wheel in *Shaw's* Travels.

(1) Cerasus, *Cireras.*
(2) Malus, *Pomas.*
(3) Pyrus, *Pyras.*
(4) Armeniaca, *Aubercoes.*
(5) Prunus, *Prunes.*
(6) Persica, *Presechs.*
(7) Mespilus, *Nesples.*
(8) Morus, *Moros.*
(9) Cydonia, *Codons.*
(10) Nux Juglans, *Nous.*
(11) Punica, *Magranas.*
(12) Limones, *Llimons.*
(13) Citreum, *Cidros.*
(14) Aurantium, *Teronges.*
(15) Amygdalus, *Merlas.*
(16) Opuntia vulgo Herbariorum, *Figas Moriscas.*

pal sustenance of whole families in September. The prickly shrub that bears them grows wild among the rocks, and is often made use of as a fence to their gardens. To these may be added some fruits of smaller esteem, as the jujubes (1), the true services (2), Neapolitan medlars (3), and the berries of the nettle tree (4).

In enumerating the trees which adorn their gardens, I must not omit the cypress (5), laurel (6), poplar (7), Egyptian thorn (8), bead-tree (9), and a beautiful species of dog's-bane (10). Neither can I forbear to mention the figtree (11), which not only produces large quantities of excellent fruit, (some kinds of it, two crops in a year) but affords a convenient shade, under which the peasants usually regale themselves. Nor must the palm tree (12) be past over in silence; for although the dates in this country never come to perfection, yet its inner branches, when blanched, serve as ornaments for their processions on Easter Sunday; and the others are used by the children in *passion week*, for striking the earth, which is superstitiously termed by the inhabitants, beating of Judas. The minds of the people are at

(1) Zizyphus, *Gingols.*
(2) Sorbus legitima, *Serves.*
(3) Mespilus folio Apii lacin. C. B. *Azarolas.*
(4) Celtis, Lotus, *Lladons.*
(5) Cupressus, *Cipré.*
(6) Laurus, *Lloré.*
(7) Populus, *Poll.*
(8) Acacia, *Aroma.*
(9) Azederach, *Suclemoro.*
(10) Apocynum, *Sedé.*
(11) Ficus, *Figuera.*
(12) Palma, *Fascé.*

that time so inflamed by the sermons of their priests, that it is dangerous for the Jews to be seen abroad.

The vegetables hitherto mentioned are produced by culture. I come next to speak of the indigenous, which grow spontaneously in the island; and as there is a vast variety of these, I shall not pretend to treat them so fully as the subject deserves; nor am I equal to the task, botany, though sometimes my amusement, never having been my study: all I shall aim at is briefly to point out the most remarkable amongst them.

In the first place may be mentioned such plants as serve the natives for sallading and pot herbs; *viz.* succory (1), prickly rock asparagus (2), alexanders (3), buckshorn plantain (4), goat's-beard (5), fennel (6), hawkweed (7), purslane (8), sow-thistle (9), sorrel (10), water-cresses (11), capers (12), and samphire (13).

To the same class belong borrage (14), blites (15),

(1) Cichorium, *Camarotjes.*
(2) Asparagus, Corruda, *Esparachs.*
(3) Smyrnium, *Cugulls.*
(4) Coronopus, *Cornicellis.*
(5) Scorzonera, Tragopogon, *Cuxa de dona.*
(6) Fœniculum, *Fenoi.*
(7) Hieracium, *Cascunias.*
(8) Portulaca, *Verdulagas.*
(9) Sonchus, *Llecsons.*
(10) Acetosa, *Vinagrellas.*
(11) Sysimbrium, *Crexechs.*
(12) Capparis, *Taparas.*
(13) Crithmus, *Fenoi mari.*
(14) Borrago, *Borratjes.*
(15) Blitum, *Blets.*

beets (1), orrache (2), dandelion (3) and spatling poppy (4). The luxury of the present age, seldom or never, indeed, allows these a place at the table; but in times of scarcity they have served as common food; particularly in the year 1685, when a swarm of locusts had destroyed the harvest.

Of medicinal plants there is such variety, that barely to recount them, will (I am afraid) be tedious. Common wormwood (5), sea-wormwood (6), brank-ursine (7), true maiden-hair (8), agrimony (9), winter cherry (10), chickweed (11), male pimpernel (12), female pimpernel (13), common rest harrow (14), yellow rest harrow (15), snap-dragon (16), goose grass (17), friar's cowl (18), cuckow-pint (19), spleen-wort 20), rough spleen-wort (21), brook-lime (22), black

(1) Beta, *Bledas.*
(2) Atriplex.
(3) Dens Leonis, *Caxal de veia.*
(4) Lychnis species, sive spumeum papaver, *Coulisse.*
(5) Absynthium vulgare, *Donzell.*
(6) Absynth. maritimum, *Donzell mari.*
(7) Acanthus, *Carnera.*
(8) Adiantum verum, *Falzia.*
(9) Agrimonia.
(10) Alkekengi, *Orval fi.*
(11) Alsine, *Tina.*
(12) Anagallis flore phœniceo.
(13) Anagallis flore cæruleo.
(14) Anonis vulgaris, *Resta bovis.*
(15) Anonis lutea viscosa, spinis carens, C. B. *Motxes.*
(16) Antirrhinum, *Cullons de gat.*
(17) Aparine, *Amor de Hortola & Rabosa.*
(18) Arisarum, *Frare Cugot.*
(19) Arum, *Rapa.*
(20) Asplenium, *Dauradella.*
(21) Lonchitis.
(22) Veronicæ species, becabunga.

briony (1), bugloss (2), ox-eye (3), shepherd's purse (4), marigold (5), small red centaury (6), small yellow centaury (7), germander (8), ground-pine (9), great celandine (10), hemlock (11), male-cistus (12), female cistus (13), golden flowered samphire (14), sow-bread (15), hound's-tongue (16), long-rooted sweet cyperus (17), wild carrots (18), great dragons (19), viper's buglos (20), dwarf-elder (21), golden cassidony (22), horsetail (23), wild rocket (24), base wild rocket (25), sea-holly (26), bank-cresses (27), giant fennel (28),

(1) Tamnus, bryonia nigra.
(2) Buglossum, *Llengua bovina.*
(3) Buphthalmum, *Bulichs.*
(4) Bursa pastoris, *Bosa de Pastor.*
(5) Calendula, *Lleva mal.*
(6) Centaur. minus vulgar. *Centauré.*
(7) Centaur. min. flav.
(8) Chamædrys, *Usinetta.*
(9) Chamæpitys, *Iva.*
(10) Chelidonium majus, *Celedonia.*
(11) Cicuta.
(12) Cistus flore rubro, *Stepa.*
(13) Cistus flore albo.
(14) Asteris species, crithmum chrysanthemum, *Salsone.*
(15) Cyclamen, *Pa de Porc.*
(16) Cynoglossum, *Llepasera.*
(17) Cyperus longus.
(18) Daucus sylvester, *Bastenagues salvages.*
(19) Dracunculus major, *Rapa mascle.*
(20) Echium.
(21) Ebulus, *Ebul.*
(22) Elichrysum, *Mansinillas.*
(23) Equisetum, *Coua de Cavall.*
(24) Eruca, *Ruca.*
(25) Reseda.
(26) Eryngium. *Card panical.*
(27) Erysimum.
(28) Ferula, *Canya fellera.*

fern (1), fumitory (2), dog's-grass (3), greater turnsol (4), mule's fern (5), St. John's-wort (6), hypocistus (7), glass-wort (8), wild cucumber (9), sharp-pointed dock (10), hart's-tongue (11), wood sorrel (12), mallows (13), white hoar hound (14), stinking hoar hound (15), base hoar hound (16), dog's mercury (17), sciatica cresses (18), Roman fennel-flower (19), broom rape (20), peony (21), corn poppy (22), yellow flowered horn poppy (23), pellitory of the wall (24), thorough wax (25), periwinkle (26), ivy (27), honeysuc-

(1) Felix, *Falguera.*
(2) Fumaria, *Fumisterra.*
(3) Gramen caninum, *Gram.*
(4) Heliotropium majus, *Girasol.*
(5) Hemionatis.
(6) Hypericum, *Transflorina, Herba de san Juan.*
(7) Hipocistus, *Margalidettas.*
(8) Kali, *Sosa.*
(9) Cucumis asininus.
(10) Lapathum acutum, *Paredellas.*
(11) Lingua cervina, *Llengua de Cero.*
(12) Oxys, rujula.
(13) Malva, *Mauves.*
(14) Marhubium album, *Malrubins.*
(15) Ballote, *Malrubins bords.*
(16) Stachys.
(17) Mercurialis, *Malcorages.*
(18) Nasturtium sylvest. Iberis, *Murrissa bord.*
(19) Nigella, *Niella.*
(20) Orobanche.
(21) Pæonia, *Pampelonia.*
(22) Papaver rubr. *Rosellas.*
(23) Papaver corniculatum.
(24) Parietaria, *Maias.*
(25) Perfoliata.
(26) Pervinca, *Proenga.*
(27) Hædera, *Eura.*

kle (1), bind-weed (2), burnet (3), common plantain (4), water plantain (5), knot-grass (6), polypody of the oak (7), flea-wort (8), cinquefoil (9), small madder (10), butcher's broom (11), willow-wort (12), round-leaved water pimpernel (13), scabious (14), shepherd's needle (15), sea onion (16), figwort (17) greater house leek (18), smaller house leek (19), water-parsnip (20), night-shade (21), louse-wort (22), thorn apple (23), white mullein (24), vervain (25), swallow-wort (26),

(1) Caprifolium, *Madreselva.*
(2) Convolvulus, *Corregiola.*
(3) Pimpinella sanguis orb. *Pantinella.*
(4) Plantago, *Plantage.*
(5) Plantago aquatica.
(6) Polygonum, *Ceutnous.*
(7) Polypodium, *Polipodi.*
(8) Psyllium, *Herba pucera.*
(9) Quinquefolium, *Pau de Christ.*
(10) Rubia minor.
(11) Ruscus, *Brusc.*
(12) Salicaria.
(13) Samolus.
(14) Scabiosa, *Scabiosa.*
(15) Scandix, pecten Vener.
(16) Scilla, ornithogalum, *Ceba marina.*
(17) Scrophularia, *Herba pudent.*
(18) Sedum majus, *Consolva.*
(19) Sedum minus.
(20) Sium, *Apits de Sichia.*
(21) Solanum, *Morella.*
(22) Delphinium, staphisagria, *Metapoi.*
(23) Stramonium, *Orval.*
(24) Verbascum, *Trapo.*
(25) Verbena, *Herba Verbena.*
(26) Asclepias.

navel-wort (1), common nettles (2), and Roman nettles (3).

To these we may add such others as have been transplanted formerly from foreign countries, but are now so far naturalized here as to grow wild in several places; such as the American night-shade (4), the Mexican jasmine (5), the passion flower (6), the great spurge (7), and the aloes (8): which last seems to have been industriously cultivated near the farm houses, as a remedy for the accidents to which country labourers are much exposed; it having formerly been in great esteem (as we learn from DIOSCORIDES*) for healing recent wounds.

Beside these there is a number of aromatic plants, which thrive luxuriantly in this soil, and by imbalming the air with fragrant exhalations contribute to preserve as well as restore the health of the inhabitants: the principal of these are lavender cotton (9), starwort (10), mountain-mint (11), horse-mint (12),

(1) Cotyledon, Umbilic. Vener. *Cocas de Parets.*

(2) Urtica vulg. *Ortigas.*

(3) Urtica Romana.

(4) Phytolacca, *Rems de moro.*

(5) Jallapa flore purpureo, *Juan de Notxe & Pedro de Notxe.*

(6) Granadilla, *Passionera.*

(7) Ricinus, *Cagamutxe.*

(8) Aloes, *Azibare.*

* Lib. ii. cap. 23. Aloe nascitur in Arabia, Asia, et aliis locis maritimis, inutilis quidem succo extrahendo, sed conveniens recentibus vulneribus, si contusa emplastri formâ, adplicetur.

(9) Santolina, Abrot. fæm. *Camomela.*

(10) Asteriscus foliis ad florem mollibus. An asterisc. annuus aquat. patul. Tourn?

(11) Calamintha.

(12) Mentha, Mentastrum, *Mendastra.*

penny-royal (1), flea-bane of various kinds (2), clary (3), poley-mountain (4), Syrian herb mastick (5), rue (6), French lavender (7), water-germander (8), St. Peter's wort (9), and strong smelling clover (10).

The garlick makes so considerable a part, both of their food and physic, that it deserves to be more particularly mentioned. Several kinds of it grow here in such plenty that the milk of the cattle, and even the meat itself, frequently participate of its taste. The only sort which the natives use is a *scorodo-prasum* (11), milder than the garden garlick, and sweeter than the leek. What is commonly eaten by the soldiers and sailors is another more acrid species, with a triangular stalk (12).

Of the thistle tribe, the following deserve our notice: the milky (13) and golden thistle (14) are both esculent; the flowers of the prickly wild artichoke (15) serve, instead of rennet, to curdle milk. In May

(1) Mentha, Pelugium, *Puriol.*

(2) Asteris species, Conyzæ, *Olivarda.*

(3) Sclarea, horminum, *Tarach.*

(4) Polium montanum, *Polio.*

(5) Chamædrys maritima, incana fruetsc. fol. lanceol. *Frigola.*

(6) Ruta, *Ruda.*

(7) Stæchas, *Tumani.*

(8) Chamædrys pallust. Scordium, *Scordi.*

(9) Ascyrum exiguo folio, flore magno, *Stepara groga.*

(10) Trifol. bituminosum.

(11) Allium capite sphærico, folio latiore, *Porradolls.*

(12) Allium caule triangulo.

(13) An Carduus lact. peregrin. maj. sem. fusco? *Card. Gallofe.*

(14) Scolymus chrysanthem, ann. *Caderlinas.*

(15) Cynara sylvestris.

the bees feed chiefly on the white flowered star thistle (1), which affords the finest honey; and the broad yellow flowered fish thistle (2) yields a coarser sort, about a month later.

The bounds to which I propose to confine myself will not permit me to enumerate the different spurges (3), whereof the arborescent are the most beautiful; nor the orchis's, among which those that resemble the bee (4), and butterfly (5), have the preference; much less will they allow me to describe the various species of linarias (6), sea-lavender (7), rattle grass (8), and the vast profusion of ranunculus's (9), and geraniums (10), which enamel the meadows: yet, I cannot omit a few plants, with bulbous roots, and liliaceous flowers, which are a peculiar ornament to the fields; *viz.* a white star of Bethlem (11), a blue muscari (12), a flesh-coloured corn flag (13), vernal daffodill (14), with a yellow cup, an autumnal daffodill with a large white flower (15), snow-drop (16),

(1) Carduus stellat. sive calcitrapa, flore albo, *Card. Blanc.*

(2) Carlina. Arcana flore luteo patulo, *Card. Segrelle.*

(3) Tithymalus, *Lletrera, Baladre.*

(4) Orchis fucum referens.

(5) Orchis papilionem referens.

(6) Linaria, one kind is called *Gallfave.*

(7) Limonium.

(8) Pedicularis.

(9) Ranunculus.

(10) Geranium.

(11) Ornithogali species, an lilium Alexandrinum? *Liri Bord.*

(12) Muscari, *Aiasas.*

(13) Gladiolus, *Coltells.*

(14) Narcissus medio luteus.

(15) Narcissus maritimus C. B. *Azucena.*

(16) Narcisso-leucoium, *Aiasas.*

saffron (1), meadow saffron (2), Spanish nut (3), and two species of asphodell (4), both of which are luxuriant in the richest soils, and from their flowers the bees extract a considerable share of the finest honey.

Besides, in all the uncultivated parts of the island thick evergreen bushes of mastick (5), mock-privet (6), and dwarf olive (7), sprout up in such abundance, that the broken surface of the ground is at all seasons covered with an agreeable verdure.

Intermixed with these is an immense quantity of myrtle (8), sweet gum cistus (9), and rosemary (10); which jointly perfume the air with an exquisite fragrance; and from the flowers of the last a delicious kind of honey is collected early in the spring.

There is also a great deal of the strawberry shrub (11,) heath of various kinds (12), and a long coarse grass (13) on which the goats and black cattle feed, when they are deprived of better sustenance by the severity of the winter.

(1) Crocus, *Safra.*

(2) Colchicum.

(3) Sisyrinchium.

(4) 1. Asphodelus albus non ramos C. B. 2. Asphodelus minor foliis fistulosis, 1. *Porraces, Albuens,* 2. *Cebollas.*

(5) Lentiscus, *Mata.*

(6) Phillyrea, *Ledern.*

(7) Oleastellus, *Ullastre.*

(8) Myrtus, *Murta.*

(9) Cistus labdanifera, *Stepara stepa.*

(10) Rosmarinus, *Romani.*

(11) Arbutus comarus theoph. *Arbose.*

(12) Erica, *Bruc mascle, bruc femelle & sipel.*

(13) Graminis species, *Carex.*

Shrub-trefoil (1), stinking bean-trefoil (2), sea-grape (3), shrub-mullien (4), sloe-tree (5), dwarf-palm (6), widow-wail (7), and another kind of spurge-olive (8), beside that which affords the *grana cnidia* (9), likewise grow in several places: But brambles (10), wild roses (11), and some other thorny bushes (12), are every where so common, that it is requisite for those who would pass through the thickets, to dress like the peasants, in short jackets and leathern spatterdashes.

Hitherto I have treated of the lower vegetables: I proceed next to the trees. And here I must again mention the myrtle, mock privet, lentiscus, and arbutus, as they often rise to the height of trees; and mixing with pines (13), wild olives (14), and great holm-oakes (15), which never lose their verdure, supply the cattle with shelter during the excessive hot or cold weather; and with leaves to feed on, when the summer's sun, or the blasts of the winter, have destroyed the grass of their pastures.

(1) Dorycenium monspeliens.

(2) Anagyris fœtida, *Garrove bord.*

(3) Ephedra anabasis bellon. *Trompera.*

(4) Phlomis fruticosa.

(5) Prunus sylvester, *Prunoné*, *Arrinoné.*

(6) Palma humilis folio flabelliformi, *Garbaions.*

(7) Chamelæa tricoccos.

(8) Thymelæa lanuginosa foliis sedi minor. C. B. P. *Pala marina.*

(9) Thymelæa fol. lini, *Matapoll.*

(10) Rubus, *Romaguera.*

(11) Rosa sylvestris, *Gaverera.*

(12) 1. Genistæ spinosæ species. 2. Vel. Hierac. vel. Dent. Leon. species, 1. *Argelaguera*, 2. Saccorell.

(13) Pinus, *Pi.*

(14) Oleaster, *Ullastre.*

(15) Ilex, *Usinas.*

But it is not the cattle alone which have been furnished with food from these woods and thickets; for in times of famine the inhabitants of this island have been obliged to have recourse to acorns, wild dates (1), the berries of the myrtles, the bramble, the arbutus, and the like; which, if we may believe the poets,* was the nourishment of the primitive race of mankind.

From the qualities of the soil, and the abundance of uncultivated fruit which it produces, one might justly expect, according to VIRGIL's remark,† that the olive would thrive well in this island; yet the natives take so little care to propagate it, that they are obliged to import almost all their oil from France, Spain, and Majorca; and as they purchase it with ready money, it is a considerable detriment to the country. I know it is commonly alleged that they cannot have olives of their own growth in plenty and perfection, because there are but few hills high enough to protect them from the cold northerly winds: but I have been well assured by several very good judges in such matters, that there are many places, particularly in the *Termino* of *Ferarias*, where this tender fruit might be sufficiently sheltered; and that the want of this most useful commodity is rather to be ascribed to the inattention and neglect of

(1) This is the fruit of the *Palma humilis* folio flabelli formi.

* LUCRET. lib. v. VIRGIL's *Georg.* lib. ii. OVID's *Metam.* lib. i.

† Difficiles primum terræ, collesque maligni
Tenuis ubi Argilla, et dumosis calculus Arvis,
Palladiâ gaudent sylva vivacis Olivæ,
Indicio est, tractu surgens Oleaster eodem
Plurimus, et strati baccis sylvestribus Agri.
Virg. Georg. lib. ii.

the people, than to any other cause. I have likewise been assured, that a Spanish governor of this island made use of his authority in obliging the inhabitants to cultivate the olive; and that his endeavours would have had the desired effect, if they had been duly seconded in succeeding times. Wherefore it were to be wished that some of his British successors would follow so laudable an example; for without their assistance it is to be feared, that a people so tenacious of the customs of their ancestors will scarcely come into a new project, however advantageous it might prove to posterity.

From the berries of the mastick they extract an oil (as DIODORUS SICULUS tells us they did in his time) which is commonly used for lamps, and sometimes by poor people for frying fish; in which case they previously correct its astringency by dipping in it a piece of soft bread. The leaves of the myrtle are very serviceable in tanning their leather, and in dyeing their cloths black, which is a favourite colour among the Spaniards; and its tough flexible boughs, being properly twisted, make the best and most durable rope for the Persian wheel abovementioned.

The berry-bearing savine (1) grows to a considerable height in several places near the sea coast; and the marshy valleys afford plenty of oziers (2), and tamarisk (3), of which the islanders make hoops for their casks. The carob-tree (4), the hawthorn (5),

(1) Sabina folio cupressi, C. B. *Savina.*
(2) Salix viminea, *Vime.*
(3) Tamariscus, *Tamarell.*
(4) Ceratia, *Garrove.*
(5) Mespilus apii fol. sylv. spin. *Spinal.*

and evergreen privet (1) are likewise to be met with in the woods; as also a few specimens of the agnus castus (2).*

And now having taken a view of the vegetable kingdom, it would be no difficult task for me to show, that the indigenous plants are well adapted to the nature of the climate, and wisely calculated for preserving or restoring the health of the inhabitants: but as it would be tedious to descend too far into particulars, I shall only observe, that even the shape and figure of the trees seem to be somewhat more than merely the effect of chance. None of them grow tall or lofty; they never lose their leaves; and the greater part of them have their trunks so bent by the north wind, that their tops, which are broad and bushy, stretch out almost horizontally towards the south, and furnish a commodious shelter to man and beast, against all inclemency of the weather. What still makes them fitter for this purpose is the numerous climbers that are commonly joined with them; particularly the traveller's joy (3), and prickly bind-weed (4), which are often so interwoven with the wide spreading branches of the lentisc and wild olive, as to render the retreat which they afford almost impenetrable by rain or sun. Had not nature provided such a necessary cover, few or no animals

(1) Alaternus, *Llampugal.*

(2) Vitex, *Alloch.*

* The reader may be pleased to take notice, that the Latin names are those by which they are described by Tournefort; the others, in Italics, are those by which the natives distinguish them.

(3) Clematis, *Vid. Auba.*

(4) Smilax aspera, *Arritges*

could live on these rocks in the tedious scorching summers; nor could they well endure the heavy rains and chilling blasts to which the climate is liable.

From what has been said it sufficiently appears, that these evergreen woods and thickets, which nature has surprisingly raised upon a rock, are not only a great ornament to this island, but of infinite advantage to the inhabitants; as they furnish them with fuel, and their cattle with food and shelter; and as the finer soil is washed away by the anniversary rains, their fields would soon become barren, if they were not constantly supplied with fresh manure from the leaves of the vegetables, intermixed with the dung of the animals which feed in the woods. The natives, therefore, are much to be blamed in felling so many of their trees, and stubbing up the roots so rashly, as they have done of late years, for immediate profit, since the damage will soon be sensibly felt, and not easily retrieved, by their posterity.

The mineral kingdom affords less variety here than any other part of nature's works. The soil is of two kinds, whereof one is light, blackish, and very fruitful; the other, called *terra agra* by the natives, is a heavy, barren, redcoloured earth. There is a potter's clay, of which they make tiles, bricks, and a coarse kind of earthenware. Limestone and plaster of Paris are found here in great abundance, and supply the inhabitants with different sorts of cement for their buildings. The stone commonly used in building is a white soft grit, which is easily cut into any form, and quickly cemented by means of the plaster of Paris; so that they raise walls, and turn arches with great expedition. But in many

places of the island, especially towards the north-east side, the only stone to be met with is found in shivers, like slate. In caves not far from *Ciudadella* is an infinite number of beautiful *stalactites*, some of which are hard enough to admit of a polish. There are some fossil shells; but no kind of metal, as far as I know, occurs in *Minorca;* though there is a good deal of metallic ore in the small island of Columba adjoining to it.

With respect to the animals, I shall only mention such as are used for food by the inhabitants; beginning with the fish, of which there is both plenty and variety. Some of them are to be caught at all times either in the bays or harbours, or in the deeper water at sea; whilst others come regularly in shoals at certain seasons of the year: but as many of them are unknown in Britain, or at least have no name in our language, I must refer the reader to the bottom of the page,* where he will find inserted the

* *Pisces litorales,* *Peix litoral.*

(1) Polypi prima species Rondeletii, *Pop Fuen.*
(2) Polypi secunda species Rond. *Pop ver.*
(3) Loligo magna Rond. *Eluja.*
(4) Loligo parva Rond. *Calemar.*
(5) Sepia Rond. *Sipia.*
(6) Urtica, *Ortiga.*
(7) Anguilla Salv. *Anguila.*
(8) Conger Rond. *Congre.*
(9) Muræna omnium Autorum, *Morena mascle, y femele.*
(10) Salpa Rond. *Saupa.*
(11) Sargus Rond. *Sarch.*
(12) *Morruda.*
(13) Scaras Onias Rond. *Variadá.*
(14) Sparus Rond. *Esperai.*
(15) Aurata Rond. *Orada.*

names given them in Minorca, and those bestowed on them by the best authors who have treated on fishes.

Pisces litorales, *Peix litoral.*

(16) Melanurus Rond. *Oblada.*
(17) Mormyrus Rond. *Mabre.*
(18) Erythrinus Rond. Rubellio Aldr. *Pagell.*
(19) Pagrus Rond. *Pagre.*
(20) Dentex sive Synodon Aldr. *Dental.*
(21) Coracinus Rond. *Curbai.*
(22) Buglossus, seu solea Rond. *Llenguada.*
(23) Passer Bellonii, *Pedas.*
(24) Cantharus, *Cantara.*
(25) Lupus Rond, *Llop.*
(26) An Acarnan Rond? *Besuc.*
(27) Scorpius major Rond. Gesn. *Cap rotx Rotje.*
(28) Scorpius minor sive Scorpæna Rond. Gesn. *Raselé Scorpera.*
(29) An Anthiæ secunda species Rond.? an Phycis Rond.? *Mollera, Molle.*
(30) Mullus Barbatus Rond. *Moll.*
(31) Channa Rond. *Serra.*
(32) Merula Salv. & Rond. *Mero, Enfos.*
(33) Turdus varia specie, *Tort musot, flavasado, Bovos, pintado, Grivia.*
(34) An Cestreus Rond.? *Llisa.*
(35) An mugil Cephal. Rond.? *Cap pla.*
(36) Julis Rond. *Donzella.*

Pisces testacei & crustacei, Peix de Closca.

(1) Astacus Rond. *Grumant.*
(2) Locusta Rond. sive Carabus, *Llangosta.*
(3) Squilla lata Rond. *Sigala.*
(4) Pagurus, *Cabre.*
(5) Cancri varii, *Cranchs peluts, reals, Jueus.*
(6) Squilla parva, *Gambe.*
(7) Echinus varia specie, *Voga mari.*
(8) Pinna magna, *Nacre.*
(9) Pholas, *Datil.*
(10) Testudo marina, *Tortuga.*

The island abounds with cattle, sheep, and goats, which furnish the inhabitants with cheese and wool, both for their own use, and for exportation. As lard or oil is commonly used in dressing their victuals,

Pisces litorales, *Peix litoral.*

(11) Musculus, *Muscle.*
(12) Tellinæ, *Cluisas.*
(13) Ostreum, *Ostia.*
(14) Lepas, Patella, *Pagellida.*
(15) Pecten, *Cupina gravada.*
(16) Cancellus, *Hermitan.*
(17) Cochlea varia specie, *Cornes & Caragols.*
(18) Murex, *Corns de fell.*
(19) *Pau de Cabrit.*

Pisces Pelagii. *Peix de alt al mur.*

*(1) Phocæna Rond. *Delfi.*
*(2) Centrine Rond. *Peix pore.*
(3) Squatina Rond. *Escat, Escat vexigal.*
*(4) Zygæna Rond. *Llunada.*
(5) Catulus maximus, forte Canicula saxatalis Rond. *Gats.*
(6) Catulus major vulg. Canicula Arist. Rond. Aldr. *Gatons, Pintarotge.*
(7) Mustelus lævis primus salv. *Musola.*
(8) Galeus Acanthias, Spinax Aldr. *Caso.*
(9) Xiphias Piscis, *Peix de Espasa.*
(10) Pastinaca Aspera Bellon. *Romaguera.*
(11) Pastinaca mar. læv. Bellon. *Ferrasa.*
(12) Aquila Bell. & Salv. *Mila.*
(13) Rana Piscatrix, *Buldroy.*
*(14) Torpedo, *Tremulo.*
(15) Raia varia specie, *Ratjada, Caputxi, Clavell, Clavell borrell, Cardayre.*
(16) Faber sive Gallus mar. Rond. *Gall, Peix de san Pedro.*
(17) Milvus Salv. Hirundo Rond. *Xurigué.*
(18) Mugil alat. Rond. Hirundo Plin. *Uranola.*
(19) Cuculus Aldr. *Gallina, Gallinetta.*
(20) Lyra prior Rond. *Grenau, Peix de san Rafael.*
(21) Mullus imberbis Rond. potius Cuculi species, *Cabot de la mar.*

they make but little butter, and this by a very singular process. They boil the whey, which is pressed from the curd in making cheese, and skim off the part which rises to the top; when they have collected a proper quantity of this, they work it a considerable time with their bare feet or arms, the only method

Pisces Pelagii. *Peix de alt al mur.*

(22) Gurnardus griseus, *Uliora, Baluerna.*

(23) Draco sive Araneus Plinii, *Arana.*

(24) An Ophidion Rond.? an Acus lumbriciformis Willough.? *Drago, Saltan cono.*

(25) Uranoscopus, Callyonimus, *Rata.*

(26) An Perca marina Rond.? *Serran imperial.*

(27) An Stromateus Rond? *Llampuga.*

(28) Pompilus, *Pampul.*

Pisces gregales autumnales.

(1) Acus vulgaris oppian. *Aguia.*

(2) Sardinia Rond. *Sardina.*

(3) Thrissa Rond. *Alatx.*

Pisces gregales hyemales.

(1) Pelamys Bellon. Amia Rond. *Bonitol.*

Pisces gregales vernales.

(1) An Thynni species? *Sirvia, Sirviola.*

(2) Sphyræna, sive Sudis Aldr. *Espet.*

Pisces gregales Æstivi.

(1) Scomber, *Veirat, Cavallar.*

(2) Trachurus Ald. *Saurell.*

(3) Mænæ duplex species, *Mora & Xucla.*

(4) Smaris, *Gerretts.*

(5) Boops Rond. primus, *Voga.*

(6) Encrasicholus Aldr. *Anxove, Aledroc.*

Note. In the above catalogue of fish it is to be observed that *Willoughby's* names are commonly made use of; and such as are marked with an asterisk are seldom or never brought to table.

of churning with which they are acquainted; then by the addition of cold water the butter which floats upon the surface is separated; and after being washed is boiled till the watery particles are evaporated. By this process it acquires, when cold, the taste and consistency of a thick, sweet, oil.

Beef and mutton, though commonly lean, are eatable throughout the year: but in the spring, while the grass is tender, the latter is in its greatest perfection; and the former in summer, when the cattle feed on the stubble and leaves of the evergreens.

The goats are fattest in autumn, and are slaughtered from September to January, chiefly for the use of the common people.

But of all the kinds of meat none is here in so great plenty and perfection as pork; nor is any other so much esteemed by the natives. It is in season from September to Lent. Bacon is to be had at all times; and, being fried or boiled, is commonly eat with bread for breakfast. They enrich their broth with hog's lard; and from the same animal they make a great variety of puddings, particularly sausages (sobreassados), scarce inferior to those from Bologna.

They have likewise plenty of rabbits; as also hedgehogs, and land turtles, which are sometimes eat by the poor.

Their domestic fowls are turkeys (1), geese (2), ducks (3), cocks and hens (4), in great numbers.

(1) Gallo pavo sive meleagris, *Galls de India.*
(2) Anser domesticus, *Ojas.*
(3) Anas domestica, *Anades.*
(4) Gallus gallinac. & Gallina, *Galls & Gallinas.*

In the woods and fields (besides various kinds of owls and birds of prey, which I pass over, as they never make a part of diet) we have ring doves (1), red legged partridges (2), stone curlews (3), quails (4), blackbirds (5), solitary sparrows (6), nightingales (7), gold-finches (8), and an infinite number of other small birds.

Wild ducks of different kinds (9), wigeons (10), teal (11), coots (12), and several sorts of water hens (13), are common about the ponds and marshes; kings-fishers (14) are frequent about the shore; and flocks of rock-pigeons (15) breed in the caves and hollows, formed by the dashing of the waves round the coasts.

Beside all these, swifts (16), swallows (17), sand martins (18), turtles (19), bee eaters (20), hoo-

(1) Palumbus torquatus Aldr. *Tudons.*

(2) Perdix ruffa, *Perdius.*

(3) Oedicnemus Bellon. Charadrius Gesner. *Sabellins.*

(4) Coturnix, *Gualleras.*

(5) Merula vulgaris, *Torts.*

(6) Passer solitarius, *Melleres.*

(7) Luscinia seu Philomela, *Rossinols.*

(8) Carduelis, *Carderneras.*

(9) Anas fera, varia specie, *Anades rosas de coll blau, sayardes, soteras.*

(10) Penelope.

(11) Querquedula, *Anadons.*

(12) Fulica, *Fotges.*

(13) Gallinula varia specie, *Pollo's de Riu Gallets de Riu Titetas.*

(14) Ispida, an Veterum Alcyon?

(15) Columba rupicola, *Coloms.*

(16) Hirundo Apus, *Vinjolas.*

(17) Hirundo domestica, *Uranellas.*

(18) Hirundo riparia, *Culs blanchs.*

(19) Turtur, *Tortora.*

(20) Merops sive Apiaster, *Abeyrols.*

po's (1), and sky larks (2), arrive here in the spring, and, after bringing forth their young, leave the island in autumn.

Woodcocks (3), snipes (4), a small sort of pigeon (5), green and gray plovers (6), redwings (7), fieldfares (8), oxeyes (9), chaffinches (10), starlings (11), foreign quails (12), and daker-hens (13), make their appearance about the end of *October*, and remain during the winter. Cranes (14), wild geese (15), and curlews (16), sometimes stop here, as if it were to recruit themselves for a further flight; and now and then we meet with a flamenco (17).

It is observed that the flesh of such fowls as feed on land frequently tastes of mastick or garlick; and the water fowl are best in bad weather, when the storms prevent their going to sea, and living upon fish.

But as several of the animals abovementioned are only to be met with at the tables of the opulent,

(1) Upupa Aldrov. *Puputs.*
(2) Alauda, *Turrolas.*
(3) Scolopax, *Segues.*
(4) Gallinago minor Aldr. *Begasines.*
(5) An Columba livia Gesner.? *Xexels.*
(6) Pluvialis viridis & cinericea. *Kilots & juyes.*
(7) Turdus iliacus, *Torts borrell.*
(8) Turdus pilaris.
(9) Fringillago, *Ulls de bou.*
(10) Fringilla, *Pinsans.*
(11) Sturnus, *Estornells.*
(12) Coturnix, *Gualleras babarescas.*
(13) Ortygometra, an Rallus terrestris?
(14) Grus, *Gruas.*
(15) Anser ferus, *Ojas salvages.*
(16) Numenius sive Aquata.
(17) Phænicopterus, *Flamencos.*

the plentiful provision of snails (1), with which nature has furnished this island, are of infinite service for the maintenance of the poorer families, who eat them boiled, after having been kept within doors long enough to lose their earthy taste. In dry weather, when they are in their prime, they lurk in the chinks of the earth and crannies of the rocks, and commonly stick together in large clusters like grapes; which probably induced the Romans to give them the name of *cochleæ cavaticæ:* but in wet moist weather, they leave these places of retirement in quest of food, and are frequently to be met with on the stalks of the asphodells, the shoots of the vines, and other vegetables; for what PLINY says of their never coming out of their caves, or feeding on greens, is intirely fabulous. Lib. viii. cap. xxxix.

Having given these short hints relating to the natural history of Minorca, I shall now describe the temper and manners of the people, so far as may be necessary to introduce an account of their diseases.

The natives of this island are commonly thin, lean, and well built, strong and active, of a middle stature, and an olive complexion. Their hair, for the most part, is black and curled; in many chesnut coloured; in some red. In a word, the young people are either of a sanguine or choleric constitution; while those of more advanced years become dry, meagre, and, what the ancients called atrabilious. Such is the natural impetuosity of their temper, that the slightest cause provokes them to anger; and they are equally incapable of forgiving and forgetting an injury.

(1) *Caragols, Boves, Mongetas, Caragolins.*

Hence it is, that quarrels about the merest trifles daily break out even among neighbours and relations; and family disputes are hereditarily transmitted from father to son. Thus, though lawyers and pettifoggers are very numerous in this country, yet there are still too few for the clients.

They do not commonly live to so great an age as the inhabitants of more northerly countries; though, perhaps, they are equal in this respect to their nearest neighbours on the continent. Girls soon arrive at maturity, and soon grow old. The menses, for the most part, appear before fourteen, and frequently at eleven years of age; in some they return twice a month; in others, every three weeks, and continue from three to seven days. Both sexes are, by constitution, extremely amorous. They are often betrothed to each other while children, and marry at fourteen. The women have easy labours, and commonly return in a few days to their usual domestic business. Lest the family should become too numerous for their income, it is a practice among the poorer sort to keep their children at the breast for two or three years.

Bread of the finest wheat flour, well fermented and well baked, is more than half the diet of people of all ranks. Rice, pulse, cuscassowe, vermicelli, herbs and roots from the fields and gardens, summer fruits, pickled olives, and pods of the Guinea pepper, make up almost the other half; so that scarce a fifth of their whole food is furnished from the animal kingdom; and of this fish makes by much the most considerable portion. On Fridays, and other fast days, they abstain entirely from flesh; and

during lent they live altogether on vegetables and fish, excepting Sundays, when they are permitted the use of eggs, cheese, and milk. Most of their dishes are high seasoned with pepper, cloves, cinnamon, and other spices; many of them are tinged with saffron; many sweetened with honey or sugar; and garlic, onions, or leeks, are almost constant ingredients. They eat a great deal of oil, and that none of the sweetest or best flavoured; using it not only with sallads, but also with boiled and fried fish, greens, pulse, &c. instead of butter. A slice of bread soaked in boiled water, with a little oil and salt, is the common breakfast of the peasants, well known by the name of *oleagua*. Their ordinary meals are very frugal, and consist of little variety: but on festivals, and other solemn occasions, their entertainments are to the last degree profuse and extravagant. The bill of fare of a country farmer's wedding dinner would scarce be credited. This custom, with many others, they seem to have borrowed from the eastern nations.

People of all conditions use wine at their meals; and though drinking to excess is not common, yet the vulgar are not exempted from private debauches, drams of anniseed water being too much in vogue. In summer the excessive heat obliges them to have frequent recourse to large draughts of cold water, the greater part of which is but very indifferent; for the cisterns are seldom clean, and the water which the springs and rivulets afford is often brackish, and always hard; so that it is neither proper for washing, nor for boiling pulse, and leaves a stony crust on

the sides of the teakettles, and other vessels in which it has been frequently boiled.

Though the natives make three or four plentiful meals a day, yet they are generally costive; and many, in perfect health, have no occasion to ease themselves oftener than twice a week.

They are so much addicted to the use of tobacco, as never to be without a pipe, either in their mouths or their pockets. In summer almost every one sleeps an hour or two after dinner, and some follow this practice throughout the year.

A fourth of their time is made up of holidays, on which, though work is prohibited, sports and pastimes are allowed. A considerable part of those days is spent in the churches, or in processions: at night the more sedate divert themselves in their houses with music and cards; whilst the young men serenade their mistresses, in the streets, with the jarring musick of their guitars, and extemporary love songs of their own composing.

In the interval between the harvest and the vintage there is a number of public diversions in different places of the island. Whether because the people have then most leisure, or are in reality more cheerful from the serenity of the weather, as one of their proverbs* seems to hint, I shall not determine. To their horse and foot races,† notwithstanding the

* *En lo estiu tout hombre viu.* In summer every body is alive.

† On St. JOHN's day, June the 24th, and the Sunday following. On St. PETER's day, June 29. On St. JAMES's day, July 25. On St. LAURENCE's day, August 10. On St. BARTHOLOMEW's day, August 24, and the 29th of the same month. On St. GRACIA's day, September 8.

immoderate heat of the season, men, women, and children flock from all quarters, and expose themselves to the sun in the middle of the day, dancing in the open air on the scorching rocks, and rattling their castanets in concert with the music of the guitar. Nor does their mirth finish with the day; as soon as it grows dark some pieces of pine tree are lighted as a torch in the middle of the street, where the crowd assembles, and continues dancing till morning.

Every year, on St. Peter's day, June 29, they have likewise a diversion in Mahon harbour, which may properly be called a boat race; and one cannot observe the eagerness of the boatmen, and the solicitude of their friends on shore, without calling to mind VIRGIL's description of a similar contest on the anniversary of Anchises's funeral. *Æn.* v. *ver.* 129.

In the carnival too, this people, however grave and serious at other times, freely indulge themselves in all manner of ludicrous sports and amusements; especially during the last week of it, when their revelling and extravagant mirth resembles more the ancient *bacchanalia*, than the diversions of any modern civilized nation: for night and day the streets are filled with people in masks, and dressed in the most ridiculous habits; while the jarring sound of castanets, pipes and tabors, violins, guitars, and their more discordant vocal music, heightened with screaming, shouting, and every wild demonstration of intemperate joy, make almost one continued uproar.

After this excess of mirth the fasts enjoined by their religion succeed, and continue till the expiration of lent; at which time a sheep or a lamb is slaughtered by each family; and on the joyful night

which puts an end to this mortifying season, they endeavour, as it were, by one voracious meal to make up for the abstinence which they have been compelled to observe. This proves fatal to some, and would undoubtedly be so to many more, if nature did not prevent the effects of their intemperance, by a *cholera morbus*, or some such relief.

The last thing to be taken notice of with regard to the manners of these islanders, is, that their great veneration for antiquity, and the little intercourse which they formerly had with other nations, have occasioned a number of old customs to be still kept here at this day. Thus, poetical disputes are much in vogue amongst the peasants.* One of them sings some extemporary verses on whatever subject he pleases, and accompanies them with the music of his guitar: he is immediately answered, in the same number of unpremeditated lines, by another, who endeavours to excel or ridicule him; and this alternate contest lasts, to the no small amusement of their attentive companions, until the wit of the rival poets be exhausted. These are the *carmina amoebœa* of the ancient Greeks, in imitation of which some of the pastorals of THEOCRITUS and VIRGIL were written. In imitation of the ancients too, it is customary for lovers to pelt their mistresses with oranges, as a mark of their regard;† though this is a diversion reserved for the carnival. The practice of throwing nuts and almonds at weddings, which VIRGIL mentions (Eclog. viii,) is likewise retained.

* These verses are called *glossos*, and those who excel in making them, *glossodors*.

† Malo me Galatea petit lasciva puella, &c.

Virg. Eclog. iii.

Soon after a person is deceased his friends and relations assemble in the house to bewail their loss, and commemorate his virtues, weeping and howling with all the seeming agonies of distress; and that this was an ancient custom, appears by the elegant and pathetic funeral dirge, which we find in LUCRETIUS (lib. vi.) And in this island, as in the southern provinces of France, and in Italy, the dead bodies are not nailed up in coffins, but carried in an open litter to the grave, which, we learn from authors, was also practised, on some occasions, among the old Romans.* Another instance of their inviolable attachment to ancient usages, is the manner in which the women wear their hair; for, contrary to the custom of all the neighbouring countries, excepting Majorca, they force it with fillets to the back part of the head, and bind it in a *queue* of a considerable length. When the natural locks are not long enough for this purpose, false ones are added to supply the deficiency; for nothing is reckoned more unbecoming than to be destitute of a tail, or to appear with one too short. But not to be tedious with too many instances, I shall only add, that in the use of the sling the present inhabitants of Minorca are no less dextrous than their forefathers, who are said to have driven the Romans off their coasts by vollies of stones (Flor. Epitom. lib. iii.) The shepherds, or those that tend the cattle, seldom miss such of them as fall under their displeasure; and by this means they have their flocks and herds so much at command, that even the cracking of the empty sling is sufficient

* See CORNELIUS NEPOS on the burial of T. POMPONIUS ATTICUS, and LISPIUS's Notes on this passage.

to intimidate them, and bring them together in such parts of the pasture as their keeper pleases: and as the cattle are often maimed and hurt by the severe chastisement inflicted by means of this instrument, the farmers find it expedient to forbid the use of it to such of their servants as are of a cruel and mischievous disposition.

The mentioning of their cattle puts me in mind of two other singular practices which prevail here, viz. that of castrating animals by bruising their testicles, which, we learn from ALBUCASIS (Chirurg. p. 2. cap. lxix.) was customary among the Arabians; and the way of slaughtering oxen, by thrusting a knife into the *medulla spinalis*, immediately behind the occiput, which is so much preferable to the method of knocking them on the head, that it is surprising other nations do not fall into it.

Having gone through what I intended to remark in relation to the natives, I should next, according to the plan of this introduction, give a circumstantial account of the diet, and common way of life, of the British soldiers in this island; but as this would be a disagreeable task, I shall only observe, that the excess of drinking is, among them, an universal vice, confirmed into a constant habit. *Pudet hæc opprobria nobis, &c.*

But however different the Spaniards be from the English, in their meat, drink, exercise, affections of the mind, and habit of body; yet the health of those of both nations is equally influenced by the seasons. An epidemical distemper seldom or never attacks one class of inhabitants, while the other remains unhurt; and surprising as it may appear, it is never-

theless true, that the peasants, who are remarkable for temperance and regularity, and the soldiers, who, without meat and clothes, frequently lie abroad drunk, exposed to all weathers, have diseases almost similar, both as to their violence and duration. Hence it is evident how far the power of the air is superior to that of the other nonnaturals in producing disorders of the animal economy.

The diseases which, from their frequency in this island, I reckon *endemial*, may be divided into two classes; the *epidemic*, or such as affect numbers together at particular seasons; and the *sporadic*, which are equally common at all times of the year. To the first belong the *rash*, *essere*, *cholera morbus*, *tertian fevers*, *fluxes*, *pleurisies*, *peripneumonies*, *erysipelatous fevers*, *and those that are accompanied with catarrhs:* to the second, *obstructions of the abdominal viscera*, *the hæmorrhoids*, *ulcers of the legs*, *ruptures*, *inflammations of the eyes*, and *nephritic pains*.

With respect to the epidemics, it may not be improper to observe in general, that acute fevers are more frequent here than in England; that they are much more violent, but of shorter duration; that they oftener terminate completely by a manifest crisis; and in all respects agree much more exactly with what the ancients have said concerning such evacuations, and the periods in which they usually happen.

The most common diseases of the sporadic kind are obstructions, indurations, and swellings of the glandular viscera in the lower belly; together with wind in the first passages, and bad digestion. The causes of these obstructions seem to be, in the first

place, a scarcity of good water; for, as HIPPOCRATES has well observed,* *Where there are no rivers, and the inhabitants are obliged to drink stagnating, ill-scented well water, such must needs hurt both the belly and the spleen.* And it is remarkable, that large spleens, like those described by Trallianus (lib. viii, cap. xii,) and hard tumefied livers, are not only common to the human species here, but also to brutes; particularly the sheep that feed on the northeast side of the island, where the waters are very brackish; though the butchers, to whom this fact is well known, generally ascribe it to their eating the horse-mint and pennyroyal, which abound in the pastures.

Secondly. The intense and long continued summer heats, by dissipating the finest particles of the animal juices, necessarily leave the rest of a grosser and more earthy nature. And thus is a large proportion of that kind of matter generated in the blood, which the ancients called *atrabilious;* and this being deposited in the viscera, occasions the above-mentioned obstructions. See Boerhaave's Aphorisms de Melancholia.

Thirdly. Another cause of these obstructions is the frequency of acute diseases, and more especially of tertian fevers, which, as they frequently relapse, and go off with imperfect crises, weaken the tone of the chylopoetic viscera, and at last terminate in hard scirrhous tumors of the liver and spleen.

It is likewise probable that their living so much upon pulse and crude vegetables, the abuse of spirituous liquors, their high seasoned diet, their passionate temper, and immoderate use of venery, co-

* De Aere, Aquis, et Locis, sub finem.

operate with the causes just now mentioned, in producing the same effects.

But such is the goodness of Providence, that every climate seems to yield domestic antidotes for the endemial diseases.* Accordingly we find that this island abounds with whey, honey, summer fruits, gentle cathartics, hieracea, cichoracea, and all that class of plants and roots with aperient saponaceous juices, which antiquity has recommended as specifics or approved remedies in obstructed bowels.

But in these distempers it is universally allowed, that nothing is of so much advantage as the hæmorrhoidal flux; and therefore, however frequent and troublesome the piles may be in this climate, they ought to be considered rather as a benefit of nature, and a remedy, than as a misfortune, or a disease; more especially as they prevent pleurisies and peripneumonies, according to the doctrine of HIPPOCRATES. De Humor. & Epid. lib. vi.

BAGLIVI † tells us, that at Rome ulcers of the legs are almost incurable, and wounds in them difficult to heal; while the like accidents on the head are quickly cured without any trouble. The same thing happens here, insomuch that it is a proverb among the natives, "*Minorca is good for the head, but bad* "*for the shins.*"‡ This, perhaps, is owing partly to the redundancy of atrabilious particles in the blood, which naturally flowing into the inferior branches of the aorta, constantly keep open any outlet through

* See the quotations from RAY and BENOROVINUS, in DERHAM. Physico Theolog. Book x.

† Prax. Med. lib. i. p. 102.

‡ *Minorca es bo de Cap y mal de Camas.*

which they have once found the way; partly to the large obstructed viscera, compressing the vena cava, and hindering the free return of the fluids from the inferior extremities. Hence we find, that ulcers of the legs, with black cicatrices (such as may daily be seen among the soldiers and Spaniards), are mentioned both by HIPPOCRATES (De Morb. Intem.) and CELSUS (lib. ii, cap. vii,) as the effect of overgrown spleens.

And now it plainly appears why ruptures are so common in this place; for the other bowels being swelled beyond their natural size, the intestines are too much confined; and from the nature of the aliment, being frequently distended with wind, it is not to be wondered at, that they often push through the rings of the abdominal muscles.

In so hot and dry a country as this all the parts of the body are very subject to topical inflammations: But the eyes are most particularly affected in this way; which seems to be occasioned chiefly by the strong dazzling light reflected, during the summer season, from the white rocks and sand; to which we may perhaps add, that the floating particles of salt, dust, and minute insects, wherewith the air often abounds, do likewise injure the tender texture of this organ, and give rise to ophthalmias, or increase them.

Whatever dissipates the finer parts of our fluids, and increases the proportion of earth and fixed matter (and several such causes I have already had occasion to take notice of), will be apt to produce sand and gravel in the urinary passages; though it is probable, that the calculous concretions and nephri-

tic pains are chiefly owing to the waters, which, as I formerly observed, are mostly hard and brackish, and let fall a large quantity of stony sediment after boiling.

The convulsion of the lower jaw in children ought likewise to be reckoned among the sporadic distempers. And as it is both very frequent and fatal in this island, and some of the neighbouring countries, I shall give a description of it from HYACINTHUS ANDREAS, a Spaniard, who, about the end of the last century, published an abridgment of RIVERIUS, under the name of Praxis Medica Gotholanorum, with very little addition of his own, excepting an account of this disease, which most other authors have omitted. *In hac urbe nostrâ Barchinonensi afflictantur plurimi infantes, adeo feroci convulsione mandibulæ inferioris, ut ea apprehensi, nullo possint motu illam movere, et abhinc suctus lactis impeditur omnino. Emergit hoc malum ex causa humiditatis regionis, et potissimum si matres, prægnationis tempore, minus sobrie vixerint; et usæ fuerint alimentis humidis, et potibus gelidarum eximiis: et quanquam istas duas inveniamus causas, adeo manifestas, existimo tamen potius hanc cladem insolescere, ex peculiari cœli vel astrorum influxu, quam ex illis duabus: Nam in plurimis aliis humidis regionibus laute bibunt mulieres, et tamen non afflictantur infantes (ita attestantur medici) morbo isto diro, quemadmodum in hac nostra civitate, in qua tot interficit mala ista convulsio, ac variolæ aut morbilli. Unde si in toto orbe premantur infantes unico tyranno, nempe variolis, in hac quidem civitate, duplici conflictantur, sciz. variolis et convulsione mandibularum, quæ a nostris mulier-*

culis et obstetricibus vocantur barrettas, in quarum periculum incurrunt recenter nati, usque ad nonum sui nativitatis diem, eoque transacto, omne discrimen cessare docuit semper experientia. It is needless to add the remedies prescribed by our author, who ingenuously confesses, that the disease is so seldom curable, that in twenty years' practice he had scarce known six recover.

To these we may add the following hurts arising from endemial causes. The children and peasants are often ulcerated with the caustic milky juice of the figtrees and spurges, which are common in the fields: in drinking corrupted waters sometimes leeches are swallowed, which I have known to occasion extraordinary symptoms, such as coughs, nausea, spitting of blood, &c. to the great surprise of both the physician and patient, who were entirely ignorant of the cause of these complaints. The pastinacæ marinæ, and aquila, wound dangerously with the stings in their tails; and the scorpius, scorpæna, and draco, with the prickles of their back; (for which reason the fishermen are obliged by law to cut off these weapons before they bring the fish to market). In the hot weather the viper, the land scorpion, and the small black field spider, are reckoned poisonous. In the spring the hedgehogs, *flagrantes æstu venereo*, are said to pollute the waters, to which they have access, and thereby occasion a strangury and priapism to those who drink of them: and at this season the flesh of these animals has the same effect, though it is wholesome and innocent enough at other times of the year. But as accidents of this

class rarely occur, it is sufficient barely to mention them.

In the opinion of the natives no diseases are more frequent here than witchcraft, charms, and evil spirits. Those nevertheless, I shall entirely omit, having neither leisure nor inclination to enlarge upon the craft of the clergy, and the credulity of their flocks: but whoever desires to see this subject copiously handled, may consult the learned father FEIJOO, who, in his useful and elaborate volumes on vulgar errors, has taken occasion to expose the tricks of those pious jugglers, who pretend to exorcise evil spirits, together with several other impostures of the same nature.

These particulars I thought it necessary to premise, before we enter on the history of the epidemical diseases. In excuse for whatever errors I may have committed in this mixed essay, I hope I may be allowed to plead, that I wrote it in a part of the world, which afforded me very little assistance either from men or books.

Qualemcunque igitur veniâ dignare libellum
Sortis et excusa conditionem meæ. *Ovid.*

Minorca, An. Dom. 1747.

AN ESSAY

ON THE

EPIDEMICAL DISEASES

IN

MINORCA.

CHAPTER I.

Of the Weather from the Year 1744 *to* 1749.

I AM sorry that it was not in my power, for want of conveniency and proper instruments, to determine exactly the weight of the air, the quantity of rain, and the force of the winds: notwithstanding which omissions, I flatter myself, the following short account of the principal variations of the weather, taken from a diary regularly kept, with very few interruptions, will neither be entirely useless nor unacceptable: and, in order to make it better understood, I shall premise a few explanatory observations.

In the first place, in speaking of days and months, I use the old style, as is customary among the English in Minorca; though the natives reckon by the new: and where it appeared necessary to distinguish

the forenoon from the afternoon, I have annexed a. m. or p. m. to the particular days.

Secondly, Wherever a rainy day occurs, without any dots after it, the reader will be pleased to take notice, that only drizzling rain, or a slight shower happened on that day: but if two dots be placed after it, in this manner · · it signifies one or more smart showers to have fallen: if three dots · · · great rains: if four · · · · extreme heavy rains, or rather floods of water.

Thirdly, Wherever the thermometer is mentioned, it is to be understood of a large mercurial one, graduated according to FAHRENHEIT's scale, and kept in a proper place within doors; except when I describe the heat of the sun's rays; which was measured by a smaller instrument of the same kind, hung out at an upper window, in the open street, at a considerable distance from the walls of houses. Both these thermometers, being dipt in snow, fell to the 32d degree. Both were raised to the 96th, 97th, or 98th degree, by the natural warmth of persons in health. Nor did I observe any other difference between them, excepting that the mercury in the smaller was sooner affected by heat or cold, and consequently a little quicker in its motions; which occasioned its being found sometimes a degree higher in summer, and as much lower in winter, than the quicksilver in the large thermometer.

Fourthly, The height of the thermometer, at a medium, during each month, is calculated from observations made about three o'clock in the afternoon, when the mercury is commonly higher by one or two

degrees in winter, and two or three in summer, than in the mornings and evenings.

Fifthly, The difference between the heat of air warmed by the direct rays of the sun, and that in the shade, is at a medium in summer, about 13 degrees. Whenever it was remarkably greater, notice will be taken of it; as likewise of the most extraordinary heights to which the mercury rose, when the thermometer was exposed to the sun, at other times of the year.

Sixthly, The mercury seldom or never sinks below the 48th degree in Minorca, except when sharp winds blow from the north, which cause the weather to seem as intensely cold as it is in England, when the thermometer has been ten degrees lower. And upon the descent of heavy rains, particularly in the autumn, the cold affects us much more sensibly than one would imagine, from the alteration of the thermometer.

These things being premised, I proceed to describe the most remarkable changes of the weather, in each month, during the period of time that produced the epidemical diseases, which are the subject of this treatise.

A. D. MDCCXLIV.

January was mild and temperate in the beginning: but after the rains, about the middle of the month, it continued, for the most part, cold and cloudy.

Rainy days, 1, 6, 9, · · 10, · · 11, 14, 15, · · · · 19, · · with hail, 20 with hail, 24, 27, 30.

The first days of *February* were cloudy, cold,

rainy, and stormy: from the 4th to the 19th the weather was moderate and seasonable, without excessive rains or immoderate cold: from which to the 26th it was fair and warm: but afterwards to the end of the month, rough and stormy as in the beginning.

March, during the first week, was sometimes warm and sometimes cold: but in the three last weeks piercing winds blew constantly from the north, with frequent rains, and sometimes hail.

The weather continued colder, and more disagreeable than usual, till much rain had fallen about the middle of *April;* the remainder of which month was mostly fair and temperate.

The first fortnight of *May* was likewise fair and temperate; the latter part of it dry and warm, without any rain.

June was clear, calm, dry, and sultry, as this and the two following months are constantly observed to be; the weather varying much less in these than in the other months. Rainy day, 9.

In *July* the northerly winds were higher and more frequent than ordinary, insomuch, that on some days the cold was more troublesome than the heat; nor do I ever remember to have felt so little heat in this month in Minorca.

Rainy days, 6, at night · · · · with thunder and lightning, 17, p. m.

Coldest day, 8.	Therm. 70.	Height at a
Hottest days, 21, 22, 31.	80.	med. $76\frac{19}{31}$.

During the first days of *August* the northerly winds continued; but the rest of the month was

either calm, or the breezes came from the south, the air being very hot and sultry.

Rainy days, 2, a. m. 14, a. m.

Coldest days, 3, 4.	Therm. 73.	Height at a
Hottest days, 27, 28, 29, 30.	80.	med. $77\frac{2}{31}$.

In *September* the weather is always very unequal; fair intervals, and short violent storms reciprocally succeeding each other: but this year the anniversary rains were not so constantly attended with northerly winds as they commonly are.

Rainy days, 7, a. m. · · · · with thunder and lightning, and at night · · · · 11, at night, · · · · 15, at night, · · · · 18, at night, · · · · 19, at night, · · · · 22, at night, · · · · with lightning, 23, at night, · · · · with lightning.

Coldest days, 17, 26.	Therm. 71.	Height at a
Hottest days, 1, 2, 3,	76.	med. $73\frac{2}{30}$.

In the first part of *October* the winds were mostly from the north or northwest, the weather variable and unsettled: but from the 14th to the end of the month it was calm, warm, and fair.

Rainy days, 2, at night, 4, at night, · · 5, at night, · · 13, a. m. and p. m. · · · ·

Coldest day, 14.	Therm. 65.	Height at a
Hottest days, 1, 2.	71.	med. $68\frac{5}{28}$.

November was remarkable for bad weather. All the first day, and the second before noon, it blew violently from the north, with heavy rain: from the 7th to the 22d the weather was constantly cold, cloudy, and stormy, with hail, rain, and high winds,

from the north. After a few fair days this month ended stormy, as it began.

Coldest day,	Therm. 50.	Height at a med. 56.
Hottest day, 1.	67.	

From the first of *December* to the 13th the air was cold, but for the most part clear; the wind north or northwest. But at that time shifting suddenly to northeast, a violent storm began, and continued with great fury to the 17th, more especially in the nights, with hail, rain, and flakes of snow. On the 18th the weather again cleared up; but on the 21st it became cold, stormy, and rainy; and, excepting one fair day or two, it continued so to the end of the month.

Coldest days, 14, 15.	Therm. 44.	Height at a
Hottest days, 26, 31.	57.	med. 51½.

A. D. MDCCXLV.

This year began with strong piercing northerly winds; nor did the coldness of the air decrease much before the latter end of *January*, though the weather was mostly calm and clear with sunshine.

Rainy days, 6, at night, · · with hail, 13, at night, · · 15, at night, · · 26, at night, · · · ·

Coldest day, 6.	Therm. 43.	Height at a
Hottest days, 26 to 31.	57.	med. 52.

The first week of *February* was pleasant and serene; the remainder was mostly cold, cloudy, and overcast.

Rainy days, 8, p. m. · · · 11, at night, · · · 15, · · 21, · · · 24, a. m. · · · 25, 28, · ·

Coldest day, 26.	Therm. 46.	Height at a
Hottest days, 7, 8.	61.	med. 55.

Except the first day, which was windy, contrary to custom, *March* was warm, calm, and dry, without any storms, the winds being mostly from the south or west.

Rainy days, 22, a. m. 23, · ·

Coldest day, 1.	Therm. 51.	Height at a
Hottest day, 12.	63.	med. 59.

April was likewise warm and temperate, but somewhat more windy and rainy than the preceding month.

Rainy days, 3, 8, 23, · · · 27, 28

Coldest day, 17.	Therm. 58	Height at a
Hottest days, 25, 26.	65.	med. $61\frac{24}{30}$.

On the 19th the therm. in the shade 62, exposed to the sun 80.

The heat of the weather increased greatly in *May*, notwithstanding some unseasonable rains, and northerly winds, about the end of the month.

Rainy days, 1, 7, 8, · · 16, · · 23, at night, · · · · 24, p. m. · · · · 25.

Coldest days, 1, 2.	Therm. 62.	Height at a
Hottest day, 17.	74.	med. $68\frac{8}{31}$.

On the 4th the therm. in the shade 65, exposed to the sun 88.

The beginning of *June* was likewise unseasonable, with rains and northerly winds. The rest of the month was calm, dry, and hot, as usual.

Rainy days, 4, a. m. · · · · and at noon, · · · · 7, at night, · · · ·

Coldest days, 4 to 7.	Therm. 69.	Height at a
Hottest day, 28.	82.	med. $73\frac{1}{2}$.

On the 28th the therm. in the shade 82, exposed to the sun 98.

July was a little more temperate than usual, the heat of the air being frequently allayed by breezes or showers.

Rainy days, 16, a. m. · · · 17, a. m. · · · · and p. m. · · · · and at night, · · · · with thunder, 27, p. m. · · 29, at night, · · · · with lightning.

Coldest days, 21, 22.	Therm. 75.	Height at a
Hottest days, 6, 25, 26.	80.	med. $77\frac{12}{31}$.

On the 7th the therm. in the shade 79, exposed to the sun 100. 25th therm. in the shade 80, exposed to the sun 96.

August, except the first three days, was excessive hot and sultry, till the latter end, when the air was refreshed by brisk northerly breezes.

Rainy days, none.

Coldest days, 1, 23 to 27.	Therm. 74.	Height at a
Hottest day, 9.	82.	med. $77\frac{25}{31}$.

On the 9th the therm. in the shade 82, exposed to the sun 95.

The beginning of *September* was very sultry, though not always serene. But from the 12th to the end it was constantly either cloudy, rainy, or stormy with violent squalls from the north.

Rainy days, 12, at night, · · · · 13, at night, · · · 14, at night, with thunder, 16, p. m. · · · · and at night, · · · · with thunder, 17, p. m. · · · · 18, a. m. · · · and at night, · · · · with thunder and lightning, 19, a. m. · · · · and at night, · · · · 20, · · 27, · · · · at night, with thunder and lightning, 28, · · 30, at night, with lightning.

Much lightning in the nights of the 20th, 21st, and 22d.

Coldest day, 19. Th.	69.	Height at a med. $75\frac{12}{30}$.
Hottest day, 9.	80.	

On the 24th the therm. in the shade 73, exposed to the sun 89.

The weather during *October* was fair, pleasant, and serene, except the rainy days, and some few others, the winds being mostly moderate and northerly.

Rainy days, 1, a. m. 3, a. m. · · · · 7, at night, · · · · with thunder and lightning, 8, a. m. · · · · 17, at night, with lightning, 25, 26, at night, · · · 27, a. m. · · ·

Coldest days, 29, 30.	Therm. 61.	Height at a
Hottest days, 1, 2.	69.	med. $65\frac{20}{31}$.

Almost all *November* was either cloudy or wet. From the beginning to the 24th the wind was mostly from the south, or southwest. Afterwards it changed to the north, and the air continued cold and damp to the end of the month.

Rainy days, 2, 5, 7, at night, · · · 10, a. m. · · · and p. m. · · and at night, · · · 11, at night, · · 14, 15, at night, · · · with hail, 21, a. m. · · 26, · · · 27, · · 30, · ·

Coldest day, 27. Th. 50. } Height at a med. $58\frac{6}{30}$.
Hottest day, 8. 65. }

The first week of *December* was wet and cold, with high easterly and northerly winds. The remainder was somewhat more temperate and calm, the winds being, for the most part, southwest or southerly.

Rainy days, 1, · · · 2, · · · 5, at night, · · · 7, p. m. · · 12, · · 18, · · 20, p. m. · · and at night, · · 21, · ·

Coldest days, 5, 6, 9. Therm. 48. } Height at a med. $53\frac{19}{31}$.
Hottest day, 27. 60. }

A. D. MDCCXLVI.

The greatest part of *January* was fair and clear, with cold easterly winds.

Rainy days, 6, · · · 10, · · 11, a. m. · · 23, 31, · · · with hail.

Coldest days, 7, 12. Therm. 48. } Height at a med. $52\frac{23}{31}$.
Hottest day, 28. 57. }

During *February* the weather resembled that of the preceding month, though somewhat colder, and more windy.

Rainy days, 3, · · 6, a. m. · · · 7, a. m. · · 23, a. m. · · 28, · ·

Coldest days, 2, 3, 15. Therm. 45. } Height at a med. $51\frac{16}{28}$.
Hottest day, 20. 57. }

On the first of *March* there was a remarkable storm from the north, with flakes of snow in the evening. Next morning the fields were covered with

snow a foot deep, which melted away soon after sunrising. But some more fell the following night, and continued upon the ground for three days ere it melted; which is so extraordinary a phenomenon in this part of the world, that it had never before happened above once or twice in the memory of man. From the 5th day the cold gradually decreased to the 15th, and afterwards, to the end of the month, we had fine moderate weather.

Rainy days, 13, 14, · · 28, a. m. · · · 30, a. m. · · 31, · ·

Coldest days, 3, 4.	Therm. 42.	Height at a
Hottest days, 24, 27, 30, 31.	60.	med. 54 $\frac{5}{31}$.

In *April* the weather was exceedingly changeable, and often rainy or overcast.

Rainy days, 3, at night, · · · · 4, a. m. · · · · 20, p. m. · · · · 11, · · · with hail, 13, · · · · with a storm of wind, 14, 17, at night, · · · · 18, a. m. · · 23, · ·

Coldest day, 13.	Therm. 54.	Height at a
Hottest day, 30.	68.	med. 59$\frac{22}{30}$.

On the 3d th. in the shade 57, exposed to the sun 83.
29th 65, 88.

May was calm, serene, and seasonable, seldom obscured with clouds or rain, until it drew near the end.

Rainy days, 9, 21, 24, a. m. · · 29, 30, p. m. · · · · with thunder and lightning, and at night, · · · · with thunder and lightning.

Coldest day, 11.	Therm. 64.	Height at a
Hottest days, 4, 5, 18, 20.	70.	med. 68$\frac{3}{31}$.

June, as usual, was dry, sultry, and serene.
Rainy day, 15th.

Coldest day, 11.	Therm. 69.	Height at a
Hottest days, 26, 27.	79.	med. $73\frac{12}{30}$.

The heat gradually increased from the end of June to the 20th of *July*, being very troublesome and uneasy, even to those who never exposed themselves to the sun. But during the latter part of the month, it was mitigated by daily breezes.

Rainy days, 28, a. m. 29, a. m. and at night, · · · · 30, a. m. · · · · with thunder and lightning.

Coldest days, 8, 29, 30.	Therm. 77.	Height at a
Hottest day, 19.	87.	med $80\frac{25}{31}$.

August was more temperate than the preceding month, the heat being somewhat allayed by the northerly winds.

Rainy days, 1, a. m. 19, a. m. 27, p. m. · · · · with thunder and lightning, 31, at night, · · · · with thunder and lightning.

Coldest day, 29.	Therm. 70.	Height at a
Hottest day, 15.	81.	med. $76\frac{15}{31}$.

September began with storms of wind and rain; from the 4th to the 14th it was clear and warm; from which to the end of the month the sky was constantly either darkened with heavy rains, or was tempestuous with strong northerly winds; the weather being much colder than usual at that season of the year.

Rainy days, 2, p. m. · · · · with thunder and lightning, 3, a. m. · · · · with thunder and lightning,

and hailstones of an inch diameter, 15, a. m. · · · · 16, a. m. · · and at night, · · · · 17, · · · · with thunder and lightning, 18, · · 19, · · 20, at noon, · · · and at night, · · · · 22, p. m. · · 23, at night, · · · · 24, · · and at night, · · · 26, and at night, · · · · 28, at noon, · · · ·

Coldest days, 22, 26.	Therm. 58.	Height at a
Hottest day, 13.	74.	med. $67\frac{7}{30}$.

The first and last week of *October* were mostly pleasant and serene: the two intermediate weeks were rainy and overcast; and the whole month was uncommonly cold, with northerly winds.

Rainy days, 8, p. m. and at night, · · · · 9, at night, · · · 10, · · · at night, · · · · 14, p. m. · · 18, 20, p. m. · · · · 21, · · · · with thunder and lightning, 22, p. m. · · · · and at night, · · · · 30, a. m. · · · · with hail.

Coldest days, 8, 9.	Therm. 54.	Height at a
Hottest day, 1.	68.	med. $58\frac{21}{31}$.

During *November* the weather was calm and seasonable, with much sunshine on the days free from rain.

Rainy days, 1, at night, · · 2, · · · and at night, · · · · 3, at night, · · · · 4, · · · 5, · · 12, at night, · · · 14, · · 17, a. m. · · 19, a. m. · · 26, p. m. · · · ·

Coldest day, 20.	Therm. 54.	Height at a
Hottest days, 28, 29.	62.	med. $57\frac{17}{30}$.

In *December* there was no extraordinary cold weather, and very seldom high winds; nor was the serenity of the sky much interrupted by clouds or rain.

Rainy days, 14, • • • 15, • • 29, at night, • • • 30, • • 31, • • • and at night, • • • •

Coldest days, 11 to 15.	Therm. 54.	Height at a
Hottest day,	59.	med. 56.

A. D. MDCCXLVII.

The weather of *January* was like that of the preceding month, but somewhat more wet and cold in the beginning.

Rainy days, 1, a. m. • • • 2, p. m. • • and at night, • • • 4, at night, • • 12, • • 14, • •

Coldest day, 5.	Therm. 50.	Height at a
Hottest days, 20, 28.	59.	med. $55\frac{4}{31}$.

During the first fortnight of *February* we had warm, fair, summerlike weather: the third week was rainy and tempestuous, with some hail and snow; the fourth very changeable, the sunshine being often interrupted by showers.

Rainy days, 16, p. m. • • • and at night, • • • • 17, a. m. • • and p. m. • • with hail and snow, 19, at night, • • • 21, • • 24, at night, • • 25, 27, 28.

Coldest day, 18.	Therm. 50.	Height at a
Hottest days, 5, 10.	62.	med. $55\frac{20}{28}$.

On the 4th the therm. in the shade 61, exposed to the sun 78.

From the beginning of *March* to the 21st the weather was cold, and often wet; the winds mostly from the north, and sometimes very boisterous: the remainder of the month was fair and moderate, with westerly or southwest winds.

Rainy days, 1, 2, • • • 3, • • • and at night, • • • 9,

p. m. 14, a. m. • • 17, at night, • • • 19, a. m. • • 20, a. m. • • • with hail.

Coldest days, 6, 13 to 17.	Therm. 50.	Height at a
Hottest day, 30.	63.	med. $54\frac{17}{31}$.

April was fair and dry, but sometimes very windy; in the fore part of the month especially; and the wind being then at north did great damage to the fields and vineyards. About the middle and to the end the southeast prevailed.

Rainy days, 9, at night, • • • 10, at night, • •

Coldest days, 2, 3.	Therm. 56.	Height at a
Hottest days, 27 to 30.	68.	med. $61\frac{22}{30}$.

Betwixt the 1st and the 9th of *May* the weather was often disagreeable, with rain, clouds, or much wind. But almost all the rest of the month was clear, calm, and warm.

Rainy days, 1, 6, p. m. • • • 7, p. m. • • • • with thunder and lightning, 8, at noon, • • • 28, p. m. with thunder and lightning, 29, a. m. • •

Coldest days, 1, 7 to 10.	Therm. 67.	Height at a
Hottest day, 31.	75.	med. 71.

On the 4th the therm. in the shade 70, exposed to the sun 88.

June was hot and dry as usual. On the 27th of the month dark clouds suddenly rose from the north, a little before sunset, and a storm of wind succeeded, which lasted all that night.

Rainy day, 23, a. m.

Coldest day, 23.	Therm. 71.	Height at a med. 76.
Hottest days, 26, 27.	80.	

On the 24th the therm. in the shade 71, exposed to the sun 94.

During *July* hot suffocating winds with unwholesome vapours, from the south and east, were predominant.

Rainy days, 6, a. m. · · · 7, a. m. · · · 18, at night, · · · · 26, p. m. · · ·

Coldest day, 8.	Therm. 73.	Height at a med. $79\frac{7}{31}$.
Hottest day, 21.	84.	

On the 12th the therm. in the shade 80, exposed to the sun 99. On the 21st the therm. in the shade 84, exposed to the sun 100.

The beginning of *August* was intolerably hot; nor was the rest much more temperate, though it rained plentifully about the middle and end of it, the winds being most commonly from the east and southeast.

Rainy days, 9, p. m. 12, at night, · · · · with thunder and lightning, 15, at night, · · · · with thunder and lightning, 16, p. m. · · · · with thunder and lightning, 28, at night, · · · · 29, a. m. with thunder and lightning, 30, a. m. · · · and much lightning at night.

Coldest day, 30.	Therm. 74.	Height at a med. $80\frac{4}{31}$.
Hottest days, 8, 10, 11.	84.	

On the 8th the therm. in the shade 84, exposed to the sun 100. On the 15th the therm. in the shade 79, exposed to the sun 98.

The slight showers which fell first in *September*, rather increased than allayed the warmth of the air: but the storms of wind and rain about the middle of the month put an end to the hot weather for that season.

Rainy days, 8, 11, a. m. 13, p. m. and at night, · · · · 14, · · · · and at night, · · · · 18, at night, · · · with thunder and lightning, 19, · · · and at night, · · · · 20, · · · 21, at noon, · · · with hail, 23, p. m. and at night, · · · 24, a. m. · · · and at night, · · · · 25, · · 28, p. m. · · · and at night, · · · · with thunder and lightning, 29, · · · and at night, · · · · 30, a. m. · · · ·

Coldest day, 21.	Therm. 63.	Height at a med. $72\frac{22}{30}$.
Hottest day, 10.	81.	

On the 1st, the th. in the shade	79, exposed to the sun	98.
2d,	80,	100.
10th,	81,	98.

Except a shower or two, and a storm of wind from the northeast on the 21st, *October* was entirely calm and serene.

Rainy days, 4, p. m. · · and at night, · · 17, p. m. · · 19, p. m. · · 21.

Coldest days, 19, 25, 27, 28.	Therm. 62.	Height at a med. $65\frac{21}{31}$.
Hottest days, 10, 11, 12, 14.	70.	

On the 2d, the th. in the shade	67, exposed to the sun	90.
9th,	69,	86.
23d,	64,	83.
26th,	63,	88.

Nor was *November* less serene, though sometimes more windy, especially at the close of the month, when it blew violently from the north.

Rainy day, a. m. · · · with hail.

Coldest day, 27.	Therm. 51.	Height at a med. $60\frac{2}{30}$.
Hottest day, 2.	67.	

On the 16th, the th. in the shade	59, exposed to the sun	84.
22d,	62,	82.
27th,	51,	74.
28th,	54,	78.

From the 1st to the 6th of *December* the wind blew strong from the southwest; as it did from the southeast from the 20th to the 24th: the other days of this month were mostly fair, calm, and agreeable. The whole of the month was uncommonly warm for the season, except the last day, when the wind changed to the north.

Rainy days, 8, a. m. · · · and at night, · · 9, 12, 14, · · with thunder and lightning, and at night, · · 17, · · 24, a. m. · · · · 25, p. m. · · · 28, p. m. · ·

Coldest day, 31. Therm. 53. } Height at a med. $58\frac{19}{31}$.
Hottest days, 3, 5. 64. }

On the 5th the th. in the shade 64, exposed to the sun 88.
6th, 63, 84.

A. D. MDCCXLVIII.

The sharp northerly wind, which began on the last of *December*, was attended with some hail and snow on the 4th, and continued to the 6th of *January*. It then shifted to the northwest, and though the weather was mostly fair and dry, yet the air continued cold till the rains fell, near the end of the month.

Rainy days, 2, a. m. · · and p. m. · · 5, a. m. · · · 6, at night, · · 15, at noon, · · 18, at night, · · 22, at night, · · · 23, and at night, · · · 25, p. m. · ·

Coldest day, 4. Therm. 43. } Height at a med. $51\frac{15}{31}$.
Hottest day, 22. 57. }

On the 8th the th. in the shade 44, exposed to the sun 64.
18th, 50, 68.

The weather continued mild and temperate to the 17th of *February*, though the rains that fell in the second week were accompanied with high southerly

and southeast winds: afterwards, to the end of the month, we had dry, cold, north and northwest winds, which did much mischief to the corn.

Rainy days, 6, at night, 8, 9, · · 10, a. m. · · and p. m. · · · 11, a. m. · · · 13, a. m. 15, at night, 16, · · and at night, · · 18, p. m. 25, at night, · · · with hail, 26, p. m. · · and at night, · ·

Coldest day, 21.	Therm. 48.	Height at a med. 55.
Hottest days, 6, 8.	60.	

On the 1st the th. in the shade	56,	exposed to the sun 76.
19th,	52,	78.
24th,	54,	80.

In the beginning of *March* the weather was windy, but not very cold: between the 10th and 23d we had violent storms of wind, rain, and hail, with fair intervals. The end of the month was remarkably pleasant and serene.

Rainy days, 7, p. m. with a little hail, 10, a. m. 11, at night, · · · 12, a. m. · · and p. m. · · with hail and snow, and at night, · · 13, at night, 14, p. m. 16, p. m. and at night, · · · with thunder and lightning, and snow, 17, · · · 18, · · · and at night, · · 19, p. m. · · · and at night, · · · · 20, p. m. 21, 30, p. m.

Coldest days, 19, 21.	Therm. 50.	Height at a med. $55\frac{9}{31}$.
Hottest days, 27, 29, 30.	63.	

On the 14th the th. in the shade	51,	exposed the sun 76.
27th,	63,	82.

April was cold and stormy from the 14th to the 20th; all the rest of the month was calm, clear, and warm, except the 25th, when it rained, and blew fresh from the northwest.

Rainy days, 6, at night, 14, p. m. · · · with thun-

der, 15, at night, · · · · 16, p. m. · · · with thunder and lightning, and at night, · · · with thunder and lightning, 19, 24, at night, · · · 25, · · 30.

Coldest day, 16.	Therm. 55.	Height at a
Hottest days, 24, 28, 29, 30.	65.	med. $61\frac{15}{30}$.

May was clear, calm, and warm, excepting the 15th and 16th days, when it blew violently from the north.

Rainy days, 20, p. m. 21, p. m.

Coldest day, 16.	Therm. 61.	Height at a
Hottest days, 25, 30, 31.	72.	med. $68\frac{7}{31}$.

About the middle of *June* the northeast winds blowing fresh for some days, allayed the heat of the air, but did great damage to the fruit trees.

Rainy day, 26, at noon, · · · ·

Coldest day, 18.	Therm. 71.	Height at a
Hottest days, 12, 13.	80.	med. $75\frac{28}{30}$.

The first weeks of *July* were extremely hot and sultry, especially from the 6th to the 16th; the mercury in the thermometer rising daily above the 80th degree. Nor was the latter part of it much more temperate, though it blew from the north pretty briskly on the 17th and 18th, and moderately about the end of the month.

Rainy days, 2, a. m. 16, at night, 17th, at night, 18, at noon, · · · · 31, at night, · · · with thunder and lightning.

Coldest day, 18.	Therm. 74.	Height at a
Hottest days, 14, 15, 16.	84.	med. $71\frac{5}{31}$.

On the 5th, the th. in the shade	79,	exposed to the sun 96.
7th,	81,	100.
23d,	81,	98.

The excessive heat of the season continued to the 19th of *August;* when it intermitted for some days, the clouds threatening rain, with boisterous winds from the north, especially in the night time. On the 24th it again became sultry, and continued so to the end of the month.

Rainy days, 3, a. m. 7, at night, 19, a. m. with thunder and lightning, and at night, · · · ·

Coldest days,	Therm. 74.	Height at a
Hottest day, 15.	85.	med. $79\frac{4}{31}$.

On the 9th, the th. in the shade	77, exposed to the sun	95.
10th,	79,	96.
14th,	84,	101.
15th,	85,	100.

In *September*, though the sky was often overcast, with signs of rain, yet the showers were neither so heavy nor so frequent as they commonly are about this time of the year: but large dews falling in the nights, and constant breezes from the north, rendered the air temperate, as it commonly is in this month.

Rainy days, 8, at night, 9, at night, with thunder and lightning, 17, at night, 18, at night, 23, at noon, · · · · and at night, · · · · 24, a. m. · ·

Coldest day, 25.	Therm. 66.	Height at a
Hottest days, 7, 8.	80.	med. $73\frac{12}{30}$.

On the 22d the therm. in the shade 73, exposed to the sun 96.

The first ten days in *October* were mostly fair, clear, and calm, and also the last week of the month: all the intermediate days were either wet, or windy and overcast.

Rainy days, 1, at noon, · · 9, p. m. 10, p. m. · ·

and at night, · · · · 11, · · · · 12, at night, · · · · 14, · · · 15, · · 19, 20, at night, · · · · 21, at night, · · 22, 23, at noon, · · · · 27, at noon, · · · ·

Coldest days, 12, 13.	Therm. 58.	Height at a
Hottest day, 7.	72.	med. $65\frac{11}{31}$.

Towards the beginning and end of *November* the weather was temperate and serene. During the middle part of the month it was frequently cloudy and cold with dry north winds.

Rainy days, 8, at noon, · · · · with thunder and lightning, and at night, · · · · 11, a. m. 20, · · · · 22, 26, · · · ·

Coldest day, 23.	Therm. 53.	Height at a
Hottest days, 1, 2, 3.	66.	med. 58 $\frac{3}{30}$.

In *December* the wind was either southerly or westerly: hence the weather was never cold; and though some days were foggy, yet by much the greater part of this month was dry, clear, and very pleasant.

Rainy days, 14, · · · at night, 21.

Coldest days, 9 to 17.	Therm. 56.	Height at a
Hottest days, 27 to 31.	60.	med. $57\frac{13}{31}$.

A. D. MDCCXLIX.

So mild was the weather in *January* that it scarce seemed to be winter. The preceding autumn having been uncommonly dry, and the showers which fell during the first three months of this year being neither frequent nor plentiful, the grain in many places perished for want of rain.

Rainy days, 4, a. m. 7, at noon, and at night, · · · 18, p. m. 19, at night, 20, at noon.

Coldest days, 6, 7.	Therm. 53.	Height at a
Hottest days, 1, 2, 16, 17,	58.	med. $55\frac{3}{31}$.

February was likewise mild and temperate, the mercury in the thermometer fluctuating between the 54th and 57th degree: a little rain fell on the first days, a heavy shower on the 12th, slighter showers on the 22d and 23d; during the rest of this month the air was clear and dry.

March was fair, warm, and without rain, both towards the beginning and end; the thermometer standing above the 60th degree. Between the 9th and 22d day, frequent storms of rain, with some hail, intervened, which sunk the mercury to the fifty second degree.

The weather during almost all *April* was mild, clear, and agreeable.

Rainy days, 7, a. m. · · · and p. m. · · · · 10, p. m. · · · and at night, · · ·

Coldest days, 8, 9.	Therm. 56.	Height at a
Hottest day, 30.	69.	med. $62\frac{23}{30}$.

In *May* sudden heavy rains sometimes interrupted the serenity of the weather; and at the close of the month a strong westerly wind did much damage to the vineyards. The harvest this year was so poor and scanty (especially in the northern parts of the island, where the droughts were most excessive), that they scarcely reaped as much grain as they had sowed.

Rainy days, 3, p. m. · · · · 11, at noon, · · · · 12, at noon, · · · 16, 19, 25, at night, · · · 31, at night, · · · with thunder and lightning.

Coldest day, 4.	Therm. 64.	Height at a
Hottest days, 24, 25.	73.	med. $68\frac{1}{2}$.

During the month of *June* the air was dry and excessively hot, though somewhat more temperate between the 14th and the 25th; frequent gales coming from the north.

Rainy day, 15, p. m.

Coldest day, 1.	Therm. 69.	Height at a
Hottest day, 30.	79.	med. $74\frac{6}{30}$.

On the 29th the therm. in the shade 76, exposed to the sun 96.

The weather has seldom been felt so extremely hot and sultry as this year in *July;* the quicksilver rising daily above the 80th degree of the thermometer, and never falling below the 79th, even in the night time, till the rains which fell in the latter part of the month had cooled the air.

Rainy days, 25, at noon, • • • 26, p. m. • • • •

Coldest days, 26, 27.	Therm. 77.	Height at a
Hottest day, 20.	86.	med. $82\frac{6}{31}$.

On the 3d the th. in the shade	82,	exposed to the sun 102.
4th,	84,	100.
13th,	84,	104.
14th,	85,	104.

In the beginning of *August* a general relief of all his majesty's troops in the island obliged me to embark for Ireland, and put an end to these observations.

A TABLE showing the greatest, least, and mean height of the mercury at three o'clock in the afternoon, in each month, from the year 1744 to 1749.

		1744	1745	1746	1747	1748	1749
January	G		57	57	59	57	58
	L		43	48	50	43	53
	M		52	$52\frac{23}{31}$	$55\frac{4}{31}$	$51\frac{15}{31}$	$55\frac{3}{31}$
February	G		61	57	62	60	57
	L		46	45	45	48	54
	M		55	$51\frac{16}{28}$	$55\frac{20}{28}$	55	
March	G		63	60	63	63	64
	L		51	42	50	50	52
	M		59	$54\frac{5}{31}$	$54\frac{17}{31}$	$55\frac{9}{31}$	
April	G		65	68	68	65	69
	L		58	54	56	55	56
	M		$61\frac{24}{30}$	$59\frac{22}{30}$	$61\frac{22}{30}$	$61\frac{15}{30}$	$62\frac{23}{30}$
May	G		74	70	75	72	73
	L		62	64	67	61	64
	M		$68\frac{8}{31}$	$68\frac{3}{31}$	71	$68\frac{7}{31}$	$68\frac{1}{2}$
June	G		82	79	80	80	79
	L		69	69	71	71	69
	M		$73\frac{1}{2}$	$73\frac{12}{30}$	76	$75\frac{28}{30}$	$74\frac{6}{30}$
July	G	80	80	87	84	84	86
	L	70	75	77	73	74	77
	M	$76\frac{19}{31}$	$77\frac{12}{31}$	$80\frac{25}{31}$	$79\frac{7}{31}$	$79\frac{5}{31}$	$82\frac{6}{31}$
August	G	80	82	81	84	85	
	L	73	74	70	74	74	
	M	$77\frac{2}{31}$	$77\frac{25}{31}$	$76\frac{15}{31}$	$80\frac{4}{31}$	$79\frac{4}{31}$	
September	G	76	80	74	81	80	
	L	71	69	58	63	66	
	M	$73\frac{2}{30}$	$74\frac{12}{30}$	$67\frac{7}{30}$	$72\frac{22}{30}$	$73\frac{21}{30}$	
October	G	71	69	68	70	72	
	L	65	61	54	62	58	
	M	$68\frac{5}{31}$	$65\frac{20}{31}$	$58\frac{21}{31}$	$65\frac{21}{31}$	$65\frac{21}{31}$	
November	G	67	65	62	67	66	
	L	50	50	54	51	53	
	M	56	$58\frac{6}{30}$	$57\frac{17}{30}$	$60\frac{12}{30}$	$58\frac{3}{30}$	
December	G	57	60	59	64	60	
	L	44	48	54	53	56	
	M	$51\frac{1}{2}$	$53\frac{11}{30}$	56	$68\frac{10}{31}$	$57\frac{13}{31}$	

CHAPTER II.

Of the Rise, Progress, Declension, and Succession of the Epidemical Diseases, from the year 1744 *to* 1749.

A. D. MDCCXLIV.

IN the beginning of the year few diseases appeared, except some pleurisies and tertian fevers; both which are common in Minorca, and are frequently met with in all seasons; the first being generally the chief amongst vernal epidemics, as the other is constantly amongst the autumnal.

During the cold weather in March many adults were affected with catarrhs, and almost all the children were seized with a smart fever, attended by a cough; which disorders did not cease till the beginning of summer.

As the summer and autumnal weather of one year never varies much from that of another, so the same tribes of distempers return regularly with the seasons, and succeed each other in the following order.

Toward the end of June the young children (who constantly suffer first by excessive heat or cold) are attacked with a vomiting, purging, and periodical fever, often of the erratic kind, without any fixed type. (*a*)

(*a*) This disease among children appears to be what has received in the United States the name of the cholera infantum. The author mentions it again in two other places. It is briefly described in a late publication on the diseases of India, by Mr. Custis, surgeon of the Medea frigate. Our author's account of

In the following month tertian fevers of various forms appear among people of all ages, and spreading from one to another, by contagion, continue to increase daily till about the time of the autumnal equinox, when they rage with the utmost fury amongst persons of all ranks and constitutions, whether natives or foreigners. Afterwards they gradually decline; and as soon as the winter begins, their contagion being rendered inactive by the cold, few persons who have hitherto escaped are infected. Yet some primary fevers continue to January, and relapses are exceedingly frequent in the latter months of the year. (*b*)

About the time when the tertians begin, the cholera morbus, rash, and essere, become frequent and epidemical in a less degree: but are seldom met with after September, whilst the tertians continue till winter.

it accords with the same disease in our country, in making its appearance sooner than the bilious fevers (of which it is a form) in adults.

(*b*) Our author has followed the physicians of the continent of Europe in supposing tertian or bilious fevers to be contagious. They spread only from the action of an impure atmosphere, and never extend beyond its influence. If a whole family succumb under it, after it has affected one of them, it must be ascribed to the same air, and to the fatigue or distress of nursing the person first attacked, affecting the rest of the family. The extinction of this fever by cold, which our author mentions, proves it to be an atmospherical disease, for cold cannot penetrate houses to destroy the contagion. On the contrary, the shutting of doors and windows which follows the action of the cold, ought rather to accumulate and increase it. The small pox, which is a contagious disease, is not checked by cold weather.

Diarrhœas, dysenteries, and tenesmus, likewise make their appearance as epidemicks, in summer and autumn: but some years they occur so seldom, as scarce to deserve that name; whilst in others they are almost as numerous as the tertians themselves.

There seems likewise to be a near alliance amongst all the diseases above mentioned. Those who have the rash, or essere, to a great degree, are very liable to tertian fevers; on the other hand, in the paroxysms of tertians these cutaneous eruptions are apt to break out. The cholera morbus sometimes hath its regular periods, like a tertian, as the paroxysms of tertians are frequently attended with a cholera. Sometimes a tertian is changed into a dysentery; or a dysentery becomes a tertian; and when one of these diseases is suppressed, the other often ensues; nor is it uncommon for dysenteric fevers to put on the form of tertians; and for the fits of tertians to be regularly accompanied by gripes and stools. (*c*)

It is remarkable that both dysenteries and tertians, without any manifest cause, are sometimes more universal and severe in one part of the island in one year than another; and often seem, as it were, to attack particular families with uncommon severity; whilst others in the same place, the same circumstances and way of life, escape. Those, however, who live in low valleys, or near stagnating corrupted waters, are commonly the greatest sufferers.

To me it appears probable that all the summer and autumnal diseases are the consequence of nature's

(*c*) We see in the whole of this paragraph a striking proof of the unity of the autumnal disease, however diversified it may be in its seats or symptoms.

attempting to free the body from noxious humours, either by throwing them upon the skin, or by conveying them through the liver and other organs of secretion, which open into the intestines. (*d*) And if, with the ancients, we allow distempered bile to be the cause of tertian fevers, it will perhaps be easier to account for their more obvious appearances, than by supposing them to arise from a lentor in the smaller arteries, according to the modern theory: but this is transiently offered as a conjecture; to record facts without framing any hypothesis, being my principal design.

In July 1744 tertian fevers were numerous; but during the two ensuing months they were neither so universal nor so malignant as they commonly are at this time of the year: yet obstinate relapses were frequently met with till January.

A little before the equinox dysenteries of a bad kind began to appear; and being propagated by contagion, (*e*) like the tertian fevers, they soon increased to such a degree, that it was doubtful which of the two distempers was more universal. This year, in the space of three months, I had more patients with bloody fluxes, than in all the former part of my life; and as no manifest quality in the air, nor variation in the weather, seemed capable of producing them, it is probable that their uncommon frequency and singular severity were chiefly owing to the sour da-

(*d*) It would have been more appropriate to modern pathology, had our author said, the miasmata inhaled during the autumnal season.

(*e*) The same objections apply to the contagiousness of the dysentery, which apply to tertian and bilious fevers formerly mentioned.

maged wine, which, for the sake of gain, was at that time sold in the island by those whose duty it was to have prevented such abuses. But be this as it will, it is certain that incredible havoc was made by those distempers among the lower sort of the natives, as well as among the soldiers and sailors of his majesty's fleet, which was then in the harbour. The most part of those who were attacked died about the winter solstice or sooner; the rest continued weak, lean, and pale, like so many shadows, during the winter and spring; nor did any method which we could suggest, entirely protect them from the torments of those painful distempers, until the heat of the summer, by increasing perspiration, had diminished the tendency of the humours to the intestines.

In December some were cut off by the pleurisy; and many, worn out with age, intemperance, or frequent sickness, died about the end of this month and the beginning of January.

A. D. MDCCXLV.

About the end of January a manifest alteration to the better was perceptible among the sick. Those who had been reduced to the last extremity, by repeated relapses of tertians, were now restored to their former health; and such as were ill of fluxes, and had been despaired of, began to show signs of recovery: nor did any new distemper, except a few pleurisies, appear during the spring.

Towards the end of May, and beginning of June, heavy rains having occasioned a sudden change in the air from heat to cold, some were attacked with a

looseness, gripes, and cholic pains; and others with an angina.

June was scarcely ended, when the tertian fevers and cholera morbus began; and increasing daily according to custom, came to their greatest degree of frequency in September; from which time they gradually declined, and seldom appeared after the winter solstice. Those distempers, it was observed, were this year often attended with fixed pains of the side, and sometimes with a spitting of blood. (*f*)

In July and August a slight jaundice, without a fever, which soon yielded to purgatives, and saponaceous medicines, was a common distemper.

In September dysenteries broke out, and continued to the winter: but they were neither so numerous nor so malignant as in the preceding year.

As the dysenteries and tertian fevers disappeared, the pleurisy, which had been fatal to a few in the autumn, became more frequent; and towards the close of the year, it raged more violently than I had ever known, at least among the English inhabitants of the islands.

A. D. MDCCXLVI.

I come now to a year remarkable for dreadful distempers and much mortality. For the pleurisy above mentioned continued to make great destruction till April, at which time it began to abate; and

(*f*) These secondary pectoral affections often attend the autumnal fevers in the southern states They yield to purging, from which circumstance it has been erroneously inferred that a pleurisy may be cured exclusively by that remedy.

vanished entirely about the summer solstice. Together with the pleurisy, two other diseases equally fatal, the *phrenitis* and *paraphrenitis*, were also epidemical: and so likewise was an erysipelatous fever. A few had large tumours of the parotids; and others had inflammations of the throat. But those diseases were peculiar to adults. Amongst the children obstinate, and often fatal chincoughs, became frequent in March, and continued till summer: some were suddenly suffocated by an angina, without any apparent swelling: and to complete the measure of evils, the island was this year visited with the small-pox, and of the most pestilential kind.

The chincough had no sooner disappeared than a periodical fever, accompanied with vomiting and purging, took its place, which proved alike fatal to many children during the summer.

In July the tertian fevers broke out as usual, and their violence being augmented by the excessive heat of the season, many persons died suddenly about the seventh day of the distemper: but the cold weather of September prevented their becoming so general and continuing so long as they commonly do; for about the end of October they gave way to catarrhs and quartan agues.

A. D. MDCCXLVII.

The first part of this year, though not very unhealthy, produced some few intermittents, together with inflammatory and catarrhal fevers. And the extraordinary heat of May ushered in the summer diseases somewhat sooner than usual. For about the

end of that month the cholera morbus carried off many children, and in June the tertians became universal. Besides, towards the end of June, the diarrhœa, dysentery, and tenesmus broke out and raged violently for some weeks: but contrary to expectation, they continued only a short time, and after the beginning of September could scarcely be reckoned epidemical.

In the meanwhile, as the dysenteries decreased, the number of tertians was multiplied, and being of a malignant kind, great mortality ensued, especially in the southern parts of the island. General WYNYARD's regiment, which was quartered in Mahon, was so severely handled by these fevers, that between June and November forty one men died; and the most part of those who survived continued weak, sickly, and illcoloured till the spring.

In October a few complained of coughs, and sore throats: and the latter end of the year produced pleurisies, which (as it commonly happens) did not affect the English so much as the Spaniards.

A. D. MDCCXLVIII.

Pleurisies were exceedingly mortal in the beginning of the year, and carried off divers in the spring.

In March many erysipelatous phlegmons were observed to break out on the extremities, which generally terminated in abscesses.

Towards the beginning of April some complained of sore throats and rheumatic pains. And about the 10th day of the month there appeared suddenly a catarrhal fever, which for three weeks raged so uni-

versally, that almost every body in the island was seized with it. This disease exactly resembled that which was so epidemical in the year 1733. (Med. Essays, vol. ii. art. 2.) For in most part of the sick the feverish symptoms went off with a plentiful sweat in two or three days; while the cough and expectoration continued some time longer. In a few athletic persons, who were not blooded in time, it terminated in a fatal pleurisy or phrensy. (*g*) In one or two the vessels on the coats of the intestines burst, and the patients expired after voiding an incredible quantity of blood by the anus.

The ensuing summer proved very unhealthy to the children, many of them dying of the cholera morbus, and periodical fevers; whilst others were much affected with cutaneous eruptions of different sorts.

The tertians began in July, and finished their annual career about the end of November. Many persons died suddenly during the dog days, and about the equinox.

In the meantime dysenteries prevailed in Ciudadella among the lower sort of the natives, whose bread was made of damaged wheat, without affecting the soldiers and others in the same town, who lived on better provisions.

From the end of November to the middle of January pleurisies were predominant in all parts of the island; and large critical abscesses, together with various kinds of cutaneous eruptions, were more frequent both among the English and Spaniards than had ever been observed.

(*g*) This disease appears to be the influenza, of late years so well known in the United States.

A. D. MDCCXLIX.

That part of this year, during which I resided in Minorca, was remarkable for dry weather and few distempers. However, in March pleurisies and catarrhal fevers now and then appeared; in April some had anginas with aphthæ in the mouth, and spontaneous salivations; others complained of pains in the ears, and eruptions on the face. In June and July there were some specimens of the summer's diseases, but so few that they scarcely deserve to be called epidemical.

CHAPTER III.

OF TERTIAN FEVERS.

HAVING described the state of the weather, and the succession of the epidemical diseases, I come now to treat particularly of each, beginning with tertian fevers, which are, by much, the most frequent of all.

These fevers never proceed uniformly, with constant uninterrupted violence from their first beginning to their final termination; but, sooner or later, have periodical intervals, more or less evident, so that the patient is by turns one day better and another worse. They are called tertians, or fevers of the tertian kind, because each particular period or revolution of the disease (which the Romans expressed by the word circuitus) is completed in the space of about forty eight hours; and a new attack is begun on the alternate days, or every third day, if we include the day on which the genuine paroxysms happen, together with the intermediate one, according to the common method of reckoning, used by physicians.

The fevers belonging to this tribe assume so many, and such various shapes, that, though they are essentially the same, yet their appearance is often very different; insomuch that when I reflect on the several species which I have seen, I almost despair

of being able to give the reader any tolerable idea of them. Nevertheless, as it is of such importance to be acquainted with the specific properties of each, that without an exact knowledge of them, we can neither foretel the return of the fits or intervals, nor consequently administer food or medicines at the most convenient hours; I flatter myself that it will not be thought unnecessary to dwell a little on this subject, and endeavour to describe the particular types and forms, in which the various kinds of tertians appear, especially as no author who has fallen into my hands, is sufficiently clear and accurate on this head. For those distempers are slightly passed over by most of the moderns; and although the Greeks and Arabians had treated of them at great length, yet in their voluminous writings we do not find them described as they really are, but as they would be, if Galen's theory of the four humours was well grounded; their distinctions being deduced from different mixtures of bile and pituita, which they assign as the cause of tertians; and having once laid it down as an axiom, that each species arises from a particular humour, which must produce such and such effects, they ascribe symptoms to the fever, from a preconceived hypothesis, which seldom or never accompany it in reality. (Vid. Simon Simon. apud Sennert. tom. ii. lib. ii. c. xvii.)

Wherefore, in order to avoid the like mistakes, I shall leave the reader to form what idea of the causes of those fevers he thinks fit, and endeavour to show as distinctly as I can, first, the differences which arise amongst them from the different types or forms of their periods; secondly, the distinctions occasion-

ed by the most obvious symptoms of their paroxysms; and, thirdly, I shall describe the various appearance of the more frequent epidemical tertians in their rise, progress, and termination, with as much exactness as their own irregular anomalous disposition will permit.

But it may not be improper, in the first place, to apprize the reader, that I have used the appellations commonly given to the various fevers of this class, in a manner somewhat different from several who have written upon this subject, though not without explaining as clearly as I could in what sense I would be understood: and indeed whoever consults those writers will find that some of them so limited their definitions as to make it doubtful if ever any disease existed to which the name was applicable; whilst others apply their terms in so loose and vague a signification, as to include several species, which ought to be distinguished, in order to understand their history and cure.* It may likewise be necessary to inform those who are not much conversant with the Hippocratical writings, that by the *odd days* are meant the 1st, 3d, 5th, 7th, &c.; by the *even days* the 2d, 4th, 6th, 8th, &c.; and that however singular such a distinction may appear in a country where no

* For instance, if we look into several of the Galenical writers, we shall find that, in order to constitute the tertiana pura or exquisita, and some kinds of the semitertiana, a number of different circumstances is required, which seldom or never occur in the same patient. On the other hand, Spigelius, who wrote a particular treatise De Semitertiana, has extended the meaning of that denomination so far, that it includes almost every species of the tertian tribe.

such uniform diversity is observable, yet it will be found next to impossible to give a tolerable idea of the diseases in that climate without the assistance of this distinction.

In this treatise tertian fevers are called *simple*, when there is but one fit and one interval during each period of the distemper. When the paroxysms do not exceed twelve hours, they are called *true tertians;* when they continue longer, they are called *spurious*. In the *true* simple tertian the fit, for the most part, comes on in the middle of the day, and goes off the same evening. In the *spurious* simple tertian it comes on much earlier, and often lasts above eighteen hours.

They are called *double* tertians, when there are two fits and two intervals within the time of each period. But commonly there is some difference between the two fits, either in respect to the hour at which they come, the time of their duration, or the nature and violence of their concomitant symptoms; whilst at the same time the third paroxysm of the disease resembles the first, the fourth agrees with the second, the fifth with the third, and so on.

Some double tertians begin in this manner: on the evening of Monday, for example, a slight fit comes on, and goes off early next morning: but on Tuesday, towards the middle of the day, a more severe paroxysm begins, and continues till night. Then there is an interval to Wednesday evening, when a slight fit commences a new period of the fever, which proceeds in the same manner as the first; so that (according to the way in which physicians calculate the days of diseases, by beginning to reckon from

the first hour of their invasion) both paroxysms happen on the odd days, while the greater part of the even days is calm and undisturbed.

But in most double tertians the patient has a fit every day of the disease; the severe one commonly appearing at noon on the odd days, the slight one towards evening on the even days; though sometimes the worse of the two fits happens on the even days. (*h*)

Double tertians, if their fits do not exceed twelve hours, are named *true;* if they are somewhat more protracted, they are called *spurious;* and if the fits are so far protracted, that one is scarce ended when another begins, they are called *subintrant.*

There is a tertian fever sometimes to be met with, during each period of which there are three different fits, and as many intervals. For example, towards Monday noon the patient is seized with a paroxysm, which declines about five or six o'clock the same evening: a few hours after another fit begins, and continues until morning; from which time there is an interval to Tuesday evening, when a third fit comes on, and lasts most part of the night. On Wednesday there are again two paroxysms, as on Monday, and one on Thursday like that of Tuesday; and thus the fever goes on, with a double fit on each of the odd days, and a single fit on the even days.

This uncommon kind of tertian is the true semitertian of Hoffman* and some others: but I shall call it a *triple tertian*, to distinguish it from another

(*h*) It is always a bad sign when the worst fit of an autumnal fever occurs on an even day.

* Med. Rat. tom. iv. § i. c. v.

very common fever, which proceeds in the following manner.

A fit begins on Monday noon, for example, and goes off the same night. On Tuesday afternoon a second fit comes on, and gradually increases till Wednesday night, when it terminates. On Thursday morning there is such another interval as happened on Tuesday morning: but on Thursday afternoon another long fit, like the preceding, commences, and returning regularly every other day, leaves only a short interval of ten or twelve hours during the eight and forty. This fever I shall call, with Celsus* and Agathinus,† a semitertian.

But the various kinds of tertians hitherto mentioned differ among themselves, according as their periodical intervals are more or less tranquil and free from disturbance. When there is a complete apyrexy, or entire vacation of fever between the fits, they are called intermittents; when the apyrexies are more imperfect and obscure, remittents; and continual tertians, when the paroxysms and their intervals are less perceptible, though the violence of the symptoms is somewhat abated on the alternate days. In double tertians that interval is the most considerable which follows the severe fit; for the slight fit oftener ends in a remission than intermission, and frequently lingers till the other approaches: hence it is that the night preceding the vehement fit is much more restless than that which comes after it, as has been observed by Hippocrates. (Morb. Vulg. l. vi. § 2.)

* Cel. lib. ii. c. iii.

† Apud Galen de Febr. Different. lib. ii. c. ii.

These are the differences of tertian fevers, which proceed from the types of their periods. But in some, each period is completed in a few hours less than eight and forty; in others, in a few hours more: the former are therefore called anticipating, the latter postponing tertians. In double tertians the vehement fit often comes on a little earlier in each period, while the slight fit returns at the same hour, or perhaps later and later every other day: so that the motions of one have no influence on those of the other; whence it appears, that each of these fits hath its own proper independent cause.

With regard to the types of the periods, and the time of their duration, this may be sufficient. I come now to the differences of tertian fevers formed by the symptoms attending their paroxysms.

Many authors (and Hoffman in particular*) have carefully enumerated the phenomena of the fits in regular distinct tertians, according to the order in which they succeed: but so far are the paroxysms of the epidemical fevers, which are the subject of our discourse, from having constantly one and the same appearance, that no two distempers can differ more than they often seem to do from one another. In both simple and double tertians, as well as semitertians, they often begin with a slight shivering; sometimes without any sense of cold; and frequently while the patient complains of cold his skin is actually warmer than in a natural state. In some a most intense degree of heat is brought on; in others it is moderate. In a few they terminate by stool or

* Med. Rat. tom. iv. § i. c. ii.

urine rather than by sweat: sometimes they are so complicated with fixed pains of the head, breast, belly, back, or limbs, as to personate with great exactness, a phrensy, pleurisy, hepatitis lumbago, or rheumatism; especially if the apyrexies are obscure or imperfect. Sometimes one or two symptoms of the fit predominate with such violence, that the rest are obscured or altogether eclipsed. Hence we so frequently meet with hemicranias, choleras, dysenteries, and chincoughs, returning regularly at stated periods. And several fevers of this class, upon account of some predominant symptom, have had particular names bestowed upon them. For example, when the cold, which ushers in the fits, continues longer than ordinary, and is so very intense that the surface of the body is chilled, whilst a burning heat is felt in the bowels, the fever is called lipyria. When the anxiety and dejection of mind, which commonly happens in the first stage of the paroxysm, is so far augmented as to degenerate into an absolute fainting, the disease is termed febris syncopalis. When exquisite pain and burning heat in the bowels render the patient restless, and incapable of continuing many moments in the same posture, assodes is the name appropriated to the fever. And it is called elodes, when the skin is constantly covered with sweat; either from the viscera being inflamed, or from a general dissolution of the blood.* For although in the course of these malignant fevers it

* Atque hoc in totum de sudoribus animadvertere oportet, quod nonnulli quidem ex corporis dissolutione, quidem ex inflammationis vehementia contingant.

Hippocrat. Prænot. lib.

often happens that you can neither distinguish paroxysms nor intervals, yet it is evident that they belong to the tertian tribe, since, for the most part, in their beginning the periods are sufficiently distinct; and as soon as that violence of the symptoms which occasioned the confusion in the height of the distemper abates, they again become more regular, and assume either their former or analogous types.*

Whoever rightly comprehends what I have already said on tertian fevers, will easily see that it would be endless to reckon up the different species into which they might be divided, and to ascribe particular names to each. Yet there is another circumstance which renders this subject still more perplexing. For such is the variable disposition of these diseases, that they often change from one appearance to another, and seldom retain the same form from their beginning to their termination; each period sometimes assuming a new type; and every paroxysm being attended with different symptoms. This led me at first to apprehend that they were confused, anomalous, and altogether without order: but after being for some time acquainted with them, I began to discover their regularity; and the longer I was conversant among the sick, the more I was surprised at the constancy of nature in the production and progress of tertian fevers; their periods being perfectly similar in the Spaniards and in the English;

* Febris syncopalis minuta subtilis, est febris acuta faciens cadere pulsum et virtutem in paroxysmo uno aut duobus paroxysmis, cum additione dissolutionis accidente in corpore cum velocitate. Plures paroxysmi hujus febris sunt paroxysmi tertianæ.
Avicen. de Feb. c. liii.

and sometimes not very different in him who lies upon the bare ground, destitute of assistance, and those who are treated in the most judicious methods, under every advantage of fortune: and frequently neither the patient's intemperance, nor unskilful management, can alter their stated course, and prevent their terminating in recovery. (*i*) So much are those mistaken, who imagine that the bent of nature in acute diseases can be altered or controlled by every trifling accident or insignificant prescription.

Most of these fevers make their first appearance in the shape of a true simple, or double intermittent tertian. The cold fit seldom lasts above an hour or two; and as it goes off some bilious matter is commonly discharged by vomit or stool. Then follows an intense heat over the whole body, which raises the mercury in the thermometer to the 103d or 104th degree: and lastly, a profuse sweat puts an end to the paroxysm. The apyrexy is tolerably complete, though for the most part the patient complains of a disagreeable taste, loss of appetite, headach, and pain in the small of his back, and pit of his stomach upon a full inspiration. The pulse during the intermission is almost natural: in the fits it varies according to their predominant symptoms. When they are attended by acute pains in the præcordia, it be-

(*i*) After the complete formation of an autumnal fever, the ordinary course of which is five, seven, and nine days, it is seldom cured by the *ordinary* remedies employed for that purpose. All that medicine does in this case is to keep the system afloat, and thus to prevent death. The sameness of the issue of this fever under all the different circumstances that have been mentioned, shows the strength of the remote cause, in predominating over national habits, and variety of predisposition.

comes small and obscure, so as to indicate greater weakness than there really is: on the other hand, when drowsy lethargic symptoms come on, it often resembles that of a person in full health, though the sick is in the utmost danger. The urine, whether made in the time of the paroxysm or interval, is always clear, frothy, and of a deep red colour, without any separation. Blood drawn from a vein is most commonly florid like scarlet, without any sizy crust: the serum is sometimes tinged with yellow, but oftener red like the lotura carnium, and in great quantity. Sometimes the serum and crassamentum remain united in a lax gelatinous mass.

As the fever advances to its height, the coldness and shivering which usher in the paroxysms become less, or intirely imperceptible; in which case a cholera morbus, or acute pains in the back or limbs, often supply their place: frequently the shiverings are intermixed with flushings of heat. In the mean time, the paroxysms themselves become longer, and bring on more formidable symptoms; such as headachs, raving, sopors, apoplectic fits, bleeding at the nose, cough, difficulty of breathing, palpitation of the heart, irregularity of the pulse, sickness and anxiety, pain about the upper orifice of the stomach, vomiting and purging, heat, tension, pain and pulsation in the abdominal viscera, subsultus tendinum, and an infinite variety of other complaints, which do not entirely cease with the sweat that carries off the paroxysm; so that the apyrexy is not only shortened, but rendered more obscure.

Besides, it often happens, during the second, third, fourth, or fifth period, that the tertian be-

comes double, though at first it was simple: or if it was double from the beginning, the weaker fit continues, without any intermission, till the stronger comes on, and both being blended together, the disease puts on the appearance of a semitertian, having one very long fit, with a short interval every forty-eight hours. Sometimes a double tertian degenerates into a triple tertian, two fits instead of one happening on the odd days.

It must likewise be observed, that, in the progress of the fever, the regular order of the periods is frequently disturbed, by the paroxysms changing their hour of invasion, and attacking unawares without any previous cold. Nor are anticipating fits always a bad sign, or those which postpone a good one, as some authors insinuate; on the contrary, the first frequently show the strength of nature, as the others do her weakness.

After this manner these proteiform distempers continue to vary their shape in every period, and to produce longer, more severe, or more frequent paroxysms, till they arrive at their height; about which time the fits and intervals are often so confused, that they are scarcely to be distinguished: nevertheless, if death be not speedily the consequence of this confusion, they commonly again put on a more simple or regular form, and, after one or more slight paroxysms, go away of their own accord.

Those fevers which come to their height in the third period, terminate in the fourth or fifth period; those which come to their height in the fourth period, terminate in the fifth or sixth; and those which come to their height in the fifth period, terminate in

the sixth or seventh. When the most vehement paroxysms happen on the odd days, the crises will be on the odd days: when they happen on the even days, the great changes of the distemper will likewise be on the even days. (*j*)

If the fever increases to the seventh period, it probably will not cease before the ninth: but it rarely happens that intermitting or remitting tertians run out to so great a length. Yet I have seen every year a few of the continual kind, which began with great mildness, and increasing by slow degrees, broke out violently in the third or fourth week, and soon after ended in intermittents; though some of them have continued without any considerable interval for six or seven weeks. Hippocrates* has accurately described such continual tertians, and tells us that they are apt to terminate in dysenteries, lienteries, and tenesmus, which we find in fact to be too often the case.

(*j*) This remark has been confirmed by universal experience.

* The other fevers were altogether of the continual kind without any intermissions; and the paroxysms in all like the semitertians, one day better, another worse. And of all the fevers that then reigned, these were the most vehement, tedious, and painful; beginning very mildly, but increasing always, growing worse and worse on the critical days. After a little abatement they soon grew bad again, had stronger fits on the critical days, and for the most part worse: shiverings were universally irregular and uncertain, seldom and very little in these, but more in other fevers: sweats were common, but here least of all; and so far from easing the patient, that, on the contrary, they did him harm. The belly in all was disturbed, and in a bad manner, but worst of all by much in these, &c. &c.

Clifton's Hippocrat. p. 57, 58.

But it is much more common to meet with tertians, which set out furiously, with severe subintrant double paroxysms; so that for some days they have little or no interval. On the third or fifth day a profuse sweat commonly brings on an intermission; and afterwards the disease assumes the type of a double intermitting tertian, or of a semitertian. Such fevers I have frequently observed to terminate spontaneously on the seventh, ninth, and eleventh days; and, for the most part, they are less to be feared than those which begin deceitfully in the shape of a slight double or simple tertian. For however mild and insignificant these intermittents may at first seem to be, we are never to trust appearances, till they have performed three or four revolutions. Then indeed, if the paroxysms are not attended with acute pains in the viscera, and do not last above twelve hours; if they decline with plentiful warm sweats, and leave the intervals tolerably free; if the patient bears the distemper well, and begins to have an appetite for victuals; if small pustules break out in the inside of the mouth, or scabs about the lips;* if the urine has recovered its natural complexion, or is cloudy and turbid, or lets fall a white or a pale red sediment; I say, if all these signs concur about the third or fourth period, we may safely prognosticate a speedy recovery.

On the other hand, it denounces danger, when,

* It is to be observed, that these are only to be looked upon as a good sign when they come in the declension of the disease, attended with other signs of concoction; for if they break out in the beginning, they prognosticate a dangerous or a tedious illness.

about this time of the disease, the paroxysms are long and protracted; or are accompanied with an obstinate delirium, an intense coma, great anxiety, and pain in the loins, or about the upper orifice of the stomach; when the patient has an utter aversion to food, and even in the intervals is so feeble, and attended with such a swimming in the head, that he can scarcely walk about; when the hypochondria and epigastric region are swelled, hard, and painful to the touch; when numerous blotches, like the stinging of nettles, frequently break out on the skin; when the urine continues thin, clear, high coloured, or covered with an ashcoloured membrane like a cobweb; and lastly, it denounces danger, when larger evacuations come on than the strength can well bear, such as vomiting, purging, bleeding of the nose, colliquative sweats, or the like. For fevers with these appearances sometimes are immediately changed into mortal dysenteries; sometimes they become continual tertians, and run out to a great length; but, for the most part, they preserve the form of remitting or intermitting* fevers, and daily grow-

* In this and some other parts of this treatise it is inculcated, that the danger in tertian fevers is rather to be estimated from the symptoms of the paroxysms, than the length and serenity of the intermissions: on which subject, as Franciscus Torti has expressed himself with great clearness, I shall here add a few remarks, from his Therapeutice Specialis, a valuable work, which I never had the good fortune to meet with till very lately. He tells us that periodical fevers, and principally double or simple tertians, become malignant, either when they degenerate into continual acute fevers, or when they still retain their intermissions, but are accompanied with one or other of the following symptoms; which commonly proves fatal in the second or third fit, after its appearing in the formidable manner which

ing stronger, prove very dangerous about the sixth or seventh period; and though the patient may escape, after a great struggle, by means of some critical discharge, such as purging, sweating, parotids, or abscesses near the hip; yet his constitution is commonly so shattered, that he long continues ex-

he describes. 1. A vomiting or looseness, like a cholera morbus, or dysentery. 2. A looseness which often resembles the fluxus hepaticus, and sometimes a purging of atrabilis. 3. A cardialgia. 4. Cold sweats. 5. A syncope. 6. A constant coldness, neither succeeded by heat nor sweat. 7. A lethargic disposition, little different from an apoplexy. Hence he makes so many different species of malignant intermittents, and names them from the predominant symptoms of the fit. 1. Febris cholerica seu dysenterica. 2. Subcruenta seu atrabilaris. 3. Cardiaca. 4. Diaphoretica. 5. Syncopalis. 6. Algida. 7. Lethargica. He describes, with great accuracy, the manner in which each species occasions death; and takes notice, that in the six species first mentioned, the pulse is constantly small, feeble, and greatly depressed; whereas in the seventh it is rather full, strong, and slow (as in an apoplexy), than weak and quick. This, which he calls the lethargica, is extremely common in Minorca; the cardiaca and cholerica are likewise frequent; and all the rest are now and then to be met with, except perhaps the subcruenta, which I never took notice of. Our author likewise remarks, that it is not unusual for some of the above mentioned symptoms to attend continual periodical fevers, though seldom in so great a degree of violence as in the intermittents. And he observes, that intermittent quartans rarely kill in the fit, as the tertians do, but often prove fatal by becoming continual fevers. The whole work deserves to be carefully perused, but particularly the first chapter of the third book, from which the above remarks are collected, with a view to raise, rather than to gratify the reader's curiosity. (*k*)

(*k*) The yellow fever appeared in Philadelphia in all the forms which have been so happily enumerated by Dr. Torti in the above note extracted from his works by the author.

posed to irregular paroxysms, night sweats, fluxes, obstructions of the chylopoetic viscera, and every kind of chronic distemper.

Those fevers are most to be dreaded, whose violence is greatest on the even days; and if the paroxysm stops on the third, fifth, or seventh day, but continues on the fourth, sixth, or eight day, we must be upon our guard, lest a sudden storm should succeed this treacherous intermission.*

But the utmost danger is to be apprehended, if a few drops of blood fall from the nose; if black matter, like the grounds of coffee, is discharged upwards or downwards; if the urine is of a dark hue and a strong offensive smell; if the whole skin is tinged with a deep yellow, or any where discoloured with livid spots or suffusions;† if a cadaverous smell is

* I inserted this caution, having seen a few double tertians change into simple tertians, by the fits intermitting on the odd day, and nevertheless prove fatal soon afterwards; a case which I had not found so much as hinted at in any author except Hippocrates, who tells us in the *Prænot. Coac. Quibus tertio die subsistit accessio et quarto ingravescit malum.* Yet from the following passage in Torti I imagine that experienced physician must have met with accidents of the same kind. *Suspecta itaque ab exordio erit, ne in continuam degeneret, intermittens, quæ cum pauco aut nullo rigore solet invadere, sed potius cum sensu caloris. Item quæ primo die leviusculam (dum modo tamen vere febrilem) infert accessionem; altero vero die (non altera periodo) fortiorem, et sic progrediendo modum servat graviorem per dies pares, loquendo per modum exempli, de tertiana duplici ab ortu. Quod si eadem sic orta in simplicem statim mutetur, etsi hoc laudabile sit, tamen non desinit esse suspectum, si primam accessionem validam, debilis, ut supra, immediate præcessit: potest enim facile ille typus mutari qui ordine inverso potuit incipere.* *Therap. Special. l. iii. c.* .

† The English in Minorca are more liable than the natives to become yellow in these fevers.

perceptible about the patient's bed; if in the time of the fit he continues cold and chilly, without being able to recover heat; or if he becomes extremely hot, speechless, and stupid; has frequent sighs, groans, or hiccoughs; and lies constantly on his back, with a ghastly countenance, his eyes half shut, his mouth open, his belly swelled to an enormous size, with an obstinate costiveness, or an involuntary discharge of the excrements: which formidable symptoms, as they seldom appear before the third revolution of the disease, so they frequently come on, both in double and simple intermittents, during the fourth, fifth or sixth period, even where the smallest danger was not foreseen. But at whatever time the greater part of them concurs, they afford a melancholy prognostic; for notwithstanding they sometimes go entirely off with the paroxysm, and the patient seems to be left in a fair way of recovery, yet most commonly they return in the next period with double violence, and terminate in sudden death. Agreeably to this Hippocrates tells us, " In the summer, intermittent fevers and the cholera morbus prevail; and as they sometimes degenerate into malignant acute diseases, we should be upon our guard; the fifth, seventh, and ninth days point out the danger; but we must be cautious to the fourteenth." (De Morb. Popular. l. vii.) For the fifth day, if the bad symptoms just now mentioned, appear on it, will indicate death on the seventh. In the same manner the seventh will indicate the ninth, and the ninth the eleventh to be fatal, provided the paroxysms are aggravated on the odd days; for if they are most vehement on the even days, one of these days will

prove indicatory as well as critical. Hence we find Galen* lays down as a general rule, that those who grow remarkably worse on the fourth day, die on the sixth; and with equal justice he might have said the same thing of the sixth day, with regard to the eighth, and of the eighth, with respect to the tenth.

Nor is there only a possibility, in many cases, of foretelling the day, but likewise the hour on which the patient will expire; for that stage of the paroxysm, which he usually got over with most difficulty, will most probably in the end prove fatal, as Galen has also remarked. (De Crisib. l. iii. c. x.) I have seen some expire in what may be called the first stage of the paroxysm; the skin being chilled and wet with cold sweats, their pulse small and irregular, and their senses entire to the very last. But the greatest numbers are hurried off in the height of the hot fit, stupified, senseless, the breathing short and laborious, and the skin covered with a burning fiery sweat.

In the meantime it is to be remembered, that as in all acute diseases, so particularly in those fraudulent deceitful fevers, the presages either of death or recovery are not always certain and infallible; it frequently happening that those who have laid in the paroxysm for hours together, with few or no signs of life, have at length recovered, as it were, from the jaws of death, and asked for some uncommon sort of food, to the great surprise of every body about them; on the other hand, the fit anticipating sometimes brings on death before the time it was indicated.

* Etenim qui in quarto ad pejorem statum recidunt, plerumque sexto moriuntur. *De Dieb. Decret.* l. i. cap. iv.

I have examined the bodies of near a hundred persons, who perished in those fevers, and constantly found one or other of the adipose parts in the lower belly, (the cawl, mesentery, colon, &c.) of a dark black complexion, or totally corrupted; the vesica fellea full and turgid, and the stomach and intestines overflowing with bilious matter; the spleen large, sometimes weighing four or five pounds, and so excessively soft and rotten, that it had more the appearance of congealed blood wrapt up in a membrane, than of an organical part. In the cavity of the head and breast nothing extraordinary was met with, excepting yellow serum, when the skin was tinged with the same colour.

Some observations relating to malignant tertians are handed down to us by Coelius Aurelianus, which, for the reader's information, I shall transcribe at the bottom of the page;* and whoever is acquaint-

* Hæc passio (nempe apprehensio sive oppressio) lethargiæ similis est. Hippocrates et Diocles αφωνιαν appellavit, Praxagoras Κωματωδην, Antigenes ανανδιαν, Asclepiades Catalepsin—Diocles ait (1) *defectivas febres* tutas et innoxias esse frequentius quam sunt continuæ, quamquam et in his periclitentur, qui in accessionibus apprehensi conticescunt, vel raptu quodam alterno per membra tentantur, cum supra dictis: quod sæpe, inquit, est accidens pueris. Item Praxagoras ait esse quasdam febres ex anno duodecimo usque ad annum XVI aut XVII, quæ, quadem privata pernicie, mortis habent effectum: atque id in servis magis quam liberis evenire, sed (2) *excesso dierum numero* passiones fiunt catochæ vehementes, ut etiam voce capiantur ægrotantes: horum aliquos etiam lethargicos fieri. Denique, inquit, quidem liberati, et deinde (3) *sanitatis creduli*, plurimum quicquam sumentes, repente in mortem venerunt.—Item Archigenes ait difficiles esse periodicos typos horum difficiliores esse

(1) Intermittentes. (2) Imparibus diebus. (3) Sani sibi visi.

ed with this author's style, will easily discover how nearly the preceding remarks agree with those of the old Greek and Roman physicians. In some circum-

tertianas, in quibus quotidianæ accessiones fiant, sed alternâ diei interpositione, (4) *suæ similitudini respondeant*, quando in accessione vehemens occurerit oppressio, et appellavit PITOS. Difficilis, inquit etiamsi quotidianis diebus accessiones sibi similes fiant, et in accessione ægrotantes supra dicta patiantur. Dehinc progrediens paululum idem dixit periodicos typos non esse perniciosos, sed horum esse molestos, quibus accessionis tempore (5) *pressuræ vehementes* eveniunt, et quodam (6) *nubilo* corpus demergitur, quod item Rhigos vocavit; sed hoc, inquit, est accidens magis tertianis, aliquando etiam quotidianis, quæ similibus respondeat accessionibus.—Apud Romam vero inquit Asclepiades frequentare advertimus (7) *has febres*, cum corporis atque mentis oppressione, in similitudine lethargiæ, quæ secundo vel tertio in statu accessionis constitutæ, statim recalefacto corpore, vel cessante vehementia, in resumptionem et resurrectionem mediocrem revocant ægrotantes. At si (8) *levi figmento* cessaverint, semel apprehenso ægro nullam resurrectionem dabunt, sed in sudores, et respirationem celerem, in pulsum febricitantem desinunt et occidunt.—Autumni tempore hæc passio magis irruit corporibus atque puerilibus frequenter ætatibus; item mulieribus humorosis, et vacuis corporibus, et edacibus hominibus.—Præterea omni febriculæ hæc passio irruere potest sive continuis sive demissionibus intercapedinatis, hæmitritaicis etiam febribus, vel quotidianis, vel tertianis, vel quartanis, frequentius tamen quotidianis accessionibus, vel tertianis, ægrotantes ista passione afficiuntur, et propterea, diuturnis accessionibus admoniti, tertianis similitudinem servant, ad typum quotidianum: sed omnium earum febrium gravius, quoties cum articulorum frigido torpore fuerit (9) *qualitas:* levius, quoties tremore ægrotantes afficiuntur: item magis et magis levius, quoties sine his quæ supra diximus, solo fervore febres initium accipiunt. *Afterwards, having accurately enumerated the*

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(4) Sibi similes sint.
(5) Profundus Somnus.
(6) Somno turbulento.
(7) Tertianas duplices.
(8) Non revera sed in specie tantum.
(9) Mos febris.

stances however there seems to be a difference; for according to them children are most liable to malignant tertians; whereas by what I have observed they were more frequent among adults and those of an advanced age. They likewise talk as if the fits were more to be dreaded when they come on with a numbness of the joints and tremblings; but the most formidable paroxysms which I have seen, broke out into a burning heat at the beginning, without any previous cold. (*l*)

From what has been said I flatter myself that young practitioners will be enabled, not only to distinguish tertians from all other fevers, but likewise to foresee the times of their paroxysms, and intervals, and to make a rational conjecture concerning their event. Before I proceed to the cure I shall only remark, that, although we find them appearing every year in the several forms and types described

signs of the distemper, our author proceeds to describe it in the last stage. Cum sudore sæpius plurimo atque ferventi et in demissione sinceritati propinquantes rursum admonentur. At si ad pejora passio fuerit devoluta, fervor plurimus corporis in superficie, magis sentitur respiratio, oculorum conversio, menti quoque fixa conductio, manuum contractus, et musculorum, qui buccas colligunt, tanquam ridentium, sudor igneus, et quibusdam in vultu et thorace emergentes discolores vel stantes in rotunditate (10) *maculæ*, in similitudinem (11) *scatebrarum corporis*, quas Græci Ιονθυς vocant, et e magnitudine repentinus virium casus, gutturis stridor, quem ronchum vocant, torpor frigidus, albidus vultus, et in ultimo (12) *effatio*, atque vitæ periculum.

Lib. ii. cap. x. De Morb. Acut.

(*l*) This remark accords with general experience. The longer the chill, the less the danger of the fever which succeeds it.

(10) Exanthemata. (11) Sudoris guttularum. (12) Suffocatio.

in the beginning of this chapter, yet the true simple and double tertian, and the semitertian, are by much the most frequent. In July, when they first break out, their type is commonly simple and regular; their paroxysms are of short duration; and after three, four, or five periods, they vanish of their own accord. So just is Hippocrates's observation, that true tertians generally end within five, seven, or at most, nine revolutions, notwithstanding what some of the moderns have alleged to the contrary. (Prænot. Coac.) As the season advances the tertians become more dangerous and difficult, often terminating in those malignant fevers, called syncopalis, lipyria, assodes, &c. especially if much rain, without wind, fall during the dogdays. About the time of the equinox they assume a surprising variety of forms, and very often counterfeit continual fevers, having long redoubled paroxysms. But as the winter draws near, their type becomes more simple, and though they prove tedious and obstinate in cold weather, yet they are more regular, and less dangerous than in the summer.

In the cure of tertians the symptoms of the paroxysms are more to be regarded than the types of the periods; for, *cæteris paribus*, simple, double, triple, intermittent, and remittent tertians, together with the semitertians, all require the same sort of treatment.

As soon as the fit comes on the patient should be put to bed, and covered with clothes in such a manner, that he may neither be suffocated with immoderate heat, nor the critical sweats be suppressed by the admission of too much cold. If it can conve-

niently be done, his bed should be placed in a large room, where he may breathe freely, in pure temperate air. In the summer it will be necessary to keep out the sun, and to refresh the air frequently by sprinkling the floor with vinegar and water, and opening the windows to the north; during winter, or the autumnal rains, the cold and moisture of the weather must be corrected by a fire.

While the cold fit continues, the patient should abstain from drinking. For at that time the vena cava and subclavian vein are so full and turgid, by the blood being driven from the surface of the body to the internal parts,* that the discharge of the thoracic duct is prevented: hence the liquor swallowed down remains in the alimentary tube, loads the bowels, and creates anxiety. And therefore if the patient is thirsty, he must endeavour to allay it in the best manner he can, by washing his mouth often, and eating slices of lemons sprinkled with sugar. In the meantime, if a nausea or inclination to vomit supervene, those salutary attempts of nature should be promoted by large draughts of warm water or weak broth, which commonly bring up a quantity of bilious matter, to the immediate relief of the sick.

When the first stage of the paroxysm is over, or (to use Hippocrates's phrase) *when the heat descends to the feet*,† liquids may then be given; but with such

* Sanguis presentem horrorem metuens, ad partes maxime calidas concurrit. Hip. lib. de Flat.

† Per totum morbum istud præcipue observari debet, ut cum frigidi pedes fuerint, tum a sorbitione exhibenda, tum maxime a potu abstineamus. Cum vero calor ad pedes descenderit, tunc dare convenit. Hip. de Vict. Rat. in Morb. Acut.

moderation, that the patient be neither allowed to take as much as he pleases, nor suffered to be tormented with thirst. As soon as the sweat breaks out, he may then be permitted to drink at pleasure.

The Spanish physicians deny them liquors altogether till the fit be at its height: they then give them in small quantity, always encouraging the sick with Celsus's remark, "*That the thirst will cease with the fit; which will continue longer if they drink.*" (Lib. ii. cap. vi.) On the other hand, our people run into the opposite extreme, by permitting the free use of liquids in every stage of the paroxysm. The first of these errors, especially in tertians which have long paroxysms, besides torturing the patient, augments the feverish heat, occasions a putrefaction of the animal juices, destroys the solids, and throws life itself into the utmost danger. By the contrary error the stomach is loaded, nature is diverted from expelling the critical sweat, and consequently the paroxysm is prolonged. (*m*)

The proper drinks on this occasion are those which allay heat, prevent putrefaction, dissolve the acrimonious particles of the blood, and convey them through the kidneys and pores of the skin; such as boiled water sweetened with sugar, and rendered agreeably acid with lemon juice, spirit of vitriol, or sliced apples infused in it; barley water mixed with

(*m*) Truth, as our author observes, lies in the middle of the two extremes of practice that have been mentioned. In the beginning of fevers of great morbid action, profuse drinking adds to the strength of the disease. It is less hurtful, and happily more necessary towards the close of fevers, after the long abstraction of aliment has disposed the fluids to a morbid acrimony.

simple oxymel; almond milk, and other emulsions; to all which nitre must be occasionally added.

It is a noted question among physicians, whether during the fit the drink should be warm or cold? The Spaniards generally give crude water, cold from the cistern; and we find by experience that this, if it be not hastily swallowed down in great quantities, is not only safe and innocent in summer fevers, but much preferable to warmer liquors, as it quenches thirst more effectually, strengthens at the same time the tone of the vessels relaxed and enervated by heat, and prevents the tendency of the blood to a putridinous thinness. Hence after each draught the body seems to acquire fresh vigour, whereby it is enabled to perform the concoction of the febrile matter, and discharge it by the proper emunctories.* And therefore they are greatly to be blamed, who refuse their patients so powerful and agreeable a remedy, in spite of the earnest call of nature, contrary to the advice of the best practitioners.† Nevertheless, as there is a manifest hazard of the blood being coagulated by the sudden application of intense cold, we must beware of giving ice water, as the Italians and Sicilians do, unless the patient has been accustomed to it when in health. And if the bowels are inflamed,

* In hac curatione observandum est, a spirit. sulph. gutt. xx. cum libra aquæ frigidæ exhibitis sudores copiosos fuisse provocatos, quod multis experimentis nobis innotescit, qui plures tertianas febres curatas vidimus, eodem remedio, in summo accessionis æstu, et urgente siti exhibito, unde copiosi sudores provocabantur, a quibus non solum paroxysmus, sed etiam totus morbus integre solvebatur. River. Obs. xix. Cent. i.

† Vid. Hoffm. t. iv. § i. c. i. & t. iii. § ii. c. xi.

the safest way is to give the drink lukewarm, or a very little colder. (*n*)

During the time of the critical sweats the patient's shirt and sheets should frequently be changed; for when once they are thoroughly wet, they do not readily absorb the sweat; and besides this, there is a chance lest the morbid exhalations should be absorbed from the wet linen by the cutaneous veins, and again conveyed into the mass of blood. (*o*)

When the fit is over, and the patient has got a little rest after his fatigue, it is needless, or rather hurtful, to confine him constantly to bed, as is the Spanish custom; yet he ought to keep within doors, or at least avoid being exposed to the sun, and all violent exercise; which is apt to bring on inflammations in the bowels, and turn an intermittent into a continual fever.

In the paroxysms no kind of food should be given, unless the fits are of an uncommon length, and the patient very weak. But every three or four hours during the intervals, a few spoonfuls of thin light

(*n*) The controversy between the advocates for warm and cold liquors in fevers can only be decided by attending to the *state* of the fever. When the excitement of the blood vessels runs high, or when it is reduced very low, cold liquors are certainly hurtful. They increase reaction in the former case, and they prevent it in the latter. In the intermediate states of the system they are useful. Liquors a little warmed, by standing in the air, allay thirst much more than such as are very cold. This has been confirmed by the experience of persons who work in the open air in hot weather, as well as by patients in fevers.

(*o*) The former of the two reasons given for changing the linen of patients after they are wetted with sweat, is a good one. The matter thus discharged from the pores is perhaps never conveyed into the body by cutaneous absorption.

nourishment will be necessary to support nature. The French and Spaniards use weak mutton or chicken broth in all fevers; which practice is justly condemned by Riverius, (Prax. Med. lib. xvii. c. i.) as panada and other vegetable dishes are not only more agreeable to the generality of the sick, but likewise better adapted to prevent the spontaneous tendency of the humours to an alcalescent state. (*p*) Nor can I think the summer fruits are improper upon this occasion, though they are forbid by most authors, who have in this respect blindly copied after Galen. Alexander Trallian* prescribes the free use

(*p*) The practice of the British physicians in abstracting animal broths from patients in fevers of *great* morbid excitement should be imitated by the physicians of the United States. In *low* chronic fevers, not only those broths, but animal food may be taken with safety and advantage.

* Pomaceos fructus, exquisitis tertianis liberaliter exhibere convenit, nempe uvam dulcem, Persica cocta, et non cocta, peponumque medullam; præsertim autem si etiam ægri siti vexentur. Ego sane novi me frequenter ægros, ne amplius accessione febris infestarentur, impedivisse, cum pepones probe refrigeratos, horâ ante incursum morbi, assumere jussissem, et rursus aquam temperatam copiosam, et quantam potuerint peponi superbibendam præcepissem. Secutus itaque est, non multo post aquam epotam, aliquibus sane sudor, aliis copiosa bilis per alvum. Offendi autem ego plerosque Romæ medicos, qui ne nomen quidem peponum tanquam bilem procreantium proferre audebant. Quum itaque ego cuidam aliquando, et sitienti vehementer et æstu flagranti defatigatoque injunxissem, ut peponem assumeret, quidam præsens medicus exclamavit, homo, cur ægrum magis vis occidere? Annon didicisti quod pepon bilem producat? Lege Galenum de alimentis, ubi dicat manifeste peponem comestum cholericos efficere. Laboravi igitur ego, non parum, ut iis persuaderem, qui intellectu assequi poterant, Galenum non dicere hic ipsos pepones bilem creare, sed choleram efficere. Proinde tertianâ febre detentis, cum fiducia dare debent. Quomodo enim ea, quæ refrigerant et humectant, bilem creare possint, non video. Lib. xii. c. vi.

of grapes and peaches in tertians, and boasts of the many cures which he had performed to the great surprise of his contemporaries, by giving water melons, and large draughts of cool water an hour before the fit. Avicenna recommends pomegranates and ripe plumbs, but above all the water melons.* And Galen himself, though he was unreasonably prejudiced against the summer fruits (a surfeit of which threw him into a fit of sickness when a boy), yet in the present case he allows the use of such of them as are not difficult to be digested. (Ad Glauc. l. i. c. ix.) And indeed in several other places of his works he is obliged to contradict his own opinion of their being unwholesome nourishment; particularly where he tells us, " that those who are set to watch the vineyards, and live for two months on grapes, figs, and bread, become fat and lusty." (De Alim. Facult. l. ii. c. ii. et ix.) Which observation is annually confirmed in Minorca, it being remarkable that the persons appointed for the same purpose there commonly continue in good health, though in that season tertians usually rage with the greatest violence. (*q*)

* In Opere Venet. de Febr. c. xxxviii. p. 31.

(*q*) The efficacy of a vegetable diet in preventing autumnal fevers will depend much upon their *grade*. Where they are attended with highly inflammatory or malignant symptoms, it is an almost certain preventive of them. The Bramins in India, who live wholly upon vegetables, enjoy good health in the neighbourhood of garrisons and factories of Europeans, who sicken and die from a predisposition to the fevers of the country, induced by a diet of animal food. Vegetable aliment induces a predisposition to fevers of weak morbid action. They are obviated by a cordial diet, and drinks.

Before I have done with the diet of the sick, it may be noted that, although in the beginning of those fevers they commonly loathe every thing, except thin, cooling, acescent liquors, yet after some days wine becomes less disagreeable, and towards the decline of the disease, a prudent use of it, mixed with water, or made into whey, is often absolutely necessary to keep up the failing strength, and prevent weakness, the worst of all distempers.

With regard to bleeding, it has been warmly debated among both ancient and modern authors, whether it ought or ought not to be used in tertian fevers. Much has been written on both sides; but the question appears to me too general to admit of a positive answer. Celsus has justly observed that "Medicines differ according to the nature of the climate; one kind being necessary in Rome, another in Egypt, and a third in France." (De Med. Præfat.) And since we daily meet with a remarkable diversity of symptoms among fevers of the tertian tribe, even in the same climate, at the same season of the year, it cannot surely be surprising that any one remedy is not equally beneficial in all cases, and at all times.

For my own part, when I was called early enough, in the beginning of those fevers I used to take away some blood from people of all ages, unless there was a strong contraindication; namely, from robust adults ten or twelve ounces; from others a smaller quantity in proportion to their strength and years. And farther, if a violent headach, and obstinate delirium, and great heat or pains of the bowels were urgent, within a day or two I repeated the bleeding. By which seasonable evacuation the vehemency of

the paroxysms is somewhat diminished; the apyrexies become more complete; the operation of emetics and cathartics is rendered safer and more successful; and the terrible symptoms, which often make their appearance about the height of the distemper, such as raving sopor, difficulty of breathing, inflammations of the abdominal viscera, &c. are either prevented or mitigated. (*r*)

But if before I was called the fever had already continued some time, and the mass of blood appeared to be too much melted down, or inclinable to a putrid dissolution, which is often the case, during the extreme hot weather, about the fourth period of the distemper, and is readily known by the great alteration of the patient's looks and his sudden loss of strength; or if the first paroxysms of the disease were attended with profuse evacuations, whether by vomiting, purging, sweating, or a hemorrhage from the nose: in all these circumstances I either omitted the bleeding entirely, or took away a very small quantity, though some importunate symptoms might seem to require a much larger evacuation.

But when bleeding is allowed to be necessary, it is asked at what particular time of the periodical revolution it ought to be performed? The ancients* believed that "to open a vein in the height of the fever, was to destroy the patient;" and therefore they order you to wait for the intermission, or the hour in which

(*r*) This practice is judicious, and is sanctioned by similar success attending it in the United States.

* Si vehemens febris urget, in ipso impetu ejus sanguinem mittere hominem jugulare est; expectanda ergo intermissio, &c. Cel. l. ii. c. x.

the symptoms are generally most moderate. But the experience of the present age has taught us that this operation is safe enough, at any time of the period, unless while the cold fit lasts, or is soon expected; or while the skin is covered with critical sweats. (*s*) Of late years, encouraged by the example of some practitioners of reputation,* I commonly opened a vein in the beginning of the hot fit; by which means the sick were immediately relieved; the immoderate heat of the body (which is often productive of fatal effects) was diminished; and the critical sweats were brought on sooner, and in greater abundance. But when that time of the paroxysm was passed before my being called, I bled in the evening, when it abated or went off, that I might be at liberty next day to make use of the remission or intermission, which commonly happens in the morning, to evacuate the first passages.

For, the disagreeable taste in the mouth, loathing of food, giddiness, pain in the forehead and loins, and other constant attendants of tertian fevers, make it evident, that the stomach and intestines are overloaded with noxious humours, and particularly with corrupted bile; from which if they be not early discharged, very threatening symptoms will be apt to ensue about this state of the disease; such as violent vomiting, redoubling or continuation of the paroxysms, ravings, restlessness, pain, inflammation, gan-

(*s*) Bleeding is certainly safe during that coldness of the body which takes place in violent fevers. It generally removes it, and Dr. Sydenham has taught us the safety and advantage of bleeding during the sweating stage of those fevers where the sweats do not afford relief.

* Astruc on Fevers, p. 71. Gourraigne de Febribus.

grene of the abdominal bowels, and lastly, sudden death. Wherefore it is not only necessary to wash the stomach with warm water or weak broth in the beginning of the fits, when indicated by an inclination to vomit, and to keep the belly constantly open with clysters; but likewise to empty the first passages by more powerful means at the first convenient interval.

It is a controverted point whether it is best to discharge those noxious humours by vomit or stool. At first view vomits seem to be most eligible, as they quickly empty the superior part of the alimentary tube, which appears to be the principal seat of the morbific matter. But it must be considered that whatever irritates much, and produces violent commotions, ought to be avoided in the present case. *Cave ne inducas effervescentiam biliosorum*, is a caution given by Avicenna; and the Spaniards no more than the Italians, if their physicians may be credited, cannot well bear rough medicines of any kind. (Vid. Bagliv. lib. i. c. xv. § v.) Besides, the inflammations of the bowels, too frequently accompanying tertians, are exasperated beyond expression by the strong contraction of the diaphragm and abdominal muscles in this operation: and if the spleen or liver is disposed to become putrid (which is no uncommon case in those fevers), it is needless to point out the dangerous consequences that may result from the repeated efforts of vomiting. For which reasons mild purgatives, though less powerful remedies, are the safest, and therefore to be preferred in the generality of cases. Those which I have found most beneficial are senna, manna, cremor tartari; but above

all the sal catharticum amarum, which neither gripes nor disturbs the body, and seldom fails of having the desired effect in a few hours, a circumstance of great moment where the intervals are short. But if vomits are to be used, they should be given in the beginning of the disease, before repeated paroxysms have brought on inflammations, or too much dissolved the texture of the blood; taking care that the operation does not interfere with the fit, lest some sudden mischief should arise from the united shock of the remedy and the disease. (*t*)

When I first became acquainted with those diseases, the uncommon violence of their symptoms induced me to lay the principal stress of the cure on evacuations; and to have recourse to frequent bleeding upon account of the inflammations of the viscera: endeavouring at the same time by repeated cathartics to discharge the corrupted humours from the intestines: but when experience had convinced me that the bark was both a safe and effectual remedy in those circumstances, I then plainly perceived that such profuse evacuations were unnecessary, if not prejudicial; and of late years, as I seldom omitted to bleed and purge once or twice, I rarely repeated either operation oftener.

In semitertians and remittents, which approach to the nature of continual fevers, I give a cathartic

(*t*) The remarks of our author upon the comparative effects of vomits and purges in these fevers are correct; nor do his objections to the former militate against the propriety of the practice of Dr. Sydenham, who gave them in the advanced stage of fevers, for it was in fevers in which there was no disposition to inflammation or congestions in the abdominal viscera.

early in the morning of that day on which the symptoms are most moderate; hastening the operation with clysters (if occasion require), so that it may be finished before the middle of the day, about which time the patient commonly grows worse. (*u*) In true simple and double tertians there is generally an interval every morning, in which the purgative may be administered, but that which succeeds the worst fit is the most proper, as it is more calm, and continues longer than the other.

Another inducement to purge in the beginning of tertians is, that these fevers are sometimes accompanied with worms in the first passages.

Proper evacuations being premised, if possible, within the first four or five days of the distemper, I carefully examine the condition of the patient during the third revolution, and determine accordingly in what manner it will be necessary to proceed. If the paroxysms of that revolution be neither longer, nor attended with more threatening symptoms, than those of the second; if the patient preserves his strength, bears his illness easily, and signs of concoction appear in the urine; I frequently trust the whole business to nature, which commonly terminates the fever about the fourth or fifth revolution, and, for the most part, with an increase of some of the natural evacuations; so that sweats, cloudy or thick urine, and bilious stools often supervene, and

(*u*) This practice of giving purges on the days of remission in autumnal fevers is judicious, and should be adopted by all physicians. They operate soonest and most freely on those days, and render the succeeding fits more easy.

sometimes a spontaneous efflux of spittle, or a copious expectoration of pituitous matter. (w)

But if the paroxysm on the fifth day be evidently the longest and most severe that has happened; if it be attended with any doubtful or dangerous symptom; if the sick become giddy, feeble, and languid; in these cases, without delay, I have recourse to the bark; and the same evening, as soon as the sweats have procured a remission, I order two scruples or a drachm of it in powder to be given every two or three hours, or every hour and a half, so that five or six drachms may be taken before next day at noon, with as little interruption to their sleep as may be; and the assistants are strictly enjoined to comply punctually with these directions, lest if this interval escape, we should not afterwards have a favourable opportunity of giving a sufficient quantity of the medicine, as the fits about this period of the disease are wont to become double, subintrant, or continual.

Yet it is not always in our power to put an immediate stop to the fever by this means: on the contrary, do what we can, it will often proceed in its career, and, in spite of all our attempts, run obstinately on to the seventh or ninth day. But the great advantage which accrues from the early use of the bark is, that it invigorates the powers of the body, prevents or removes the dangerous symptoms, and in tertians, which of their own accord would conti-

(w) The bilious, or, as it was commonly called, the "break bone" fever, which prevailed in Philadelphia in the year 1780, was attended with that constant hawking and spitting in many people, which is called "screatus" by Latin writers. All who had it, recovered speedily.

nue to the end of the second week or longer, it brings on a crisis sooner, and with much less disturbance. In short, to use the expression of one of the greatest promoters of medical knowledge in this age,* "it proves an excellent assistant to nature in what the ancients called, the concoction and maturation of the morbid matter;" and (I must add) in the expulsion of it likewise, sensibly or insensibly, by the most convenient outlets. For so far is it from suppressing any beneficial discharge, as some have asserted, that we daily observe a laudable separation in the urine, warm, profuse, universal sweats, plentiful bilious stools, and sometimes the hæmorrhoids and menses coming on after it has been used; though it effectually restrains the colliquative night sweats, to which persons weakened by tedious intermittents are incident.

Having given the bark, in the manner directed, on the fifth day of the fever, if a paroxysm comes on on the sixth, and declines the same evening, I order a few more doses to be taken, with a view to prevent, if possible, or at least to mitigate, the fit expected on the seventh. Yet it sometimes happens that the fit of the sixth day unites with that of the seventh, no remission intervening, so that the heat, restlessness, raving, and other complaints being greatly augmented, the case seems to be much more desperate than ever. But those commotions which follow upon the use of the bark in this stage of the fever, are more dangerous in appearance than reali-

* Monro on the Use of the Bark in Smallpox and Gangrenes, Med. Essays, Vol. v. Art. x.

ty; and so far from being alarmed at the sight of them, I commonly give expectation that a remission with profuse evacuations will happen the next evening; at the same time giving positive assurances that if the patient takes as much bark in that interval, as he did in the former, he will either have no more fits, or moderate ones, which will quickly yield to the same sort of management.

By this method, when assistance is timely called, the most formidable kinds of intermitting and remitting tertians, whether appearing in their own proper colours, or personating other distempers, may be certainly and speedily brought to a happy conclusion about the end of the first week or beginning of the second.

But if the fever has been neglected in the beginning, and you are not called till about the third or fourth period; when by the use of spirituous liquors, strong vomits, or violent exercise, the bowels are inflamed; or for want of seasonable evacuations, the first passages are overcharged with corrupted gall, and other putrid matter; the fits tedious and subintrant; or perhaps attended with a stupor, syncope, cholera morbus, cold sweats, and great weakness. These, indeed, are terrible cases, yet such as too frequently happen, and involve the physician in the greatest perplexity. So many indications and contra-indications present themselves at the same time, that by obviating one symptom you hazard the increase of another:* nor, under such circumstances, is it

* Sæpissime ad ægrotos vocatus, tantam tamque confusam, mirabar, symptomatum turbam, ut purgatio ne, an venæsectio, vel neutra, imprimis foret eligenda, decernere anceps et summi

easy to lay down rules for managing the sick: all that can be with safety advised is, to palliate the most pressing complaints in the manner hereafter proposed; in the meantime carefully watching the evening, the night, and the early part of the morning, for a remission; and the moment it offers, to fly to the bark as to the only remedy which can avert the impending danger.

If the patient seems strong enough to bear purging, I divide an ounce or six drachms of sal catharticum amarum, and half an ounce of bark, into four equal parts, and order one to be taken every two hours: the effect of this is, that the next fit is mitigated, and an intermission commonly ensues, in which the bark without the purgative must be repeated to finish the cure.*

But if the patient is so excessively feeble, that there is a manifest risk of his dying in the next period of the fever, instead of the sal catharticum, I give the bark with cordials (among which wine is by much the best), and endeavour to have six or seven drachms of it taken in the space of ten or

ponderis negotium esset. Nec doctorum, ut gravissimorum, consilia poterant in illis casibus suffragari, quin in alterutra operatione tentanda adhuc extaret ambiguitas.

Guidet. de Tertian. Autumn. apud Bianch. Hist. Hepat. par. iii. p. 287.

* Si tamen vacuatione opus sit, et ab urgente febre tempus ad exhibendum catharticum denegetur, post V. S. cortex Peruvianus, cum purgante medicamento idoneo conjunctus, statim exhibeatur. Geoffr. Mat. Med. vol. ii. p. 188.

Tuto igitur in perniciosis his frebibus febrifugum quocunque tempore potissimum purgantibus immixtum propinetur.

Bianch. Hist. Hep. par. iii. p. 287.

twelve hours; having found by experience that the paroxysms, if a smaller quantity is given, too frequently come on earlier than usual, and make all attempts to preserve life unsuccessful.*

When the sick are out of danger, and have recovered a sufficient degree of strength, bleeding and purging may safely be directed, notwithstanding the use of the bark, if these evacuations are indicated; and so far is opening the belly occasionally from bringing on a relapse, that those who have had the best opportunities of making the trial,† have found it to be the most probable means of preventing a return of the fever. (x)

This is the method of using the cortex, into which I at length fell, after trying a great variety of others.

* For which reason, in such deplorable cases, Torti orders half an ounce or six drachms of bark to be swallowed at once; which he affirms is much more powerful than the same quantity divided into several doses. Vid. Therap. Spec. l. iii. c. iii.

† Qui dictitant febrem per corticem Peruvianum deletam, si postea cathartica propinentur, revocari, hosce toto quidem cœlo hallucinari, assidua nos docuit experientia, qua ægros post exhibitum corticem a febre liberos, per subrogata purgantia tutius a relapsu præcaveri recognovimus.

Blanch. Hist. Hep. par. iii. p. 283.

Mixtionem rhabarbari cum chinâ ipse ego apud Italos, xx circiter abhinc annis, primus faustam prosperamque hisce in casibus expertus fui, felicemque exitum, cum aliis, per epistolas communicavi. Lancis. lib. ii. epid. iv. c. vi.

Cortex cum rhabarbaro, anno 1710, non ea felicitate stimulabat alvum, qua anno 1708 et 1709, et propterea opus erat illius remedii usum grandioribus catharticis interrumpere.

Lanc. epid. iv. c. viii.

(x) This is true with respect to the acute fevers described by our author, but in autumnal fevers of weak morbid action a purge often brings back the disease.

Sometimes, indeed, extreme weakness, or some formidable symptom, obliged me to have recourse to it in the second period of the fever; but I never chose to give it before the third, nor to delay it after the fourth, in all cases of any consequence, provided there was a proper interval for its administration; and with its assistance, if the patients were not altogether exhausted, I had the pleasure of seeing them happily rescued from tertians of the most malignant kind, such as the lipyria, assodes, febris syncopalis, &c. What the poet says on a different occasion being literally true in the present case.

> Hi motus, et hæc certamina tanta
> Pulveris exigui jactu compressa quiescunt.
>
> Virg. Georg. iv.

And the more experience I had of the bark, the more I was convinced of both its innocency and efficacy; so that I heartily wish I had always given it with as much freedom as I did during the last seven years of my stay in Minorca: but the prejudices against this medicine, which I had early imbibed from some of the most approved authors, made me for a long time use it with too much diffidence.*

* Major medentium pars apud nostrates, ut vulgi calumniis, et assiduis ægrorum querimoniis se subducerent, in hac tempestate ad Peruvianum corticem confugere: At parum prospere; nam in perniciosos scopulos ægrotantes suos persæpe deduxere. Usu febrifugi, per aliquot dies, equidem latebat sub cinere doloso ignis, verum postliminio violenter recrudescebat.

Ramaz. Cons. epid. 1690.

Adverte quæso, mi nepos, et diligenter observa febres intermittentes post epotam chinam nunquam ad veram et perfectam apyrexiam pertingere, qualis contingit, quando natura sponte per sudorem aut alias vias accessionem discutit, &c. &c. &c.

Ramaz. de Usu & Abusu Chinæ.

In the first place, I suspected that the relapses, so frequent from July to January, were in some measure owing to the general use of the bark: and as I observed, that the greatest number of tertians went away of their own accord in a fortnight's time, I thought it would be more advantageous to the patient to suffer a few paroxysms, and, when no immediate danger appeared, to wait the spontaneous termination of the fever, than to hazard a return by having it prematurely suppressed: but afterwards, by comparing a number of cases which had terminated of their own accord, with others wherein the bark had been given, I evidently saw that those were most liable to a relapse whose strength had been most impaired by the primary fever, whether they had been cured by art or nature; so that a delay in giving the bark seems frequently to have produced the effects ascribed to its having been used too early.

Besides, while I was waiting for the spontaneous crises, even in cases where the mildness of the fits, and the length of the intermissions, afforded the most flattering hopes of a favourable issue, I now and then had the mortification to find my patient unexpectedly seized with a violent malignant paroxysm, attended by a stupor, speechlessness, and apoplectic symptoms, which seldom indeed proved fatal immediately, but were often succeeded by such insuperable weakness, that the bark could not be administered, or was given unsuccessfully, so that he died in the next period of the fever. The first two or three accidents of this kind I was willing to impute to some concealed irregularity in the use of the nonnaturals; but I have since been taught by too

many instances, that during the months of July, August, and September, it is very common for those fallacious fevers about the end of their second week, suddenly to change from the mildest to the most formidable aspect; and consequently that it is dangerous to permit their continuing so long. (*y*) The repetition of such accidents first induced me to think of writing on this subject, considering it as an indispensable duty to point out the danger of such omissions, to practitioners of less experience, in order to prevent them from being misled by the plausible theory of some authors, and the positive assertions of others, though delivered in so dogmatical a manner, as if they were wholly the result of careful observation. So that I must inculcate it as a rule of the utmost importance in the cure of those epidemical tertians, never to wait longer than the end of the first week, or the beginning of the second, for their spontaneous terminations, but without farther delay to apply to the bark.

Secondly, Before I learned, by observing the course of those fevers when left to themselves, that it is customary for them, in their progress, to vary their type, and increase in violence to the third, fourth, or fifth periods, I suspected that the hasty administration of the bark not only produced the inflammation of the bowels, delirium, and other bad

(*y*) The yellow fever in Philadelphia in 1803 came on in like manner in the form of a mild remittent in its first stage, and went off with all the symptoms of the worst grade of that disease. We are told in Sir George Staunton's Account of the Embassy to China, that the malignant and mortal fevers of Batavia came on in the form of a tertian.

symptoms, which supervene about the height of the disease, but likewise occasioned the paroxysm to double, or perhaps continue without remission;* whereas the fact is, that many tertians which intermit during the first week, are very apt of their own accord to become continual fevers in the second, and extend to the 17th or 21st day, or farther, before an intermission is again perceptible; but if any interval, however obscure, appears about the fifth or seventh day, and you can give them five or six drachms of bark as above directed, you will proba-

* Chinam chinæ dare impuro corpore, id est in principiis morborum, nullis precedentibus signis coctionis, et corpore non purgato, piaculum est in aere Romano; methodus damnabilis ac perniciosa. Dicunt multi dandum esse, ut impetus symptomatum tunc furentium coerceatur ac refrænetur; ut inde æger, symptomatum sopita vi, diutius possit morbo resistere. At si tu loco frænandorum symptomatum, parvos humores per chinam chinæ in aliquo viscere figas, ac concludas, et ita internam parias inflammationem, ut frequentissime observavi, nonne tu culpandus eris? Nonne tu reus necis lege aquilia puniendus? Febricitantes meos curo per leges coctionis et crisium—et raro cum recidivâ: quam recidivam singulis momentis ab usu chinæ chinæ expectato. Bagl. de Fib. Mot. Spec. c. xiii.

Pariter rubris existentibus urinis, et supra modum tinctis, cave cane pejus et angue, ne chinam chinæ præscribas, sive sint acutæ sive sint intermittentes febres; nam acutæ, facta internâ inflammatione, statim præcipitabunt in deterius; intermittentes vero statim fient continuæ, graves, periculosæ; quare si in aliis morbis, certe quando isti conjunctam habent urinam nimis rubram, patiens, longa, prudensque humorum coctio, semper expectanda; si secus feceris, vel mortem vel longos et incurabiles morbos expectato. Romæ scribimus in aere Romano (in the noxious air of Rome)—sancte fateor, fere centies hujusmodi veritatem expertus sum Romæ in ægrotantibus, et sæpe cum magno animi mærore, quando medicos in contrariam ire sententiam observabam. Bagl. Prax. Med. p. 71, &c.

bly obtain a more perfect remission in the next period; during which the like quantity must be given; and thus by repeating the remedy as opportunity offers, the disease may be brought to an end, about the ninth, eleventh, or thirteenth day. Nor are we to hesitate in giving the bark, upon account of the crudity and redness of the urine, which I have frequently observed to become paler, turn cloudy, or let fall a sediment, by the use of this medicine.

Thirdly, I was a long time in doubt, whether the bark might be given without prejudice, while the first passages were full of vitious humours, and the bowels were inflamed, or affected with inveterate obstructions;* but I have now good reason for asserting, that in these very cases this medicine is of the greatest use; as it averts sudden death, and gains us time to join with it other means towards

* Vid. Boerhaav. Aphor. 767.

Nonnulli in his casibus (nempe tritæophyis, hemitritæis et aliis malignis tertianis) solent more solito chinam chinæ præscribere; quo autem cum successu pluribus in locis hujus operis animadverti. Nam hoc remedium impuro corpori dare, sæpe in ægroti perniciem vertitur; potissimum in maximo apparatu humorum in mesenterio. Bagl. Prax. Med. p. 58.

Romæ scribo et in aere Romano: et ideo garriant quicquid velint chinæ chinæ fautores: aliis forsan in urbibus egregium est remedium, hic noxium experior. Bagl. ibid.

Si chinam dederis (ut fataliter plurimi faciunt), ventre adhuc humoribus onusto, tria expectato, aut inflammationem, aut lentam ac diuturnam febrem, aut mortem. Observa bene, et si falsa dixero, me redarguas. Romæ scribo et in aere Romano. Bagl. de Fib. Motr. c. xiii.

In semitertiana (inquit Hoffmannus) omittantur pulveres adstringentes nec non cortex chinæ, &c. Med. Rat. tom. 4. § i. c. v.

completing a cure. For the quantity of acrimonious contents in the primæ viæ is the effect of the alteration produced in the circulating fluids by the fever; and the longer this continues the more impurities will be accumulated, till at last they bring on a violent cholera morbus; or perhaps make their way through the lacteals into the habit, and there occasion very fatal effects; all which might have been prevented by the use of the bark, which removes the cause of those impurities by putting a stop to the fever; and by corroborating the solids, enables them to throw off the excrementitious fluids by the proper emunctories. (z)

Inflammations of the abdominal viscera are likewise natural effects of tertian fevers; for we find that they often come on by little and little, and increase with every paroxysm, till at last they end in a gangrene: whereas the cortex, by bringing the fever to a speedy conclusion, impedes the farther progress of the inflammation; so that it afterwards goes off gradually of its own accord, as I have had occasion to observe in a multitude of instances where acute fixed pains, tension, and other symptoms, made the nature of the disease too plain to be doubted of.

When the bowels are obstructed, we are told that the fever should be permitted to continue, in order to remove the obstruction, (Vanswiet. in Aph. Boerhaav. 767.); and this in many cases may be ad-

(z) There are cases in which so great a prostration of strength takes place in the fevers which our author has described, that even a single evacuation from the bowels has induced death. Here bark and other stimulants are the only remedies that are calculated to do service.

visable: but at the same time it is well known, that if the obstructing matter be suddenly dissolved and pushed into the blood, it is capable of occasioning the most terrible effects. (Aph. Boerhaav. 1104.) And therefore I have commonly found it expedient, in persons troubled with hard overgrown livers and spleens, to prevent the repetition of long, severe, burning paroxysms, lest worse consequences should ensue. After the sick recovered their strength, I endeavoured to reduce the swellings of the belly, by the use of saponaceous gum pills, washed down with an infusion of juniper berries.

When there is an icteritious colour in the eyes, we are likewise told that the cortex should not be administered;* though in my opinion it is for the most part dangerous to delay it, after the first appearance of that symptom; which is often succeeded by a yellowness of the whole body, arising in this as well as in other malignant fevers from a total corruption, or gangrenous disposition of the mass of blood, and is too frequently the harbinger of death. (See Warren on the Malignant Fever of Barbadoes, p. xii.)

Upon the whole, I am convinced that the unhappy metastases, which some have observed to follow the use of the bark, are exceedingly rare, and ought rather to be ascribed to other causes than to this medicine. (Med. Essays, vol. iv. art. xxiv.) And I will venture to affirm, that more bad consequences ensue from giving it too late than too soon; prostration of strength, sudden death, or the most ob-

* Vanswiet. ubi supra, & Huxham on Fevers.

stinate chronic diseases, if the sick recover, being the usual effects of delay: whereas the worst that commonly happens from the too early use of it is, that it does not at once restrain the paroxysms, like a charm, without any sensible evacuation, as it frequently does, when given after the fever has arrived naturally to its height, and begins to decline of its own accord.

Having delivered the general method of treating tertians, it is needless to say much about their symptoms, as they commonly disappear with the fever itself, and seldom require a separate cure. Nevertheless, it will not be amiss to take notice of a few, which I have found the most troublesome.

In the first stage of the paroxysms acute pains in the back and limbs, with and without rigors or chilness, frequently happen; and I have sometimes known them so intolerable, and accompanied with such inexpressible anxiety, that persons of the soundest judgment and morality have been in hazard of destroying themselves to get rid of it. Before I was aware that these pains were the forerunners of tertian paroxysms, I commonly had recourse to bleeding, and without observing that it was attended with any ill effect: but of late years they never alarmed me, being well assured that they would go away of themselves, as the hot fit advanced.

The vomiting and nausea, after washing the stomach two or three times with warm water, is commonly allayed by draughts of salt of wormwood, lemon-juice and mintwater. And if a constant vomiting or purging hinders the bark from being retained, small doses of laudanum should be joined

with it: but a moderate bilious discharge is commonly beneficial, and therefore should never be suppressed.

Restlessness and headachs are the inseparable companions of the hot fit; so that the sick must either be encouraged to bear them with patience, or must be amused with some innocent prescription till the sweats carry them off. When the headachs are constant and troublesome in the apyrexies, I order the limbs to be frequently bathed in warm water, and cataplasms of horseradish and leaven to be applied to the soles of the feet.

Hemorrhages of the nose are often of signal service, in removing the obstinate headachs and pains in the abdominal viscera, whether they are *e directo* or not; though for the most part they happen from the nostril of that side, in which the pains are fixed; for which reason they ought not to be hastily stopt, unless they continue too long, or come at a time of great weakness.

When the belly is sore and painful to the touch, clysters and warm fomentations give great relief. When the pains are extremely violent, bleeding must be repeated: but during the hot weather we must not be too free with the lancet after the fourth period of the distemper; as the weakness commonly is then too great to admit of any such evacuation with safety.

If the patient continues comatous and stupified longer than ordinary, we must endeavour to rouse him from that lethargic state by scarifying, cupping, and blistering the neck and back.

Troublesome hiccoughs often cease, upon applying cupping glasses without scarification to the pit of the stomach, and giving small doses of laudanum with tincture of castor.

If acute pain and pulsation in the hip point out that a critical abscess is about to be formed there (a case that hath occurred to me five or six times), it must be brought forward by cupping glasses, and cataplasms applied to the place; and as soon as a fluctuation can be perceived, it must be opened by a deep incision; otherwise, the matter being lodged under the posterior double edge of the glutæus externus, instead of pointing outwards, may insinuate itself betwixt the muscles of the thigh; or may perhaps work its way into the cavity of the pelvis, by the hole through which the musculus pyriformis, and the sciatic nerve pass out; which seemed to be the case in one man, who had first an abscess in his right hip, and some time afterwards another in the left, and died consumptive from the immoderate discharge.

Parotids must also be brought to suppurate as soon as possible: but these are not very common in Minorca; nor are they much to be wished for, being oftener symptomatical than critical.

To conclude, as tertians personate almost all distempers, (*a*) so there are but few disorders to which the human body is incident, that will not sometimes appear in the course of these fevers; and these, when importunate, must be mitigated, as in other acute diseases.

(*a*) The yellow fever of Philadelphia in like manner has appeared to be an epitome of all diseases.

It has been already remarked, that whether the fever is cured by art or nature, there is a hazard of its returning within a fortnight or three weeks; nor could I ever fall upon any certain method of preventing one relapse after another, till the cold weather, which commonly sets in about christmas, had braced the solids, and given them sufficient strength to throw off the excrementitious humours by the proper outlets; for which reason I always advised those who were attacked in the beginning of the season, to leave the island, if their circumstances would permit, and not to return until the spring. And there are many instances of persons being greatly recovered by the change of air, even in the first two or three days of their being at sea. But if they were obliged to remain in the island, the best chance they had of escaping a relapse was to take a dose of the cortex every morning and evening, for several weeks; and now and then a gentle purgative, if a bitterness in the mouth, loss of appetite, swimming in the head, or sickness at the stomach, the common forerunners of it, should be perceived.

But if, notwithstanding all precautions, the fever returns, the patient must be treated as in the first attack; with this difference, that as relapses are attended with less heat and inflammation, bleeding, especially in the fit, must be used with more caution, or altogether omitted, and vomits may be given with greater freedom. And, as they happen mostly in a cooler season, they do not threaten such immediate destruction, and consequently may be longer trusted without the bark, if you are disposed to attempt a cure by other methods; though that remedy must

never be delayed when the fits are violent or protracted. In this manner the patient must be content to go on till the turn of the year alters the constitution of his body, and restores him to his former health.

It has been insinuated by some that a long continued use of the bark was liable to bring on nervous complaints and lowspiritedness; but in the multitude of cases, wherein I have been obliged to make use of it, I have not been able to discover that it had these or any other ill effects, when given in the manner above mentioned. And as to its occasioning dropsy, I do not remember to have met with above one instance these ten years, where there was a possibility of alleging that it gave rise to that distemper.

It is not uncommon for a looseness to come on in the room of a relapse. Sometimes instead of a tertian a quartan supervenes; which nevertheless may be speedily taken off by the bark; but if left to nature alone it will probably continue to the spring; or perhaps first turn to a double quartan, and afterward to a triple quartan; which, as Celsus observes, is a dangerous distemper. (Lib. iii. c. xv.)

With respect to the tertians, which now and then appear at other times of the year, they are more of a chronic disposition than those of the summer and autumn; the cold fits being longer, the hot fits less severe, and the intermissions, more regular and perfect. Add to this, that they are not so commonly attended with critical eruptions about the mouth; nor do the sick discharge such quantities of gall either upwards or downwards; and the urine oftener deposits a lateritious sediment: but so far is this sedi-

ment from being the criterion of intermittents, that I have frequently seen it in pleurisies, and other inflammatory fevers; while in both tertians and quartans I have, for the most part, found the urine clear without any separation; and in tertians the sediment was oftener more like chalk than brickdust.

Thus have I given the history of those fevers, collected from an almost infinite number of cases, carefully minuted in the chambers of the sick, without trusting to memory, or regarding what others had said on the subject before me, or advancing any thing but from reiterated examination. The observations relating to the cure, which are by much the most material, have been confirmed again and again by the experience of all who have practised physic with attention, among either the English or Spanish inhabitants of Minorca; therefore I am in hopes that these remarks will not be altogether useless to the public. It is well known that contagious intermittent and remittent fevers of the tertian kind, are anniversary distempers in several of the warmer climates both in Europe, Africa, and America; and even in the northern parts of Europe they are often epidemical after extraordinary hot dry summers.* By all that I have been able to learn of them from authors, there is a great analogy among them every where: and though in some places they may require more or less copious evacuations than we find beneficial in Minorca, yet I am persuaded that it may safely be

* Hoffm. Med. Rat. tom. iv. cap. iv. sect. i. Short's History of the Weather, &c. Anno Domini 1237, 1540, 1558, 1574, 1652, 1657, 1669. Wintringham, anno 1719; and Vanswiet. Comment. in Aph. Boerhaav. 767.

laid down, as a general rule in all cases of danger, to give the bark liberally and without hesitation about the third or fourth period of the disease, whether evacuations have been previously used or not. Which practice is agreeable to the observations of the ablest and most experienced physicians of different nations; such as Morton* and Sydenham† in England, Bartholin‡ in Denmark, Hoffman|| in Germany, Geoffroy§ in France, Rodriguez** and many others in Spain, Guidettus and Bianchi in Piedmont,†† Torti in Modena,‡‡ Musitanus|||| in Naples, and Traversarius¶ in Pesaro; nay even in aere Romano, where Baglivi declaimed against the use of the bark with so much passion, Lancisi* has of late years, as well as the cardinal de Lugo† and father Fabri‡ formerly, had incontestible proofs of its being not only an innocent, but a necessary, powerful remedy in the cure of tertian fevers.

* Exercit. de Morb. Acut.
† Epist. Respon. I.
‡ Ephemerid. German.
|| Med. Rat. tom. iv. § i. c. i. obs. 5.
§ Mater. Med. tom. ii.
** Palæstr. Med. tom. ii. disc. 12.
†† Hist. Hep. part iii.
‡‡ Therapeut. Special. sparsim.
|||| Pyretolog. c. xxiii.
¶ Apud Lancis. l. ii. epid. iv. c. viii.
* Epid. sparsim.
† Antym. Conyg. Pulv. Peruv. Vind.
‡ Id. ibid.

CHAPTER IV.

OF THE RASH, ESSERE, AND CHOLERA MORBUS.

HAVING given an account of tertian fevers, which was the chief design of this treatise, I shall endeavour to bring my remarks on the other epidemical diseases into as narrow bounds as possible, by passing over such circumstances as are taken notice of by the generality of authors.

The cutaneous eruption which we call the rash, or prickly heat, is the *sudamina* or *papulæ sudoris* of the Romans, and the ἰδρῶα of Hippocrates, (Aphor. § iii. No. 21.), who justly places it among the summer diseases; it being so frequent in warm countries, that few people escape having more or less of it during the hot weather; though children are much more affected by it than others. It consists of numerous minute pimples, or rather small, round, red spots, just perceivable by the touch, as a kind of roughness on the skin, which break out on different parts of the body, especially after exercise or drinking cold water.

This eruption is commonly looked upon as a sign of health; and indeed while it continues fresh on the skin, no inconveniency arises from it except a frequent itching: but if accidentally the pimples are driven in, by catching cold, bathing in the sea, or

any other error in the nonnaturals, the case too often becomes dangerous. And I have constantly observed, that those who had a great deal of this eruption in the summer, were subject either to fluxes, hemorrhages from the nose, or fevers, upon the alteration of weather about the autumnal equinox. Wherefore I commonly advised them, as soon as the slightest signs of a retrocession appeared, (such as sickness, headach, and preternatural heat) to lose some blood immediately, and make use of mild cathartics, vegetable food, and cooling acescent liquors: by which means the bad consequences above mentioned, if I am not greatly deceived, have been frequently prevented, notwithstanding the vulgar prejudices against evacuations in this and other similar cases.

The essere, so called by the Arabians, who first described them, though not uncommon in Minorca, appear much more seldom than the rash. They are hard, flat tubercles, of a pale colour and different forms, and break out chiefly while one is warm in bed, sometimes on one part, sometimes on another, occasioning such an intolerable itching, that it is impossible to refrain from scratching; and the more they are rubbed the larger they become. They seldom continue out above an hour or two at a time, but suddenly vanish of themselves, the skin recovering its natural colour, and come back again as unexpectedly as they went off; the patient having more or less anxiety about the pit of the stomach, during the time of their disappearing. The Spaniards call them ronchados, from roncho a nettle in the Castilian language, they having exactly the appear-

ance of swellings occasioned by the sting of nettles: in Minorca they go by the name of favas, probably from their frequently resembling beans in shape and magnitude. (*b*)

It is commonly allowed by authors, and not without reason, that those who have this sort of eruption should make use of bleeding, purging, and proper alteratives; otherwise a fever is liable to ensue. (Vid. Sennert. lib. v. part i. cap. xxvi.)

The essere, as has been already observed, often accompany tertian fevers, and appear most commonly in the hot fit. Sometimes I have seen them so numerous that the whole body was disfigured by them, and painted in many places with all the colours of the rainbow. In a few such instances, which contrary to expectation proved suddenly mortal, the patient's death seemed to be occasioned by those fiery pustules being accidentally thrown upon the brain instead of the skin. For which reason, wherever I met with them in great abundance, I took care to make as liberal evacuations as the strength and age of the patient would permit, and proceeded speedily to give the bark; which effectually cures both them and the fever.

As to the cholera morbus, it must be managed according to the method first hinted by Hippocrates,* and of late described more fully by Sydenham, (De Morb. Acut. § iv. c. ii.) To which I must add,

(*b*) These eruptions now and then occur during the prevalence of autumnal fevers in the United States.

* Choleræ morbo conferunt, si quidem dolor adsit, anodyna; venter autem superior, tum inferior potionibus humectantibus curandus. Hip. de Affect.

that if feverish complaints, or fixed pains in the belly or sides come on, after the evacuation is stopt, (as is frequently the case) it will be necessary to bleed and keep the belly open. (*c*)

The Spanish physicians have often assured me, that they found nothing more beneficial in violent deplorable choleras than drinking of cold water: which practice is recommended by many of the ancients.*

When the cholera morbus returns periodically, like a tertian, it must be cured as those fevers are; but it denounces much more danger when it attends the fits about the third or fourth period, than it does in the beginning of the disease.

(*c*) Bleeding has been found necessary of late years to cure the cholera morbus in Philadelphia in many instances. The efficacy of cold water in this disease in Minorca (mentioned in the next paragraph) proves the correctness of that practice made use of by our author.

* Sin autem omnia antiqua stercora dejecta fuerint, et biliosi humores transierint, biliosusque vomitus et distentio adsit, fastidium, anxietas, virium labefactatio, tunc frigidæ aquæ Cyathi duo aut tres propinandi sunt ad ventris adstrictionem, ut retrogradus humorum cursus cohibeatur, atque stomachus ardens refrigeretur. Assidue vero id, quum potam aquam vomuerit, facito. Aret. Cappad. de Curat. M. A. l. ii. c. iv.

See likewise Cæl. Aurel. de Morb. Acut. l. iii. c. xxi.

CHAPTER V.

OF THE DYSENTERY.

By perusing the accounts which I kept of the sick, while dysenteries were epidemical in Minorca, I find that they began three different ways.

First, Sharp indigested humours flowing from the stomach, or (what seems to be more frequently the case) an increased secretion of the bile and other liquids necessary for chylification, produce a simple looseness; which gradually washes off the mucus from the intestines, erodes their membranes, and at last brings on severe gripes with bloody stools.

Secondly, Others are seized with horrors, rigors, and all the train of feverish symptoms, which commonly attend the first attack of *acute* diseases; and in a short time afterwards a painful frequent evacuation of slime streaked with blood ensues.

Thirdly, Others have no preceding fever, but are seized at first with a twisting of the guts, which (as they express it) draws up their bowels into knots; and many, instead of griping pains, which shift from place to place, and come at intervals, have acute fixed ones in some particular part of the belly, which occasion complaints as various as their seat; some being tormented with stitches about the bastard ribs, interrupting their breathing freely, as in the pleurisy;

others with a pain reaching from one hypochondrium to the other, cutting them, as it were, in two; while others complain only of a pain about the pelvis, with a constant, fruitless, straining to stool; though the body is, for the most part, costive, or discharges nothing but bloody slime.

But in whichsoever of these ways dysenteries begin, in process of time the case comes to be pretty much the same; the intestines are irritated, inflamed, and ulcerated; a fever, for the most part of the periodical kind, comes on; the constant stimulus in the bowels diminishes the cutaneous discharges; and, of course, a greater proportion of fluids is thrown upon the guts; the flux increases, and what is discharged becomes more ichorous, and offensive to the smell; the strength decays; and death, or a tedious recovery, is commonly the consequence.

Upon opening the bodies of the dead, I have constantly found the great guts either entirely mortified, or partly inflamed, partly mortified, the rectum being generally most affected: in many I have seen scirrhous tubercles (*d*) straitening the cavity of the colon in several places; in a few, there were small abscesses in the cellular membrane of the peritoneum contiguous to the colon and rectum: sometimes the small guts were perfectly sound in appearance; but more frequently their lower part was inflamed, the convolutions being often preternaturally connected to each

(*d*) The reader is requested to attend to the suddenness with which tubercles are formed in the dysentery. They render it probable that they are formed in the same sudden manner in the lungs, and that they are the consequence, and not the cause of that disease in the lungs which ends in pulmonary consumption.

other by membranes, as the lungs sometimes are to the pleura. In two people the omentum (*e*) was almost entirely wasted (the small remains of it being quite black), while purulent water was found in the cavity of the abdomen; in several it was inflamed and adhered both to the guts and peritoneum; for the most part the gall-bladder was full of dark bile, and the *spleen*, more or less, in a *putrid* condition.

Almost all the dysenteries, which fell under my observation, unless they were speedily cured in the beginning, at best proved obstinate, and too frequently fatal, in spite of the many boasted specifics for this distemper; for which reason, whenever they are epidemical, the utmost diligence should be used in applying the proper remedies before the strength of the patient be exhausted, and the coats of the intestines too much injured. And even let the utmost care be taken of them never so early, the event is often dubious or unsuccessful; though among the common soldiers this seems frequently to be owing to a want of means for keeping them clean, and conveniences for easing themselves, without being obliged to get often out of bed, and expose their bodies to the open air. Which conveniences it were to be wished, that those who have the direction of our

(*e*) The exhausted state of the omentum of fat, or its total destruction, generally attends chronic diseases which end in death, except in those cases in which the functions of the liver are impaired. An inference has lately been made from these facts in favour of the design of the omentum being to secrete fat, to be conveyed to the liver in diseases which impair the appetite and digestion, in order to be converted by a secretory process into chyle for the nourishment of the body.

fleets and armies, would order to be provided both in the ships and hospitals. (*f*)

I shall not enter upon a minute description of all the rules necessary to be observed in the cure of dysenteries; but only point out such methods of treating the sick, as experience taught me to be the most beneficial.

When they begin like a simple diarrhœa, without fever or fixed pains in the belly, the first thing to be done, is to empty the intestines of their acrimonious contents as soon as possible: and the most efficacious remedies for this purpose, as far as I know, are the *radix ipecacuanha* and the *vitrum antimonii ceratum.* The latter I used to give from five to ten grains early in the morning: of the former I directed ten or fifteen grains in powder, to be divided into three doses, and to be taken in the forenoon at the interval of two hours, or an hour and a half between each dose. The most common effect of both was to procure a thorough evacuation upwards and downwards during the day; and they often threw the patient into a sweat the ensuing night.

The same remedies I have likewise found to be serviceable in obstinate relapses of intermittent fevers: but I prefer the ipecacuanha, as being certain in its operation; whereas the other sometimes did not produce the intended discharge, at other times occasioned greater commotions than were expected. Nevertheless, I must acknowledge that now and then,

(*f*) In some of the Spanish hospitals leather is made use of instead of a bed pan or linen to receive the stools. It is easily removed, and when washed and dried, may be employed as often as it is required.

in desperate bloody fluxes, I have known the antimonial medicine to be successful, after every thing else had been tried to no purpose. But I return to the method of curing them in the beginning.

At first I repeat the abovementioned evacuations every other day for three or four times, and afterwards at greater intervals, if the disease continues; endeavouring, in the meanwhile, by proper drinks, to blunt the acrimony in the first passages, and defend their sensible membranes from being eroded; and every night at bedtime, I give a small dose of opium, sufficient to mitigate pain, procure rest, and promote perspiration, without keeping the sick in a constant state of stupidity, or preventing a due discharge by stool; as I have seen some do very injudiciously by the too liberal use of anodynes. (*g*)

But when the dysentery began in the second or third way above described, which was commonly the case in the year 1747, I confided principally in the early use of the antiphlogistic method, with a view to hinder the guts from being farther inflamed and ulcerated. Wherefore, when I was called in time to young people, I took away ten or twelve ounces of blood immediately, and afterwards repeated the operation once or twice at proper intervals, according as the violence of the pain and degree of fever indicated: at the same time I ordered emollient clysters and fomentations to be frequently made use of; and plenty of warm, soft, diluent liquors, for common

(*g*) The practice of our author in the use of purges and opiates, accords with that of the most successful practitioners in the United States.

drink; shunning opium as much as the intolerable torture of the distemper would permit.

As soon as the fever was somewhat abated, and the violence of the pains assuaged, I next endeavoured to procure a sufficient discharge by stool. For it is to be observed, that wherever the ilium, colon, or rectum are inflamed, hardened excrements are, for the most part, either the cause or the consequence of the disease; nor can we hope for a complete recovery while such offensive matter remains in the bowels; wherefore purgatives of the mildest kind may first be made use of, such as whey, weak broth, sweet oil, solution of manna, cremor tartari, &c. proceeding by degrees to the more active, till the end proposed be obtained; after the same manner as we are directed to do in Sydenham's bilious cholic; which indeed is a disease nearly allied to the dysenteries I am now treating of, and is always frequent at the time when they are epidemical. In both cases, when other means have failed, six or seven grains of calomel with a grain of opium at night, after the use of the semicupium, and a purging apozem made of senna, manna, and sal catharticum the next day, have proved successful, and brought off a prodigious quantity of round, hard, fetid lumps, to the great relief of the patient; nor is it easy to conceive how so much had been collected, or where it had lodged so long, as in some cases I have observed: the patient having eaten nothing for two or three weeks, that could furnish much excrement, and during that time had taken several clysters and common cathartics, which brought away liquid stools. (*h*)

(*h*) This fact has been mentioned among others as a proof

Having by such methods removed the inflammation of the intestines, and dislodged their irritating contents, the tenderness of the bowels must be mitigated by anodynes, and the use of such medicines, as supply the want of the intestinal mucus.

By these means dysenteries, if taken in time, have been speedily carried off; as well as the tenesmus, which is a disease very nearly allied to the former, and equally fatal, whatever Celsus may allege to the contrary. (De Med. lib. iv. c. xxi.) But if they were neglected in the beginning, or did not soon yield to the remedies above mentioned, the case commonly became inveterate and perplexing; the same medicine which gave relief to one, often doing harm to another, as Hoffman justly observes. (Med. Rat. t. vi. § ii. c. vii.) In general, it answered best to avoid such diet as would afford a large quantity of putrid, irritating excrement; to drink plentifully of mild gentle detersive balsamics; to give liquids of the same kind in clysters; in short, to pursue with diligence the directions given us by the great Boerhaave in his Aphorisms, (No. 966, 976.) with this addition, that it was absolutely necessary to give opium twice a day, in order to obtain some respite from perpetual torment, and gradually to increase the dose from half a grain to five or six, as use made it familiar; and once or twice a week or oftener, as the strength would allow, and the symptoms indica-

that the liver performs the office of a chylopoetic viscus, and that the fæces which are discharged during the long intervals of eating, are formed from the chyle that is secreted from the fat of the omentum, and other parts of the body, and which is absorbed during the continuance of the disease.

ted, to hinder the acrid matter from being accumulated in the intestines by giving clysters, cathartics, or small doses of ipecacuanha.

If by these means the patient can be kept alive during the first severe winter weather, he stands a good chance of holding out to the summer, which commonly restores him to his former health, when he must be weaned by degrees from the use of opium; from the continuance of which medicine, in such cases, I have never found any ill effects ensue; on the contrary, I could name many people who have been obliged to take it in this manner from September to the following June; and as far as I am able to judge, it is to the opium they are chiefly indebted for their lives, and the perfect health which they at present enjoy. (*i*)

The great similitude there is in many respects between tertian fevers and dysenteries, induced me frequently to make use of the bark in the last named disease. When the fever and gripes were regularly exasperated, either every day or every other day at stated periods, it has often effectually put a stop to both; (*k*) especially if the exacerbation began with chillness, and terminated in sweats: At other times

(*i*) Hundreds of patients with chronic dysentery and diarrhœa can testify to the truth of this account of the safety and efficacy of opium as a chronic medicine. It prevents the patients having recourse to ardent spirits, over which it has the following advantages, viz. it gives more prompt and certain relief, and the habit of using it, when it ceases to be necessary, is more easily broken.

(*k*) In cases where the dysenteric symptoms become periodical, the editor has administered the bark with equal success in the intermissions of those symptoms.

it removed the fever, the flux continuing without much alteration. In some cases I have given it merely with a view to prevent the mortification of the intestines in the last stage of the distemper: but I am sorry to say that it was seldom so successful as I could have wished.

CHAPTER VI.

Of the Pleurisy, and other Inflammatory Fevers, frequent in the Winter and Spring.

THE anniversary epidemical fevers in Minorca may be divided into two classes, which at present, for distinction's sake, we shall call the summer and the winter fevers. The former break out in June or July, and cease about January, or somewhat sooner. The latter seldom appear before November, and are rarely seen after the summer solstice; so that one seems to be the offspring of excessive heat; the other of the sudden cold which the north winds frequently occasion. And as the same sort of weather recurs regularly every summer and autumn, so likewise do the diseases: whereas those of the winter and spring, agreeable to the variable disposition of those seasons, are neither so uniform nor so certain; being some years more frequent in one month, others in another. The summer fevers are by much the most universal, making up two thirds, or sometimes three fourths of the whole annual diseases, and attacking the inhabitants of every rank, whether natives or foreigners, without distinction: (*l*) whereas the others are less

(*l*) The autumnal fevers constitute about the same proportion of all the acute fevers of several of the middle and southern

injurious to the English than to the Spaniards; and especially to the peasants, whose houses are commonly built upon rising grounds, and not so well adapted for keeping out the piercing cold of the winter, as sheltering them from the summer's heat; so that I have known particular corners of the country almost depopulated, while the towns and villages escaped any remarkable mortality.

Both these classes of fevers, and indeed almost all others which happen in that climate, whether primary or symptomatical diseases, may be termed periodical, having remissions at intervals, more or less considerable: but those of the summer, as has been already observed, generally assume some one or other of the tertian types, being worse one day and better the next alternately: whereas the winter fevers, though they often counterfeit tertians, especially in their beginning, yet for the most part have exacerbations equally strong every day, coming on about noon with or without cold shiverings, and terminating towards morning, sometimes with gentle sweats, sometimes without any sensible evacuation.

It may likewise be remarked, that as the summer fevers are generally complicated with fluxes and painful obstructions in the chylopoetic viscera; so are those of the winter, with coughs, catarrhs, and topical inflammations of the vital organs, the brain, the lungs, the heart itself; and hence it is that the latter are more destructive in proportion to their

states. The same disposition in winter fevers to appear with daily exacerbations and remissions which our author has mentioned in the preceding paragraph, takes place in the United States, not only in the winter, but during the succeeding spring.

numbers. Notwithstanding which, as the former are much more constant and universal, if we calculate one year with another, we shall find that "the autumn produces the most acute and most fatal diseases of all seasons; and the paroxysms in the evenings bear some resemblance to it. For as the day of any particular disease is to the year that contains the period or circle of diseases, so is the paroxysm in the evening to the autumn." (Hip. de Morb. Vulg. l. ii.) And indeed the conformity between such of those diseases as are described in the Hippocratical writings and the appearance of them at this day in climates near the latitude of Greece, will be abundantly evident to every one who considers the preceding account with any degree of attention.

Having premised those general reflections, in order to give the clearest idea I can of the winter fevers, I shall describe them as they appeared during the last month of the year 1745 and the first part of 1746, when the uncommon destruction which they made among the English rendered them more immediately the object of my attention; and as the generality of them is called *mal de costat* by the vulgar, and the pleurisy by physicians, from their being accompanied with pains in the side, I have, in compliance to prevailing custom, retained that name in the title of this chapter, though it will appear in the sequel, that they ought rather to be termed peripneumonies, agreeably to the observations of Zechius,* Hoffman,† and others.

Those pleurisies began commonly like an ague fit, with shivering and shaking, flying pains all over

* Apud Bonet. Sepulchr. Anat. lib. ii. § iv.

† Med. Rat. tom. iv. § 2. cap. iv.

the body, bilious vomitings and purgings, which were soon succeeded by quick breathing, immoderate thirst, inward heat, headach, and other feverish symptoms. In a few hours the respiration became more difficult and laborious; the most part of the sick being seized with stitches in their sides, striking upwards to the clavicle, and shoulder blade; obliquely downwards along the cartilages of the bastard ribs; or else darting across from the breastbone to the vertebræ of the back; so that they could neither cough, nor make a full inspiration without great pain. Many complained chiefly of a load and oppression in their breast, as if a millstone had been laid upon it; some of a heaviness and fluttering about the heart, which at one time seemed to glow with extraordinary heat, at another to be chilled with cold, as if it had been dipt in icewater. In a few of the sick those complaints preceded the fever, in others they did not come on till the day after. (*m*)

In the progress of the disease it was not uncommon for the pains to move about in the thorax from one place to another. Sometimes they would shift from the breast to the limbs, and of a sudden return to the bowels; and I have seen cases wherein, after leaving one side, they have attacked the other unexpectedly, and proved fatal in a very short time. The left side of the thorax was not near so liable to be affected as the other; forty-two out of sixty patients who were seized about the same time, having had the disease in the right. (*n*) But whichsoever

(*m*) The whole of this description of the pleurisies of Minorca, accords with the symptoms of what are called bilious pleurisies in the United States.

(*n*) The greater disposition of the right side to be affected in

side was affected, the sick lay easiest on the opposite; though the generality were obliged to lie upon their backs, or to sit up in bed with their heads erect. Many were drowsy and inclinable to sleep; but they raved at intervals, or were much disturbed with extravagant dreams. Some laughed in their sleep; others would awake in a fright and start out of bed, imagining that the house was in flames; that those about them were endeavouring to push them over a precipice; to pierce their sides with daggers; to bind them down with cords, or iron hoops, and things of the like nature.

In the meantime the external heat of the body was in several very moderate; in some less than natural; but for the most part it was so intense as to raise the mercury in Fahrenheit's thermometer to the 102d degree, and often in the afternoon to the 104th. The pulse was likewise very variable, not only in different persons, but in the same person at different times; and, in respect to its strength, in different arms, that of the pained side being most obscure; and I have frequently found it like that of a man in health, or even slower than natural,* while

the pleurisies mentioned by the author was probably the effect of a combination of bilious fever with them, which disposes to hepatic pains and obstructions. The *fixed* position of the patient mentioned in the next sentence, shows the pleurisies to have partaken in a degree, of the character of the pneumonia notha.

* Pulsum in pleuritide minus celerem, aut fortem (febre tamen acutâ in summo vigore nihilo minus subsistente) sæpius notavi: pulsûs igitur celeritas et magnitudo non semper cum febre inflammatoriâ sociantur. Qui in pleuræ aut pulmonum inflammationibus pulsui nimium fidunt, decipiuntur, &c. &c.

O'Connel de Morb. Acut. p. 235.

the patient was in the greatest danger; so that it could neither be depended upon as a prognostic sign, nor as an indication of cure. Nor was the colour or consistence of the blood more to be trusted; in many it had a white or pale yellow crust, the serum being of the same complexion; but for the most part it was red and florid. It frequently changed its appearance, in the space of a few hours, in the same person; what was drawn in the morning having a crust; that in the afternoon none, *et vice versa.* (*o*) And I could never positively determine which sort afforded the best or the worst prognostic. The signs from which one could pronounce the patient's recovery, with the most certainty, were his being able to sleep sound in the natural posture, and to make a full inspiration without difficulty, while his thirst and inward heat were moderate.

Beside some abatement of the fever, which commonly happened every morning, it was remarkable, that upon the third day, or beginning of the fourth, there was frequently a great remission, sometimes a total cessation of every violent symptom; so that the sick were thought to be out of danger: but on the fourth or fifth a delirium suddenly came on, or the breathing became more difficult than ever, and one or both of those symptoms increasing hourly, the patient expired in a day or two, either suffocated or raving mad; unless nature or art assisting, he

(*o*) It is evident from the state of the skin, the pulse, and the blood, that this pleurisy partook a good deal of a malignant nature. The changes in the appearances of the blood drawn at different times of the day, show how much they are influenced by the varying force of the blood vessels.

had the good fortune to escape by means of some of the evacuations to be hereafter mentioned. It sometimes happened that the remarkable remission fell out on one of the days between the fourth and the seventh; in which case the exacerbation succeeded on the following day. (*p*)

Out of twenty-one patients, whom I lost by this distemper, four died upon the fourth day; three the fifth day; three the sixth; three the seventh; three the eighth; two the eleventh; one the fourteenth; and the remaining two, though the day cannot positively be determined, yet from some circumstances, it is evident, that it must have been the fourth or fifth. And indeed such was the rapid progress of those mortal pleurisies, that if any of them survived the seventh day, it seemed to be entirely owing to bleeding.

(*p*) The whole of this paragraph is a further illustration of the bilious and malignant character of the pleurisies described by our author. The same supposed "remissions, and total cessation of every violent symptom," frequently took place in the yellow fever in Philadelphia. The editor differs from the author in supposing them to be remissions. On the contrary he believes them to be the effect of the system being reduced by a severe paroxysm of fever, below the points of sensation and reaction. That this was the case in the pleurisies, he infers from the favourable issue of the practice of our author, mentioned in a subsequent part of his work, where he informs us that the loss of thirty or forty ounces of blood within the first three days, and bathing and blistering the legs, prevented what he has called "the insidious intervals," or "treacherous remissions" of the disease, and induced such "commotions" in the system, or so severe a paroxysm, as to require bleeding and blistering to subdue it. The same copious bleedings prevented similar apparent remissions in the yellow fever of Philadelphia, or if they had not been used to a sufficient extent, the repetition of them relieved the system from its insensible and oppressed state, and thereby created a fever, and thus saved life.

I examined fourteen of the bodies, in all which the lungs were principally affected; whilst in several the pleura was perfectly sound, or only slightly attached to the lungs, which is a common case in adults, as every one knows who is accustomed to dissections. In many the lungs were converted into a hard liverlike substance, and sunk in water; in some the diaphragm was inflamed; in others large firm polypi were taken out of the ventricles of the heart and large vessels adjoining. (*q*) Abscesses, or rather half formed abscesses, with a sanious ichor, and a rotten gelatinous substance, instead of concocted matter, were frequently found, even in those who died so early as the fourth day, either in the lungs, or between the lungs and pleura, where they adhered, or between the membranes of the mediastinum, near the diaphragm. And these abscesses had sometimes emptied themselves into the cavity of the thorax, so that the lungs floated in purulent serum; their external membrane, and likewise the pleura, being greatly thickened and converted, as it were, into a white crust,* like melted tallow grown

(*q*) It appears from our author's dissections that polypi as well as tubercles are formed by acute as well as chronic diseases.

* I am now doubtful if this crust was the pleura and external coat of the lungs, changed from a natural state by soaking in a purulent fluid, or if it was not altogether a preternatural substance, formed by fluids deposited on those membranes, and compacted together by the motion of the lungs; for I have lately been informed by Mr. Hunter, that, in those who die of internal inflammations, he generally finds the surface of the cavities and the bowels furred over, as it were, with a thick slough of an ash colour, somewhat inclining to yellow, which he had an opportunity of observing in all the different degrees of con-

cold, part of them being eroded and detached from the rest. In some bodies the pericardium was full of purulent serum, its internal membrane and the outer surface of the heart, being affected in the same manner as I have just now described those of the lungs and pleura. In two people whose heads were examined, the sinuses of the dura mater were stuffed and distended with blood, the membrane itself being sound, and the pia mater, together with the plexus choroides, was inflamed and much thicker than in a natural state.

In one person, whom I imagined to have died of a pleurisy, the lungs and pleura were sound; but there were polypi in the heart, the diaphragm was inflamed, and a large abscess was found in the right lobe of the liver, which had discharged itself into the abdomen, where much purulent stinking matter was collected; part of the colon and teguments near the liver being sphacelated, the rest of the guts inflamed, adhering to each other, and beginning to mortify. This man, for the first four days of his distemper, had no great pain; on the fifth and sixth day it became violent; after this he expectorated freely, which gave hopes of his recovery to the

sistence, between a soft mucus slightly adhering to the parts, and a solid fibrous lamella, so closely attached to them, that at first view they appeared to be inseparably united: yet after maceration in water he could peel off the whole of this slough from the smooth, sound, natural membrane which it covered. This observation confirms Haller's opinion, that the membranous adhesions, so frequently met with between the lungs and pleura, are generally formed by the coagulation of the watery fluid which oozes from the exhalent vessels of these parts. See Lin. Prim. Physiolog. No. 262.

twelfth, when he died, contrary to expectation, putting me in mind of a prognostic in Hippocrates,* which seemed to be applicable to his case. (*r*)

Among the natural evacuations which terminated these pleurisies, the most frequent was a plentiful expectoration without hard coughing. When this discharge began early, and continued freely, it kept off or mitigated the dangerous symptoms so liable to come on about the fourth or fifth day, and the fever disappeared about the seventh: but if the spitting did not begin before the exacerbation of the fourth or fifth day, it often proved insufficient to save the patient. If he did recover, the fever seldom left him before the fourteenth day, and frequently continued much longer.

Hippocrates describes the colour and consistence of the expectorated matter, which generally prognosticates death or recovery. (Prænot. Coac.) But at the same time he takes care to inform us, that every sort of spitting which does not remove the pain is bad; and every sort that does remove it is good: the latter part of which remark I have seen verified in some who owed their lives to that evacuation, though the matter was always thin, crude, and ill-coloured.

The next critical discharge to be mentioned is a copious efflux of urine, which soon after being made turns thick, and is either of a pale red, letting fall a

* Quibus autem pleuriticis dolores initio mites sunt, ingravescunt autem quinto aut sexto, facile ad duodecimum usque perveniunt; ac raro illi servantur. Prænot. Coac.

(*r*) The result of this dissection shows the uncertainty of nosology, and the necessity of our remedies being governed by the state of the system rather than by the name and seat of a disease.

lateritious sediment, or milky, as if mixed with laudable pus, and deposited an equal smooth white one. Such urine alone terminated the disease in some; and in many it proved an assistant to the expectoration. (*s*)

Sweats were common in these pleurisies: in the beginning indeed they were oftener symptomatical than critical: but after the obstructions of the head and breast were removed by the evacuations above mentioned, they seldom failed of coming on to abate the fever, and complete the cure. And though they did not always fall out on the critical days, yet it is remarkable, that those which were most profuse, and brought about the greatest changes, which really happened on the 4th, 7th, 9th, 11th, 14th, 17th, and 21st day, much more frequently than on others. This is a circumstance to which I had not always attended, though I find from my notes that it is a true one.

It was common for those diseases to begin with a vomiting and purging of green or yellow bilious matter: but there were few instances where either of those evacuations could be reckoned critical, except in one man who laboured under a dry pleurisy with crude urine, and had got to the eleventh day, with the utmost difficulty, when a purging of porraceous bile came on, and gave a turn to the distem-

(*s*) Nature often employs this mode to relieve herself of redundant fluids, but not always with success. Physicians should follow her in availing themselves of the kidneys as well as the bowels, blood vessels and pores, to discharge violent diseases from the body.

per, which afterwards went off gradually by sweat and expectoration.

One person who had a violent pleurisy in the right breast, and had been four times bled, was seized with a hemorrhage from the right nostril on the seventh day; and after losing four or five ounces, a most profuse universal sweat came on, and put him out of danger. (*t*)

Another way which nature took to relieve herself, was, by translating the morbific matter from the bowels to the surface of the body. In three people the disease was, immediately after its invasion, changed into the erysipelatous fever, described by Sydenham, and was cured as he directs. In seven or eight people the fever and all other complaints vanished the second or third day, an erysipelas appearing on the inferior extremities, which in some fell lower and lower every hour, and soon made its exit by the toes; in others, being more of the nature of a phlegmon, it settled in one of the legs, and formed an abscess, which degenerated into fistulous ulcers, and proved very difficult to be cured. (*u*)

By reflecting upon these cases, and considering that an erysipelas of the bowels would spread from

(*t*) This fact is important, inasmuch as it shows, 1st, that the loss of a very small quantity of blood in the close of a disease is often attended with the same beneficial effects as the loss of a large quantity in its first stage; and 2dly, that a very small excess in the quantity of blood will keep the system above the salutary sweating point.

(*u*) The whole of this paragraph is calculated to establish a belief in the unity of disease. The erysipelas has in several instances preceded the plague and yellow fever. It was in these cases probably brought on by a similar cause.

place to place inwardly, as it does on the skin, I could account for several appearances in the predominant distempers, which at first seemed somewhat extraordinary; such as the inconstancy and mutability of the pains, and the frequent alteration of the pulse and breathing, according as the morbific matter shifted its situation, and fixed upon different organs, the heart, the lungs, the midriff, or containing membranes of the thorax. And I imagined that the treacherous remission, so frequent on the third or fourth day, happened whilst the morbific matter was shifting from the breast; which after being reassumed into the mass of blood, and falling upon the head, or returning again to the lungs, often occasioned tragical effects.

When those pleurisies first became epidemical, their quick progress and uncommon mortality surprised me greatly. I attempted to cure them by bleeding once or twice a day, if the complaints were violent, as I had always used to do in inflammatory fevers: but the remissions in the mornings sometimes induced me to omit the operation; and the cessation of the symptoms, which generally happened about the third day, made me imagine that the danger was over; so that before the patients were blooded above two or three times, the exacerbation came on upon the fourth or fifth day, and defeated all attempts by bleeding, blistering, or otherwise to relieve them.

Those unforeseen events startled me greatly, and led me again to review the whole progress of the disease, its symptoms, and issue. I had observed that some escaped by means of expectoration and

purulent urine, without much assistance from phlebotomy: and considering the periodical revolutions of the fever, the quick transition of the stitches from one part to another, together with the prevailing colour of the blood, as well as that of the spitting, and other excretions, I was apprehensive that those were what authors call bilious pleurisies, which they allege are exasperated by large evacuations:* particularly Duretus,† who exclaims with great vehemence against those physicians who trust principally to bleeding in the cure of those diseases, without waiting for the natural evacuations. These motives induced me to use the lancet with more caution; and to rely chiefly on the speedy application of blisters for restraining the symptoms. But this management proved less successful than the former; and I was convinced in a short time that, instead of too much, too little blood had been taken away in the beginning; having been sometimes misled by the insidious intervals of the disease; at others having trusted too much to the faint attempts which nature made to relieve herself by expectoration and urine; the latter often becoming crude on the fourth day, as the delirium advanced, though it had promised fair on the second or third; the former frequently being checked about that period of the disease, by the immoderate heat of the lungs rendering the matter

* Ballon. Epid. Sparsim. Bianch. Hist. Hep. p. iii. § viii. &c. Bagl. Prax. Med. l. i. c. ix. Lancis. Epid. Rom. c. vi.

† O homines reipublicæ calamitosos atque funestos! ipsam pleuritidem, quæ sua sponte nullius operis indigens cum tali sputo quiesceret, ex eventu reddunt mortiferam.

Duret. in Prænot. Coac.

viscid, globular, and not to be discharged, but with the utmost difficulty.

I then began to bleed more plentifully, and repeated it so as to take away thirty or forty ounces within the three first days of the distemper; and endeavoured, by bathing the legs and blistering them on the third day, to prevent the fatal symptoms from coming on about the fourth or fifth; giving nitre at the same time liberally, and camphire in small doses, to promote the thinner secretions. This method succeeded well in several cases; expectoration and urine being thereby increased: but if they were not increased, the commotions which arose on the fourth, fifth, or sixth day, made it always necessary to have recourse to bleeding again, and more blisters, in order to relieve the oppression of the head and breast; and though for the most part the patients did escape, yet they recovered with difficulty, and continued coughing, spitting, and sweating in the nights, for several weeks. (*w*)

At last, about the middle of March, when the disease raged with the utmost fury, having found that there was an absolute necessity for bleeding largely without delay, in order to preserve life, I began to put in practice the following method of cure, which seldom or never failed, not only in young robust people, but even in those of a more advanced age, (*x*) provided I saw the sick before the end of the third day.

(*w*) The reader is requested to compare this account of the effects of copious bleeding in preventing the "insidious intervals, and treacherous remissions" of the disease mentioned in page 158, and referred to by the editor.

(*x*) Our author was not misled by the supposed weakness of

If I was called, for example, in the morning, the patient was immediately laid in a horizontal position, and bled at the arm until his pains abated, or he began to faint; neither of which commonly happened before 16, 20, or 24 ounces were taken away. If the symptoms continued, I ordered about the same quantity to be taken from the other arm in the afternoon, without regarding the urine, expectoration, or appearance of the blood. Next morning, though there might be a great alteration for the better, yet, if there was the least room to suspect that any obstruction remained in the head or breast, the bleeding was repeated: and by carefully weighing the blood* I found that between forty-eight and fifty-four ounces were frequently taken away during the first 24 hours of my attendance. This sudden copious evacuation commonly procured a cessation of all violent symptoms, and afforded an opportunity to give an antiphlogistic purge the next day. But if the symptoms did not cease, or if the pains and difficulty of breathing returned the day after the purge had been given, or if there was reason to suspect from the headach, giddiness, tingling of the ears, and disturbed rest, that the brain was in danger of being affected, I had again immediate recourse to bleeding, taking away at different times to the amount of 12, 18, or 24 ounces, in the space of a day, either by the lancet or cupping glasses, or both,

old age in the use of the lancet. Experience proves it to be *more* necessary under equal circumstances in that stage of life, than in any other.

* In weighing the blood, I used the island weights, fourteen ounces of which answer nearly to sixteen ounces avoirdupois.

as occasion required; by which means the impending storm was happily averted; and as soon as the commotions were quelled, the purgative was repeated every other day for three times, unless some of the critical evacuations appeared with such visible good effects as rendered it unnecessary.

In this manner I found with Sydenham, that pleurisies of the most fatal tendency might be happily cured in the space of a few days; and with as much certainty as any distemper whatever. And it was no less remarkable to observe, how quickly the sick recovered their usual health and strength, notwithstanding the great loss of blood which they had sustained; while many, who had been bled more sparingly, continued in a languid, infirm state for months, without being able to get rid of the cough and pains in the breast. (*y*)

(*y*) The copious bleeding used with so much success by our author in the treatment of bilious pleurisies is founded upon the system labouring under two distinct and violent morbid actions, the one in the lungs, and the other in the stomach and liver. The same disease yielded only to copious bleeding in the winter of 1794-5 in Philadelphia. Nearly all died who were not bled twice as much as in a single pleurisy, or inflammatory bilious fever. This copious depletion by the lancet not only saved life, but prevented, according to Dr. Sydenham, a distressing and dangerous cough. Our author discovers his usual good sense in continuing to bleed, while the symptoms of the disease retained their early violence, without any regard to the state of the urine, expectoration, or the blood. Even the pulse in such cases should not regulate the use of the lancet. Let it not be supposed from what has been said, that the bilious pleurisy appears in no other form than that which has been mentioned. It sometimes assumes in the United States, the symptoms of the typhoid and typhus states of fever, in the former of which bleeding is forbidden, and in the latter, bark and opium are the most effectual remedies.

Hitherto I have only mentioned the capital remedies made use of in the cure of those distempers. But it may not be improper to take notice of some other collateral helps, which were generally used in the several ways of treating them above described.

In the first place, the sick had warm barley water with oxymel for common drink; and nitrous antiphlogistic medicines in the first days of the distemper; their bellies being kept open with clysters.

Oily linctuses were exceedingly useful in allaying the cough; and small doses of anodynes were often necessary, both for that purpose, and to procure sleep when the height of the distemper was over.

If the pleurisy began with a bilious vomiting, it was expedient to promote that evacuation by large draughts of warm water, in order to carry it off the sooner.

To ease the pains in the breast the large leaves of the opuntia, toasted in an oven, and split through the middle, were frequently applied: these being thick and succulent, retain the heat a long time, and produce all the good effects that attend anodyne emollient cataplasms and fomentations; as I have frequently experienced in tertian fevers, dysenteries, and other diseases with inflamed bowels, as well as in this disease, since I first learned the virtues of the leaves from the natives of Minorca.

After bleeding twice or thrice, blisters laid upon the part affected were often successful in removing obstinate stitches: but nothing affords such certain and immediate relief as the scarificator and cupping glass; insomuch that among the many trials which I have had of them, I do not remember an instance

where they did not either carry off the complaint entirely, or mitigate it considerably: but my glasses were both wider and deeper than those commonly used in England.

The phrensies and anginas, which now and then appeared during this constitution of the air, required the same method of cure: and as to the chincough, which was so fatal to children, the chief difference between it and the pleurisy seems to have been, that in one the morbific matter was thrown into the vesicles of the trachæa, in the other it stagnated in the extremities of the pulmonary arteries.

During the same period of time catarrhal fevers appeared among the adults, attended with coughs, pains in the head and bones, and frequently a delirium; some of which suddenly terminated on the seventh day by profuse sweats; but most of them had partial crises sooner, and went off by degrees. When large bleeding was neglected in the beginning, they were liable to degenerate into pleurisies. This was likewise the case with the tertian fevers; and indeed it was remarkable that not only all acute diseases of this season, but even accidental hurts and bruises required more plentiful evacuations than ordinary; so inclinable was this constitution of the air to promote inflammations. (z)

I shall conclude this chapter with a paragraph or two from some letters, occasioned by the pleurisies of which we have been speaking, in order to confirm what has been said on them by the testimony of my

(z) Our author discovers his education in the schools of Hippocrates and Sydenham by admitting an inflammatory constitution of the atmosphere, and its influence upon all diseases.

friend Dr. Font, an eminent physician of Ciudadella in Minorca, who has deservedly enjoyed a most extensive practice for upwards of thirty years.

Didaco Font, M. D. G. C. S.

—Novus annus funera densa produxit, grassante febre inflammatoriâ, quæ caput et organa respirationis potissimum afficit, modo pleuritis; modo peripneumonia, interdum phrenitis, interdum paraphrenitis adpellanda. Hic morbus, ut vehemens, largis et repetitis venæsectionibus, cum interpositâ catharsi, in herba felicissime jugulatur. Complures liberale sputum, sine multa sanguinis jacturâ, periculo eripuit. Nec desunt, quibus urinæ purulentæ fluxus diu perseverans, saluti fuit. At, nisi istius modi auxilia mature accedant, væ ægris! nam postquam morbus per triduum impune sæviit, altasque egit radices, fero plerumque medicina paratur; et neque venæsectiones, neque epispastica, neque cucurbitulæ, neque pectoralia tantopere decantata, impedire valent, quo minus, juxta Hippocratis effatum, " *Septimo die vel celerius succumbant, aut mente læsi, aut orthopnœa suffocati.*"

A te itaque peto, vir experientissime, ut dato otio, his quæsitis responsum præbeas.

Annon pleuritis morbus anniversarius in hâc insulâ, et quibus mensibus?

An semper febrem continuam, cum celeri pulsu, acri calore, &c. comitem sibi adsciscat? An potius febri periodicâ remittente conjungatur?

Nonne tutius est, morbi resolutionem per venæ-

sectiones, quam primum tentare, quam coctionem et crisin naturæ præstolari?

Ubi resolutio tentanda est, quâ mensurâ et quibus intervallis cruorem detrahere conveniat?

Datum Magone tertio die Maii, S. V.
anno M,DCC,XLVI.

G. C. Diadacus Font, S.

—Anniversarius hac in parte insulæ morbus est pleuritis, hiemeque viget, quantum ex usu observavi; et ubi rigida hyems plus justo prolongatur ad medium aut finem veris excurrere solet; immo anno 1730, quamvis solito modo procederent tempestates, memini hunc morbum, cum aliis inflammationibus internis, magnam stragem fecisse; ægris vel mente læsis, vel orthopnæâ suffocatis.

Pleuritis non semper febrem acutam continuam habet adjunctam cum siti, calore, et celeri pulsu: imo potius in ipsius principio febris est fere semper mitis; pulsus quoad celeritatem, parum distat a naturali, calorque non est nimius, nec mordax; et in multis propensionem ad somnum observavi. Nequaquam vero, licet ita ingrediatur, leniter tractanda est; sed eodem modo ac si cum vehementi febre invasisset.

Præterea, pleuritis sæpe sociatur febre quæ periodice remittit, et intenditur, modo quotidie, modo de tertio in tertium.* Et aliquando sola febris tertiana intermittens adest; sicuti observavi in quatuor ægris, quorum unus in initio septimi paroxysmi e vita decessit.

* Vide Galen. Avicen. & Mercurial apud Bianch. p. iii. Schol. 25. & Spigel. de Semitertian. cap. iii.

Quoad curationem; ubi tempestive vocatus sum, primo scil. die, vel secundi initio, depositâ morâ, sanguinis circiter quatuor libras, partitis vicibus, nuchthemeri spatio, si æger robustus sit, detrahere jubeo; quâ subitâ et copiosâ evacuatione morbus quandoque in herbâ resolvitur. Sin vero persistat, ante diem quartum, totidem fere sanguinis libras, partitis vicibus, noviter extraho: et similiter prosequor, licet ante diem quartum magna et notabilis omnium symptomatum remissio contingat. Quæ quidem remissio talis et tanta esse solet, ut æger et reliqui rem jam in tuto putent; et ipse olim ita existimavi, donec infausti eventus aliter docuissent. Quippe veniente die quarto, aut quinto, supra modum exacerbantur symptomata, et furente novâ procella, æger qui mox convaliturus sperabatur, orco traditur: quod nullâ aliâ methodo quam supra præscriptâ præcavere potui; diluentibus interim, expectorantibus, clysteribus, cucurbitulis et epispasticis, pro ratione symptomatum, diligenter adhibitis; ut et purgantibus, post septimum diem. En methodus medendi, quæ meis et ægrorum votis respondet! Ex centum qui corripiuntur, nonaginta, aut in initio resolutione, aut postea manifestâ crisi servantur. Quæ crisis, aut per sudorem, aut per expectorationem, aut per urinæ profluvium, modo sanguinolentæ, modo puriformis, aut per diarrhœam perficitur; adjutis vitæ viribus, sanguinis evacuatione, et supra memoratis remediis legitime exhibitis. Quibus inter initia spretis, mors ut plurimum succedit.

Datum Civitellæ Maii 26, S. N.
anno M,DCC,XLVI.

CHAPTER VII.

OF THE SMALLPOX.

THE smallpox were twice epidemical in Minorca, while I resided there, viz. in the year 1742, and 1746. Without entering into a minute description of the disease, I shall only endeavour to give a general view of its nature and effects, in each of those years; from which it will appear how widely the infection of one differed from that of the other.

About the middle of March 1742, the smallpox broke out in Mahon, to the great consternation of the natives, who had not seen them since the year 1725, but well remembered the destruction which they then occasioned. The contagion quickly spread about, and was soon conveyed to the other towns and villages; insomuch that before the end of April it prevailed in every part of the island. As it attacked almost all who were under seventeen, and many of a more advanced age, the sick were so numerous during May and June, that every house might be called an hospital. About the end of July the disease suddenly disappeared, most of those who were susceptible of it having by that time undergone it.

During the first six or eight weeks the distemper was favourable, and seldom proved fatal: but its virulence increased with the heat of the weather; so

that in June and July it was not uncommon, both at Mahon and Ciudadella, to bury ten or twelve of a day. Nevertheless, in proportion to the numbers, not many died; and what mortality there was, happened chiefly among children at the breast and the common soldiers.

Among such multitudes of sick, all the different species of smallpox, described by authors, were sometimes met with: but both the distinct and confluent had a nearer resemblance to what Sydenham calls the anomalous, than to the regular smallpox. For though the fluxed kind commonly appeared on the second or third day, it was often the fourteenth or seventeenth before the roughness to the touch showed that those on the face began to turn; and on the legs and arms they frequently continued fresh till near the thirtieth. In these kinds of smallpox the secondary fever raged violently between the fourteenth and twenty-fourth day; and almost all who perished by the disease died on one or other of the intermediate days.

The constancy of nature in promoting one or other of the common evacuations, whereby part of the morbid matter was discharged, contributed to save great numbers; for a plentiful salivation commonly appeared with the eruption, and continued till the suppuration was completed, not only in adults, but in those of all ages; even in children at the breast, whose want of sense to spit freely, was probably the chief cause of their suffering more than others. About the seventh day or sooner the swelling of the face came on; and it was regularly succeeded by a tumefaction of the hands, and sometimes of the

feet. But it was most remarkable in this epidemical smallpox, that a moderate looseness commonly appeared, as the pustules began to dry, and continued till the skin was in some measure cleared of the thick black crust that covered it; by which means the defect of perspiration was supplied, the symptoms of the secondary fever were restrained, and many people were happily rescued from the jaws of death: whence we may learn, how reasonable it is to give purgatives in this stage of the disease, according to the rules laid down for that purpose by Drs. Friend and Mead.

In December, 1745, the smallpox were brought from Constantinople by one of his majesty's ships, and the following year made a slow but fatal progress over the whole island. During the spring of 1746, they confined themselves to St. Philip's Castle, without reaching Mahon, though they are but two small miles asunder. In the summer and autumn they were frequent in Mahon and the neighbouring parts. Then they travelled northward to Ciudadella, and disappeared in the spring; having carried off almost all the children who survived the chincough and summer fevers of the year 1746. It was however very remarkable, that the longer the infection continued in the island, the milder it became; so that there was much less mortality in the northern parts than in the southern, where it first broke out.

Whilst the distemper raged at St. Philip's Castle, as I lived at Mahon, I saw but few of the sick; but I was informed by the physicians who attended them, that the pustules were commonly of the confluent kind, and often intermixed with purples; that

they seldom rose or filled well, but continued either hard like tubercles, or quite empty, or had a small quantity of ichor, with a black spot in their middle, and frequently seemed to wither before they were ripe; that the fever, instead of going off with the eruption, increased as the disease advanced, being generally accompanied with a coma, delirium, difficulty of breathing, incessant vomiting and loathing of food; that the face seldom or never swelled, but about the time that this ought to have happened, a soreness of the mouth or throat gave great uneasiness, the skin separated from the inside of the lips, and the breath became very fetid; that three fourths of the infected, in spite of all that could be contrived for their preservation, perished between the sixth and the fourteenth days of the fever. And the most of those who survived remained blind, consumptive, or lame with caries of the bones, sordid ulcers, &c. so that this disease approached nearest to the plague of all which had been known in the island.

From those accounts (which were too well confirmed by my own experience afterwards) I conjectured, that the extraordinary mortality of the disease was owing, partly to the variolous matter abounding so much in the blood, that the skin was not capable of receiving the whole quantity; partly to the peculiar disposition of the air at that time, which, as we have seen in the former chapter, rendered the head and breast extremely liable to inflammations. Hence I imagined that many of the sick died of a phrenitis or peripneumonia, on the sixth, seventh, or eighth day, before the pustules had time to ripen; while in others, the pustules having

terminated in a gangrene, the corrosive ichor received into the blood proved fatal about the end of the second week. It appeared to me that the most probable way of averting those disasters would be, to make large evacuations in the first days of the distemper, and to replenish the vessels with mild antiputrescent liquors; by which means, either the eruption would be prevented, or the pustules would be fewer in number; or at least disposed to suppurate rather than mortify. This method of treating the smallpox is countenanced by Ballonius, (Ephem. & Epid. l. i.) and strongly recommended by Boerhaave, (Aph. 1393.) who probably took the first hint from Rhazis;* and if ever so bold a practice could be justified, it was in such a pestilential kind as this, which destroyed almost all who were left to nature, or managed in the common way. These considerations, and the visible good effects of bleeding and purging largely in the predominant pleurisies, gave just cause to expect some benefit from a similar method in the cure of the smallpox; which apprehension was confirmed by the following accident.

A young man, about twenty-six years of age, was seized on Wednesday, May 21, between seven and eight o'clock in the morning, with a coldness and shivering, which was soon succeeded by common feverish complaints, and a pain under his left breast, straitening respiration. On Thursday morning, when

* Si antequam apparere incipiant variolæ, ægrum medicus inveniat, minuatur sanguinis multitudo—Venter autem si strictus fuerit, infusiones quotidie in potu sumantur, ex hoc enim aut omnino prohibebitur pustularum egressio, aut si quid egressum fuerit, parvum erit. Vid. Op. Venet. de Febr. cap. xviii. p. 109.

I first visited him, imagining the case to be a pleurisy, I ordered him to be treated accordingly. In consequence of which seventeen ounces of blood were taken away immediately; twenty ounces more in the afternoon, and fifteen on Friday morning; his belly was kept open by clysters; his drink was barley water, to which oxymel and nitre were added; and sometimes a decoction of tamarinds; and leaves of the opuntia were frequently applied to his side. On Friday forenoon his pains were easier: but he complained greatly of an inclination to vomit, and after drinking warm water threw up a considerable quantity of bilious matter. In the afternoon an eruption was discovered all over his body, which, from the appearance of it on his face, and its being attended with a ptyalism, I suspected to be the confluent smallpox; and Dr. Segui, an eminent physician of Mahon, who was consulted on this emergency, confirmed my opinion. Our patient was blooded thirteen ounces on Friday evening; and afterwards drank plenty of warm water, in order to carry off his vomiting; a clyster was likewise injected, his head shaved, his whole skin cleaned and washed. On Saturday morning the fever being moderate, and the eruption thick all over him, he took a mild purge, which procured six or seven stools, and a grain of opium was given at bed time. On Sunday morning, after a restless disturbed night, his spitting having ceased, he complained of his throat being so sore that he could scarce swallow, and that the stitch had moved from his left breast, and fixed about the lower ribs in the right side. These symptoms induced us to bleed him a fifth time, to the quantity of eleven ounces, which were

of a crimson colour, as all the rest of his blood had been, without any sizy crust. In the afternoon he spit considerably, slept sound, was free from pain; and after a good night's rest, on Monday morning his purge was repeated, which gave six or seven motions, without checking the salivation. After this all farther evacuations were laid aside (except clysters to keep the belly open); the pustules, which were small and numerous all over him, began to fill with good matter, and every thing went on according to our wish. On Tuesday morning his face swelled; but abated on Thursday afternoon, the pustules beginning to dry; while his right foot swelled, and became painful, the ptyalism still continuing. Monday morning, June 2, his skin being dry every where, he took physic, which was repeated on the Friday following. He soon gained strength, and still enjoys a good state of health.

The next patient whom I attended in this distemper was a Jew's daughter, about five years of age, to whom I was called on Saturday morning, May 24, when the pustules were just beginning to appear, she having been feverish since Wednesday morning. She was thrice blooded by my order, in the space of twenty-four hours; four ounces being taken away each time, she was strictly kept to the cooling regimen; clysters were frequently injected; and she commonly took a paregoric at night. The pustules were low, small, confluent, and attended with a considerable salivation. Her face swelled on Tuesday, her hands the day following, and her feet on Friday. On Sunday, June 1, the pustules began to dry on her face. On Monday she was

purged, and gradually grew strong. This and the former patient were the first two in Mahon, who at that time recovered of the smallpox.

About the end of May, and the beginning of June, three or four adults were attacked with violent feverish symptoms; and as they never had the smallpox, it was suspected that they had catched the infection. They were all treated in the same manner with the man, whose case has been already related, and in six or seven days got perfectly well without signs of eruption. Nor did any of them take the smallpox afterwards. (*a*)

Elevated with this success I began to flatter myself that I had now hit upon a method of cure which would generally answer: but it was not long before experience convinced me of my mistake.

A young man, about twenty-one, was seized at noon, Monday, June 16, with feverish symptoms, and a violent pain in his stomach, loins, and left breast. He lost fifteen ounces of blood on Tuesday morning, seventeen ounces the same afternoon, and fifteen on Wednesday morning. All this day he was sick and squeamish, though he drank much warm water, and vomited up bile along with it. He passed an uneasy night, with great pain at his stomach and

(*a*) The same remedies have lessened the eruption where they have not annihilated the smallpox. It was from observing these effects of those remedies that Dr. Boerhaave and Dr. Hillary supposed a specific existed which would destroy the virus of that disease in the same manner that mercury is supposed to destroy the virus of the venereal disease. For awhile the same medicine was supposed to act in that way in preparing the body for the smallpox by inoculation, but from similar advantages having attended the use of purges and other evacuations, it appears that the mercury acts upon the body in a manner equally mechanical.

in the small of his back, and on Thursday morning took a mild purgative, which operated several times upwards, and procured six or seven stools. On Friday morning the smallpox began to appear in his face; his stomach was somewhat relieved, but the pain in his back continued as bad as ever; his mouth and throat were very sore; and I was informed that he had been delirious all night. Twelve ounces of blood were drawn, which was red and florid, like all the rest which had been taken. In the afternoon the pain of his back being severe, the part was cupped and scarified, and a clyster was injected, which brought away much hard stinking excrement. Notwithstanding this he got no relief; the raving, vomiting, and restlessness increased, the pustules never filled, his mouth was ulcerated, and his breath became offensive to the smell. On Sunday morning he lay quite stupified and senseless; black spots appeared in the middle of the pustules; and he expired that day about noon. Upon opening the body nothing extraordinary was found, except a monstrous large gall bladder full of thick, green bile, and slight signs of inflammation in the villous coat of the stomach, the small guts, and pia mater. (*b*)

A young lad of fifteen or sixteen years felt some difficulty of breathing, and a pain in his back on Tuesday noon, June 24. He concealed his illness to Thursday, when he complained much of heat, thirst, and headach, sickness at his stomach, and a painful oppression on both sides of the thorax. Eleven ounces of blood were taken on Thursday morning,

(*b*) It would seem from the morbid state of the gall bladder and stomach, which occurred in the above case, that even the smallpox in Minorca partook of the bilious endemic of the island.

eight ounces that afternoon, and ten next morning; clysters and diluent drinks were used, &c. None of his blood appeared sizy; and before the last ten ounces were taken, something like the smallpox were seen on his face. But the eruption never advanced; and on Saturday morning purples came out all over him. He then began to use the bark every two hours, and took in all about six or seven drachms. In the mean time he was very delirious, vomited often, and breathed with great difficulty. On Monday morning he was seized with a hemorrhage from the nose, which continued till seven at night, when he died with black spots all over him.

Soon after this a robust middle-aged man fell sick, and was treated in the same way; on the second and third days of the disease he lost forty-nine ounces of blood; on the third day the eruption began to appear; on the fourth he bled some spoonfuls from the nose; and purple spots broke out all over him. The smallpox never rose; he raved incessantly, though he was afterwards twice blooded, and had blisters applied. He died on the eleventh day. (*c*)

These unfortunate cases made me lay aside large evacuations for the future, and content myself with endeavouring to alleviate the symptoms in the com-

(*c*) The editor suspects the author was restrained from bleeding as much as these two cases required, by the presence of petechiæ, and by the blood not putting on a sizy appearance. Hundreds have perished from the petechiæ being supposed to mark a putrid, instead of a highly inflammatory disease, and thousands have perished from an ignorance that there are several states of fever which indicate a higher and more dangerous grade of disease than sizy blood, and in which the lancet has been laid aside. That more bleeding was indicated in the two last instances is evident from the hemorrhages from the nose, which took place in each of them.

mon way, by moderate bleeding, blistering, anodynes, bark, and cordials, according as they were indicated. But in spite of all my attempts to cure them, more perished than recovered. Nor could I find that any other practitioner had better success, until time had corrected the malignity of the disease. In short, this epidemical smallpox sufficiently verified the English proverb, "That there is one sort in which the nurse cannot kill, and another which the physician can never cure." And since it is a matter of mere chance, whether the best or the worst kind is got in the natural way, it is evident what great honour is due to the memory of those gentlemen who first introduced the practice of inoculation into this kingdom, where the safety and security of it has been confirmed by the experience of thirty years.

This is all that I have to offer to the public with regard to some of the most destructive distempers incident to mankind, whose nature and effects my situation afforded many opportunities of observing. I have related the failure as well as the success of my endeavours to cure them, with that fidelity required in affairs which so nearly concern the lives of our fellow creatures; and if these pages should be found serviceable to others, by pointing out what will prove hurtful or beneficial in similar cases, I shall not only think the pains which they cost me well bestowed, but esteem it a singular happiness that fortune put it in my power to contribute so far to the welfare of society.

Hoc opus, hoc studium, parvi properemus et ampli,
Si patriæ volumus, si nobis vivere cari. HOR.

FINIS.

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