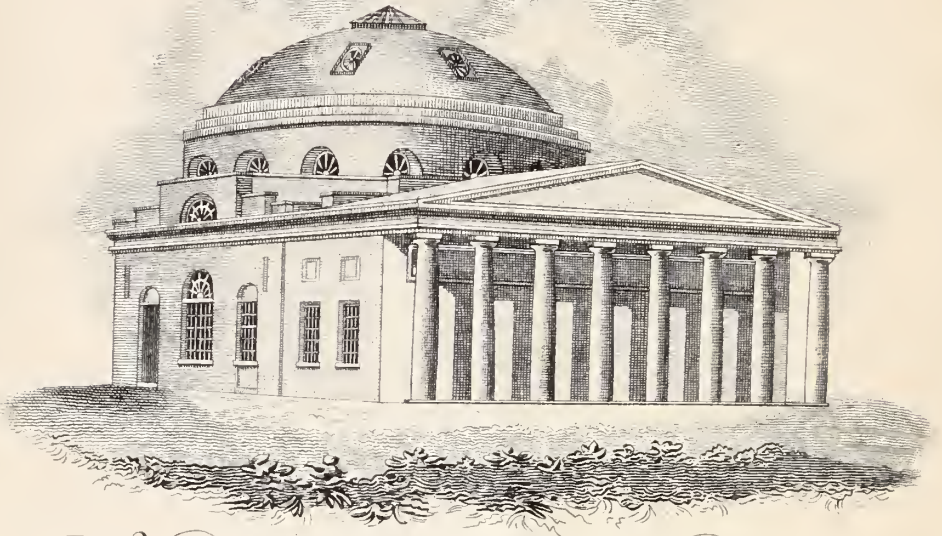


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HISTORY AND TREATMENT
OF THE
ENDEMIC BILIOUS FEVER
OF THE
Eastern Shore of Maryland.



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CLINICAL APHORISMS:

A

CONTRIBUTION

TOWARDS THE

HISTORY AND TREATMENT

OF THE

ENDEMIC BILIOUS FEVER

OF THE

Eastern Shore of Maryland:

DESIGNED FOR THE USE OF

THE YOUNG PRACTITIONER,

BY PEREGRINE WROTH, M.D.

HONORARY MEMBER OF THE PHILADELPHIA MED. SOC.

Quid verum atque decens euro et rogo, et omnis in hoc sum:
Condo et compono quæ innox deprimere possim.—Hor.

Founded 1813

CHESTERTOWN, MD.

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P R E F A C E .

WITH unfeigned diffidence the author of this manual ventures to lay before his professional brethren the first-fruits of a long course of experience. Without aspiring to the distinction of a systematic writer, he has presumed to think that an epitome of clinical practice in that fever which has so long been the scourge of the peninsula, was a desideratum with the profession: and, while he deeply laments that no one better qualified has encountered the task, he ventures to hope that *his* labor may not prove altogether in vain.

It may indeed be found that every practitioner of ten years' standing is already acquainted with every practical precept in this small volume. For such it is not intended. It is for the young, the uninitiated, who cannot draw on the resources of experience, and who will search in vain in medical libraries for a work which details, with sufficient distinctness and minuteness, the daily routine of professional procedure.

To this day his memory recurs, with painful sensibility, to *his* want of such a guide in his early years.

But while it is explicitly and candidly avowed that this work is not designed for the adept, the author hopes that it will be found not altogether unworthy of his attention. He has sought to ground his clinical instructions on that *only foundation of sound practice, the pathological condition of the system*. The theoretical visions of the older writers, to many of whom the gratitude of future ages will be most justly rendered, will find no place in a work which is founded on observation.

So much has been written on bilious fever, that a new work on that subject would seem to be unnecessary and uncalled for by the profession. The shelves of our libraries are already loaded with systematic works, and the medical periodicals of the day teem with essays from every miasmatic district of the middle and southern states. The author has, notwithstanding, ventured to decide that a small practical compendium, a clinical vade mecum, a book of daily reference, might be useful to the youthful practitioner. It will serve as a travelling companion to a person unacquainted with the road ; a guide which one may

carry in his pocket, and, in his visits to his country patients, may consult on any emergency. It may stand in the place of an elder brother in the profession, with whom he may, on all occasions of difficulty or doubt, hold a brief consultation.

The author does not claim originality in all his etiological views, his pathological opinions, or his practical deductions. He has unscrupulously availed himself of the assistance of preceding writers, where such could be found suitable to his purpose; and he has thus, without borrowing much, rendered them tributary to his design. But, should striking coincidences in theory or practice be discovered, let it not be too hastily and uncharitably decided that a palpable plagiarism has been committed. Innumerable truths have long become the common property of the profession; and a modern writer of experience might be easily detected in inculcating doctrines which had been taught and published long before, though he had never heard the names of their authors.

The modesty of its pretensions, it is confidently anticipated, will shield this little book from severe criticism. The incessant labors of a country practitioner have afforded no time for polishing; and an

unpractised pen cannot be expected to possess the power of arresting and fixing the attention by a display of fine writing. The hope may be indulged that the importance of the interests involved in the subject will insure a *fair* examination. From such the author will not shrink ; nay, he invites it, sincerely desiring that all errors may be detected and corrected.

The author begs that it may be distinctly understood that he uses the name of “ bilious fever ” only in compliance with common custom. In numerous cases of our autumnal endemic, the hepatic system will not be found to be the seat of the disease ; and, from first to last, no bilious symptoms are seen to exist. With much greater propriety the endemic of the peninsula might be called *gastric* fever. During the progress of the disease other organs generally become involved, and symptoms are developed which indicate that the brain, the intestines, and the glandular system participate in the morbid affection.

It is not without fear and trembling that the author, unknown beyond the limited circle of his daily labors, thus sends forth his first-born into the world, uninvited, unpatronized. He does not profess to be sto-

ically indifferent to censure or applause. However unqualified for the task, his design is good ; and if his little work shall be the instrument of saving one human being from the grave, he will receive an ample reward.

THE READER IS REQUESTED TO CORRECT THE FOLLOWING

E R R A T A .

- Page 28, in the Latin note, for "quo vero" read "quæ veræ."
37, 2d line from the top, for *Endiometer* read *Eudiometer*.
37, in the note, 7th line, for *Simoris* read *Simois*.
37, in the Greek quotation, 1st line, for *κως* read *καϊ*.
37, the reference † to page 29 should be to page 30.
44, bottom line, for *Progressis* read *Prægressis*.
45, 3d line from the top, for *functionis* read *functiones*.
45, 8th line from the top, for *exacubatione* read *exacerbatione*.
47, 13th line from the top, for *lucs* read *lues*.
47, 18th line from the top, the same error.
48, place a comma (,) after *nervous* in the foot note.
50, in the quotation from Lucretius, for *Cyenis* read *Cyenis*.
55, in the note, for *exciting* cause read *predisposing* cause.
78, bottom line of the heading, for *ideopathic* read *idiopathic*; and for *uteritis*, read *enteritis*.
92, 4th line from the top, for *nocivum* read *noxium*.
101, 16th line from top, for *head* read *had* and place a comma (,) after *arms*.
142, 1st line, for *miasmata* read *miasmate*.
151, 5th line from bottom, for *clothes* read *cloths*.
172, bottom line, for *glazy* read *glairy*.
183, in the **R.** at bottom, for 9. i. f. read q. s. f.
184, in the **R.** at bottom, same error.
184, † **R.** 3d line, for *ft.* read *gt.*
187, under CHAPTER IX. erase "Congestive State of Bilious Fever."
201, 4th line from bottom, for *glotis* read *glottis*.

10869

INTRODUCTION.

Topography of the Eastern Shore of Maryland.—Rivers.—“The Forest.”—Timber.—Topographical features of Kent county.—Soil and productions.—Shell-banks—their origin—application to agricultural improvement.—Marl.—Green and black sand—containing shells.—Nature of the soil and order of the strata—mould or decomposed vegetable matter, clay and sand.—Mineral ingredients—phosphate of iron, lignite and pyrites.—Streams of water, meadows and mill ponds, sources of miasmata.

As a step preliminary to the consideration of the nature and treatment of the endemic autumnal fever of the Peninsula, it is deemed necessary, for the information of those not resident in that region, that something be said concerning its topography, and more especially of Kent county, the theatre of the author's practice.

The country comprised within the Delaware bay on the east, the Atlantic ocean on the south-east, the Chesapeake bay on the south-west and west, and a line drawn from Frenchtown to a point between Wilmington

and New Castle in the state of Delaware, on the north, is known by the general name of the Peninsula. This country embraces all the counties on the eastern shore of Maryland, with the exception of a part of Cecil, Kent, Sussex, and a part of New Castle county in the state of Delaware, and the counties of Accomac and Northampton in Virginia.

Throughout its whole extent it is watered by broad and deep rivers, the principal of which are the Sassafras,* the Chester,* Wye, Choptank, Nanticoke, Wicomico, and Pocomoke, besides some others of inferior note. In all of them the tides of the Chesapeake, of which they are tributaries, flow almost to their sources and render them navigable by vessels of considerable tonnage, amply sufficient for all purposes of commercial intercourse.

The face of the country, with little variation, presents the aspect of extensive plains, rising sometimes into hills no where exceeding the height of a hundred feet. From the

* The aboriginal names of these rivers are Toc-woc and Ozenie.

head of the Sassafras river an almost unbroken forest extends in a direction nearly south down to the southern border of Maryland, and is filled with valuable timber, the various species of oak, white, black, red, Spanish, willow and swamp oaks, maple, poplar or tulip tree, cypress, &c.

Kent county in Maryland is bounded on the north by the river Sassafras, on the south by the Chester, on the west by the Chesapeake, and on the east by a line which separates it from Kent county in Delaware. The head waters of the Sassafras and Chester approach within two or three miles of each other; and the whole county, thus peninsulated, is intersected on three sides by broad and beautiful creeks, which are navigable by grain boats almost to their heads. The principal of these creeks are—

Langford's bay,	} flowing into Chester river;
Gray's Inn,	
Swan,	
Tavern, and	
Morgan's creeks,	

Still-pond,	}	emptying into Chesapeake bay;
Churn,		
Worton, and		
Farley creeks,		
Turner's and	}	which are tributaries of the Sassafras river.
Lloyd's creeks,		

The face of Kent county offers to the eye an agreeable undulation of surface, the highest hill not exceeding, it is believed, a height of sixty to eighty feet above tide-water. The whole county, now affording a pleasing variety of woods, meadows, and arable land, was originally covered with a dense growth of red, white, black, Spanish, and other species of oak; with chesnut, walnut, hickory, ash, white and yellow poplar, pine, and other trees of large size. It is believed that no part of the Atlantic states bore a finer growth of timber.

The soil, deep in the lower and thin in the higher grounds, affords the usual variety of fertility and sterility. An injudicious system of husbandry perseveringly pursued for many generations, successive crops of tobacco and wheat, oats and Indian corn, have exhausted a

soil not originally of the first quality. And when it is considered that few attempts have been made, until recently, to regenerate the soil by the grazing system, it is a subject of astonishment that the agricultural productions are still not only sufficient to sustain the population, but to afford a large surplus for foreign markets. The lands on the water courses are generally of good quality and very productive.

Little attention has been given, until within a few years, to those numerous and extensive shell-banks which are found on the shores of the Chesapeake and its branches, and which time accumulated around the wigwams of the aboriginal race. Many of these banks are so deep and wide as to lead some to suppose that they must be of submarine formation. But the absence of all shells but those of the oyster, the fact that they are all open, the occasional presence of the bones of the deer, bear, opossum, and other land animals, the intermixture of black vegetable mould, and the fact that the arrow points and hatchets of the aborigines,

made of silex, are frequently found in them, sufficiently prove that these extensive collections of shells were not formed under water. The magnitude of these banks will cease to surprise us when we reflect that the whole aboriginal population from the Delaware bay to the Alleghany mountains, during a period of more than a thousand years, drew their subsistence entirely from the woods and waters by hunting and fishing.

The more enterprising of our farmers have recently given their attention to these shells with a view to the improvement of their lands, and great quantities of them have been calcined and applied with beneficial results. To some, besides furnishing the necessary supply for their own farms, they have become a source of considerable revenue.

In other parts of the peninsula immense and inexhaustible beds of marl have been discovered and their value duly appreciated. In many portions of Queen Anne's, Caroline, and Talbot counties, the worn out soil has been completely renovated and fertilized by these calcareous deposits; and as the spirit

of improvement is now rapidly advancing, in consequence, probably, of the institution of agricultural societies, the time is confidently anticipated when our peninsula will be as remarkable for the exuberance of its agricultural productions, as it has always been for the intellectual and moral worth, and the proverbial hospitality of its inhabitants.

In Kent county there is but little marl of a calcareous nature, and when found on the shore of Chester river, a few miles below Chestertown, it is so intermixed and embedded in ferruginous sandstone as to be of little value. But the State Geologist, Professor DUCATEL, has lately invited the attention of our farmers to their inexhaustible fields of green sand, and micaceous black sand, which have been found to contain potash. In the black sand, large beds of which have been discovered and worked to profit on the farms bordering on Lloyd's and Churn creeks and near the head of Sassafras river, numerous univalves have been found. Whenever used, these silicious mixtures have been

proved to be useful in promoting the growth of corn and the grasses.

In most parts of the peninsula or *Eastern Shore*, as it is frequently called, and more especially in the lower counties, the soil is light and friable, showing a predominance of silicious earth in its composition. There are, however, districts even in those counties where the soil is stiff, compact, and argillaceous. In all places where the shores of rivers, the washing of ravines and the sinking of wells have afforded opportunities for geological examination, we discover successive strata of vegetable mould at the surface, clay of different colors and of sand, in which are embedded silicious pebbles or boulders of various sizes.

In the bold and precipitous shores of the Chesapeake in Worton hundred, which rise to an elevation of twenty to forty feet, we see these strata distinctly marked. At the surface is a soil of decomposed vegetables, reposing on a bed of clay; and beneath it alternate strata of sand and clay of various colors. At the depth of a few feet from the

surface there is seen a stratum of ferruginous clay, from ten to fifteen feet thick, very ponderous and unctuous to the feel, and richly impregnated with oxidated iron. In the stratum of bluish clay, known by the common name of "fuller's earth," are found small veins of phosphate of iron and larger quantities of lignite and pyrites. The former is seen frequently in masses resembling the branches of trees, in the crevices of which are deposited crystals of pyrites. The latter is found in pieces of irregular form, and varying size, beautifully chrysalized in truncated tetrahedral pyramids. It varies in color from the brilliancy of silver to a copper hue; and when long exposed to atmospheric influence, effloresces and falls to powder. The late Professor WOODHOUSE, of the University of Pennsylvania, to whom I presented specimens in 1806, found by analysis, that it was composed of iron, sulphur, and argillaceous earth.

Throughout the peninsula there are numerous streams of water, bordered by low grounds and meadows, throwing up a dense

growth of alder, magnolia, hazel, spice wood, &c. &c., and running into the rivers and creeks, on the margins of which are salt marshes of considerable extent. These are generally inundated by the diurnal tides, though some have received such alluvial additions from the higher grounds, that they are overflowed only at the time of the vernal and autumnal equinoxes, or after the prevalence of high south winds, which force the waters of the Chesapeake and its branches towards their sources. On the meadows and swamps in the vicinity of the fresh water streams, we see, even in dry seasons, a growth more or less abundant, of vegetation; by the annual decay of which, together with the putrefaction of myriads of insects and reptiles, the air, in the summer and autumnal months, becomes highly charged with offensive and deleterious effluvia.

On every stream of sufficient magnitude, dams have been erected with the view of creating water-power for mills; and large ponds have been formed, in which a dense growth of underwood undergoes a slow but

sure decomposition. These reservoirs of stagnant water serve as receptacles for the decayed and decaying vegetable matter, washed down from the high and low grounds in the vicinity. Thus being exposed to the influence of a powerful sun, decomposition takes place on a large scale; pestilential effluvia are evolved and whole neighborhoods are prostrated by an unseen enemy.

Having given this brief and imperfect sketch of the topographical features of the peninsula, I proceed to offer a succinct account of the causes, nature and treatment of our endemic bilious fever.

Chapter I.

OF THE CAUSES OF FEVER.

Causes of bilious fever.—Rush's theory erroneous.—Interval between cause and effect.—*Proximate* cause *not* "morbus ipse." Exciting and proximate causes synonymous and identical.—Remote causes.—Malaria the sine qua non.—State of predisposition.—Exciting causes.—Excess in eating, &c. &c.—Opinions of Cullen and Smith.—Origin of malaria or miasma.—Nature unknown.—Vernal intermittents, cause of.—Opinion of Professor Potter.—Periodicity the character of malarious diseases—not always.—How malaria acts, and on what organ.

I.

"**RERUM cognoscere causas**" has been in every age of the world, the object of human pursuit. In no instance in the whole catalogue of the arts and sciences is it of so much importance to arrive at accurate results as in the science of medicine. To fail in an attempt where so many others have failed, is not dishonorable. To succeed where the great names of the present and all preceding

ages have not been successful, will not be expected of *me*. It is reserved, perhaps, for some future SYDENHAM or CULLEN to unfold the chain of the sympathies, and to reveal the action of that primordial law which has established so intimate a connection between the various parts of the body, and between the body and the mind.

II.

It appears to me evident that medical authors, while exercising their ingenuity and displaying much learning in order to render clear the mode in which morbid action is produced, have increased the difficulties naturally embarrassing the subject. Our illustrious countryman, the late Professor RUSH, of the University of Pennsylvania, enumerated four classes of causes, by the necessary co-operation of which, disease is developed, viz: the remote, predisposing, exciting, and the proximate causes. The last in the chain he considered, with the celebrated GAUBIUS, as "*morbis ipse*" or the disease itself.

III.

Presumptuous as it may be to question the authority of a name so deservedly eminent, it seems clear to *me* that in this arrangement there are two errors: the first, that of unnecessarily multiplying links in the chain of causation by considering the debility produced by the agency of the remote cause as *itself a cause*, when it is only a condition of the system on which the exciting cause exerts its power; and the second, that of confounding cause and effect, by admitting or asserting the identity of the proximate cause with the disease produced by its action.

However inappreciable, there *must be an interval between the time when the cause is applied, and the time when the effect is produced*. The cause and effect, then, are not simultaneous. To say that the proximate cause is "morbus ipse," or identical with the disease, involves an absurdity which no ingenuity can render intelligible, and no authority can make true.

IV.

It is manifestly opposed to the rules of sound philosophy to admit of more causes than are necessary to produce an effect.* I shall, therefore, adhere to the rule laid down by NEWTON, and refer to *two only* as *generally* necessary to produce disease, viz: the remote or predisposing, and the exciting or proximate. I say *generally* necessary, for it will hereafter be seen that the long continued or highly concentrated action of the remote cause will, *per se*, develope the symptoms which characterize a fully formed fever. The exciting and proximate causes should be held to be synonymous—the exciting cause or that which excites morbid action in the system being unquestionably that cause which is *nearest* (the meaning of the word *proximate*) to the disease.

* Causas rerum naturalium non plures admitti debere quam quo et vero sint, et earum phenominis explicandis sufficiant.—NEWTON, *De Leg. Philos.*

* For quo et vero read qua
et vera.

V.

Doctor CULLEN has left succeeding writers very little to add with regard to the remote causes of fever. Among these he mentions *two* as more prominent than others, viz: effluvia from the human body, and marsh miasmata. These, he observes, are remote causes, arise from putrescent sources, are sedative in their nature, and produce, the first, fever of a continued or typhoid type, the latter, or marsh effluvia, remittent and intermittent fever.

It is doubted whether there be any other agent *directly* engaged in the production of endemic autumnal fever, than the effluvia from marshes or low, moist and rich grounds. Loss of rest, exposure to cold, &c., *may cooperate* in reducing the body to that state of debility in which it is peculiarly susceptible of the action of exciting causes.

While then some physicians, inquiring after causes, have considered all diseases as a Divine infliction, and others have descended

into the bowels of the earth and brought forth morbiferous exhalations from its dark and secret caverns, I do not hesitate to admit, as a fact susceptible of the strongest proof, that marsh effluvia, miasmata, or malaria are the efficient cause, the sine qua non, in the production of those autumnal bilious fevers which desolate all tropical and many parts of temperate latitudes. Laborers and others who are most exposed both to the action of the sun's rays and to night air, and those who it may be supposed have the least constitutional power of resistance to morbid causes, as children, with those who are slightly clothed and insufficiently fed, particularly such as sleep in old houses which freely admit night air while they sleep, are the first subjects of the fever in every year. It is a fact also, which deserves to be mentioned, that, twice in the course of my professional life, my attention has been called to a great mortality among the cats—immediately before the commencement of the endemic in the month of August.

VI.

The direct effect of the action of this powerful agent (malaria) on the human body, is that condition which, with great propriety, has been called predisposing debility.

An individual may continue in this state of predisposition for days, weeks, or even months, and still be able to pursue his customary vocation. All the time he is conscious of a degree of lassitude or indisposition to active employments; his appetite is not good, he has a disagreeable taste in his mouth, his bowels are irregular. He is evidently under the influence of the remote cause. In this condition it is necessary, in order to produce the full development of fever, that the individual be subjected to the action of an exciting cause.

VII.

The most common exciting causes are excesses in eating and drinking, more than usual exertion of the motive powers, the passions of the mind, and the long-continued

action or highly concentrated application of the remote cause. Instances of sudden death have occurred in persons employed in marshy grounds in consequence of the action of malaria in a state of intense concentration.

Among the exciting causes, the action of drastic purgatives must not be omitted. It is not unusual for individuals who are exposed to miasmatic influence to take active medicine with a view to the prevention of fever; and it is still more unusual for such to escape an attack. Every physician of experience must have seen numerous cases of autumnal fever brought on by the very measures injudiciously employed to prevent them.

VIII.

Doctor SOUTHWOOD SMITH, of the London Fever Hospital, the author of a work on fever which has raised to his name a monument "*ære perennius*," in his inquiry into the cause of that disease, observes, "Of all predisposing causes, the most powerful is the continued presence and slow operation of the exciting cause," &c. Vide SMITH on Fever.

It must appear evident to all that the condition spoken of as that which renders the body susceptible of being acted on by the exciting cause must be that produced by malaria. This, it is well known, is the state of hundreds who live in miasmatic districts, who nevertheless escape the full development of the fever. A careful avoidance of all excitants will frequently secure them an exemption when great numbers lie prostrate around them, and when every breath they draw is loaded with the pestilential cause. But one draught of stimulating drink, one act of over-indulgence in eating, one paroxysm of anger or other exciting passion, will rouse the slumbering predisposition and produce fever.

IX.

Moreover, it is evident that the condition to which Dr. SMITH refers, is produced by some *debilitating* agent; and hence it follows that the cause which produces this condition cannot be entitled to the name of *exciting*. The result of the action of an *exciting* cause must be *excitement*.

X.

We here see two great names who differ *toto cælo* with regard to the remote and exciting causes, and to the position which they occupy in the chain of diseased action, or rather in the production of morbid affection. CULLEN considers miasm as the *remote*, SMITH as the *exciting* cause. I shall follow the first—but “*sub judice lis est.*” The opinion however, may be hazarded, that when all parts of the human organism perform their functions with regularity; when the precise quantity of food to subserve the purposes of nutrition, be taken; when the exact quantity of clothing necessary to preserve the just equilibrium, be used; when no extraneous excitant and no internal stimulant be present, it is very possible that the phenomena of fever will not be developed, though every avenue of the human body be filled with the remote cause.

It is indeed acknowledged that it is exceedingly difficult to avoid all exciting causes and to preserve the body in that ex-

act state of equilibrium. It is however contended that it is *absolutely impossible* to avoid or escape the action of malaria in those localities where autumnal fever prevails. It may then be considered as a legitimate conclusion that malaria should be received as the remote cause: for if there be any meaning in the term *exciting*, and that meaning be a certain circumstance, which *immediately precedes* disease, malaria cannot be the exciting cause, as disease would inevitably be produced in *every* individual exposed to its influence.

XI.

Moreover, the fact that a space of time intervenes between exposure to miasmatic influence and the development of fever, proves that miasma should not be considered as the exciting cause. Dr. ROBERT JACKSON* bears testimony that the body may continue in health a *long time* during the constant action of unwholesome exhalations; and Dr. Smith† admits that the “febrile poison may

* Fevers of Jamaica, page 134. Edit. 1791.

† SMITH on Fever.

be present without being sufficiently potent to produce fever." If the correctness of these views be admitted, it will appear evident that between the action of the remote cause and the development of fever, some intervening agent is required.

XII.

Whether, however, malaria be the remote cause, according to CULLEN, CLEGHORN, JACKSON, RUSH, and many others, or the exciting cause, according to the decision of Dr. SOUTHWOOD SMITH, it is on all hands conceded that autumnal fever is the consequence of the action, remote or immediate, of that unknown and intangible agent, malaria or miasma, on the human body. To believe or to dispute this position may be considered as a test of professional orthodoxy. What the chemical character of this gaseous matter, the product of the action of the sun's rays on putrefying masses of vegetation, is, remains to this day, notwithstanding the acute and laborious researches of MACCULLOCH and others, a subject of mere

conjecture. Though known to exist, it is a singular fact that the nicest endiometer has never detected any appreciable difference between the atmospheres of marshy and mountainous regions. Let it suffice to say that all believe it to be evolved from decomposing vegetable matter by the influence of the sun's rays.*

* Homer (though it may seem strange to produce non-professional authority) was doubtless acquainted with this fact. When he ascribes the pestilence which desolated the Grecian camp to the anger of Apollo (the god of day), he means to allude to the action of the sun's rays on vegetable accumulations. The situation too of the Grecian camp, on the margin of the sluggish and marshy Scamander† and its tributary stream the Simoris, was favorable to the production of Malaria. The bow, the arrows discharged from the full quiver of the avenging god, and the time when they were darted forth, represent with perfect accuracy the mode of attack by our unseen enemy and the time when the mischief is done. The subjects also of the first invasion of the pestilence‡—

“ Οὐρῆας μὲν πρῶτον ἐπώχετο, κούς κύνας ἄργυς, I
 Αὐτὰρ ἔπειτ' αὐτοῖσι βέλος ἐχευε κῆς ἐφίεις,
 Βάλλ'.” Iliad, lib. i. 50.—

accord so well with what we know, in modern times, to be true, that there is left no room to doubt concerning the identity of the plague in the Grecian army with the fever of malarious countries.

† Now called the Mender.

‡ Vide the fact mentioned p. 29. 30

X For Endiometer, read Zen
 S For Simoris read Simois
 I For κούς read και

XIII.

Let it be assumed, then, as a fact, unsusceptible of successful contradiction, that exhalations from marshy grounds, or miasmata, whatever be their chemical character, independent of atmospheric vicissitudes, constitute the sine qua non in the generation of bilious autumnal fever. The fact of the frequent occurrence of *vernal* intermittents when the sources and causes of unwholesome exhalations do not exist, does not militate against this opinion. The impression made on the body by malaria remains, in the opinion of Professor POTTER, of the University of Maryland, for years, in such as live within the sphere of its influence for one year. "Hence," he observes, "it modifies all their diseases. The low temperature of winter does not continue long enough to obliterate the malarious predisposition, and hence we see not only vernal intermittents but pneumonia biliosa from the combined operation of malaria and vicissitudes of temperature."

If *autumnal* fever be entitled to the name of *bilious*, it cannot be denied to many cases of *vernal* intermittent. We frequently see instances in which there are evident indications of derangement in the biliary system. My friend, Dr. BORDLEY, of Centreville, has only seen vernal intermittents and remittents in those persons who were the subjects of the same diseases the preceding autumn.

XIV.

Cæteris paribus, the north borders of mill-ponds and low marshy grounds are more generally unhealthy than the southern side, because the prevailing winds of summer and autumn waft the malarious exhalations in a northerly course. There have been, however, exceptions to this rule. In the fall of 1839, a family living on an elevated spot on the south side of an extensive pond of stagnant fresh water, near the shore of the Chesapeake in Kent county, was severely scourged, while those on the north side almost entirely escaped.

XV.

JOHNSON and MACCULLOCH contend that malaria is not only the parent of autumnal fever, but of many other diseases, as apoplexy, palsy, lethargy, epilepsy, hysteria, hypochondriasis, tic doloureux, &c. &c. According to the former, periodicity or remissions and exasperations afford ground for suspecting a malarious origin.

It is doubted whether any of the morbid affections above mentioned, when *primary*, observe regular diurnal, bidual or tridual exasperations. There *are* diseases, however, which *do not* possess the feature of periodicity or remissions and exasperations which are unquestionably produced by the slow operation of malaria,—as physconia of the liver, spleen, &c.

XVI.

There is much diversity of opinion with regard to the medium through which the morbid impression is made on the body. Some contend that it is through the lungs; others

that the miasma is mixed with the saliva, and being deposited with that secretion in the stomach, acts through the medium of that organ; while a few affirm that it acts through the cutaneous surface.

Though as a matter of curiosity it is desirable to know the medium through which this "pestilence that walketh in darkness" is introduced into the system, the full discovery would arm us with no power to prevent its effects. If it be through the respiratory organ, we could not at any time dispense with the use of that viscus when exposed to unwholesome exhalations; and the most watchful care could not defend the stomach from a foe which has heretofore eluded the most laborious research. Let us, therefore, be satisfied when the same Almighty Power, who, for wise purposes, has designed this scourge as a part of the punishment due to his violated law, has mercifully provided the means of restraining its influence, and disarming its power.

XVII.

But the question occurs, on what organ is the morbid impression made? In answer to this, it appears to me evident that the brain and its nervous appendages, constituting the organ of sensation, *must* be the part on which *all* impressions, whether salutary or morbid, are primarily made. Whether then, the impression be made through the nose, (by the nerves distributed on the Schneiderian membrane,) the lungs, the stomach or the skin, a certain affection of the nervous system must constitute the first link in the chain of morbid action.

While on this subject, I will state that twice in my life I have been attacked with a violent congestive autumnal fever, in a few hours after encountering a most offensive *smell*, once in passing through a cabbage garden, and again along a swamp, in the month of September.

There are other fevers beside that which is the especial subject of the present inquiry. These fevers, as they differ in regard to their

remote cause, so they differ in their access, progress and termination. Among these, it will only be necessary to refer to those exanthemata which are produced by a specific contagion.

Chapter II.

OF THE CAUSES OF FEVER.

Nature of Fever.—Davidge's definition.—The endemic is either remittent or intermittent.—Rush's opinion of the unity of disease.—Davidge's.—Fever is an unit.—The dysenteric, cardialgic, &c. are states of the same disease.—Bilious fever, whether infectious or not.—Potter's Memoir on Contagion.—Dr. M. Browne's opinion.—Alibert.—Emerson.

XVIII.

THE term *fever* derives its origin from the Latin noun *febris*, from *febrio* or *ferveo*, which means "to be hot." The morbid affection which has, from the dawn of medical science, received this name, was so called because increased heat constitutes a very prominent feature. The late learned Professor DAVIDGE, one of the fathers of the medical college of Baltimore, and among its most distinguished ornaments, thus defines the nosological character of the class of *feverous* diseases, "Progressis languore, lassi-

* For *Progressis* see languore

tudine et aliis debilitatis signis, vel horrore; pulsus frequens, *calor major*, cutis arida; lingua sordida; plures functionis læsæ, viribus præsertim artuum, imminutis.”

GENUS I. Febris Remittens.

“Febris, miasmate paludum orta, accessionibus pluribus, intermissione, saltem remissione evidente interposita, cum exacerbatione notabili et plerumque cum horrore redeuntibus, constans: accessione quovis die unico tantum.” In this genus are embraced the common bilious remittent, the *yellow fever*, and several species of intermittents, as quotidians, tertians, quartans, with numerous varieties, a separate notice of which would swell this manual to an inconvenient size without increasing its value. Those who wish to trace them will find them all systematically arranged and defined in Doctor DAVIDGE’S Methodical Nosology, second edition, page 4, et sequent.

XIX.

The endemic fever of the Peninsula is either intermittent or remittent. In truth,

+ For functionis read function
 § For exacerbatione read exacerbatione.

all remittents are continued fevers; and we frequently see intermittents, so called, exhibiting such a morbid condition in that stage which is called the intermission, that we cannot *justly* call them by that name.

XX.

The illustrious Professor RUSH, disgusted, as he well might be, with the endless and frequently useless distinctions of Nosology, committed an error on the other extreme; and, boldly throwing off the trammels of the schools, asserted that disease was "an unit."

In a certain sense this is undoubtedly true. "That every disease is '*morbid excitement*,' is a position so plain and so true that it neither admits of refutation nor illustration. It is one of those self-evident propositions which defies argument and is unsusceptible of proof."* But to contend for the identity of morbid action in all its circumstances, whether exhibiting the highest grade of inflammatory action or the lowest state of exhaustion; whether requiring the most ener-

* DAVIDGE. Introd. to Nosol.

getic and powerful depletion, or demanding the most prompt and decisive stimulation, is to simplify our views without increasing our knowledge—to retard rather than to advance the progress of our science.

XXI.

“The original or primary change in or departure from the healthy condition of the body, must for ever be in *kind* according to the nature of the operating cause, and equally with the causes, susceptible of division. Thus that disease which we term small-pox, or that which we term intermittent fever, or that which we term lucis venerea, is referable for its peculiar phenomena to the nature of the peculiar remote cause acting on the animal system. The virus of the small-pox will never, under any circumstances, produce the phenomena of lucis venerea, nor vice versa.”*

XXII.

It was probably from Rush's theory of the unity of disease that Dr. SOUTHWOOD SMITH

* DAVIDGE ubi supra.

X For lucis - read lucis.

borrowed, though without acknowledgment, the hint which led him to the adoption of his opinion of the *identity* of fever.

It is readily admitted that *fever*, in its essential nature, *is one*, differing certainly in form and grade, but identical in its principal characteristics, and requiring only modifications in the treatment. But fever, in its unmixed character, or unaccompanied with local irritation or inflammation,* is of rare occurrence.

XXIII.

Medical writers of deservedly high reputation* have distinguished this disease by names derived from the organs which seem to be especially affected—as the dysenteric, the cardialgic, the gastric, the hepatic, the phrenitic, &c.

It is undoubtedly true that, in almost all fevers, an investigation of the morbid condition of the larger and more important organs will reveal functional or organic lesions

* Irritation is an affection of the nervous inflammation of the vascular system.

† Cleghorn, Alibert, and all the physiological school.

at a comma (,) after nervous—

or derangements. But these different states present indications which call for *variations only* in the details of the treatment, and are useless in practice. And although the force of the remote cause is sometimes concentrated on the various organs with a fatal power, the local affections should be considered only as symptoms of the same identical disease.

XXIV.

In the history of fever the old adage, "the weakest goes to the wall," is no less true than it is in civil and personal contests. It is daily verified in febrile attacks. The brain, the liver, the lungs, the spleen, the stomach and intestines, all become the seats of disease as these various organs happen, by the operation of various causes, to be in a state of predisposing debility. It is to this circumstance that we must attribute the diversities observable in our autumnal fever—the same in nature, differing only in its pathological relations.

XXV.

It has become fashionable in modern times

to curtail too much the catalogue of infectious* diseases, and it may be made a question whether we have not gone too far in banishing from the schools all notion of infection in *some of the worst states* of our autumnal bilious fever. For an able discussion of this subject, the reader is referred to a Memoir on Contagion, by Professor POTTER of the University of Maryland.

Without entering the field with that judicious physician and distinguished writer, for

—quid enim contendat hirundo

x Cyenis? (*Lucret.*)

it is stated as a fact which will probably not be denied, that those who are much employed about the sick are, *ceteris paribus*, more liable to attacks of the fever than others, though it is admitted that many more persons thus employed escape the fever than

* By some authors, the terms infectious and contagious, are employed synonymously. Strictly speaking, they are different—*infectious* referring to those diseases which may be communicated through the air without actual *contact*, as variola, scarlatina, rubeola, and some others, *confessedly* infectious; and *contagious* to those which are only communicated by contact, as lues, psoriasis, and probably the plague, &c.

For *Cyenis* read *Cyenis* -
(Swans)

would escape if exposed to morbillous or variolous infection. "Of the power of the living body even when in health, much more when in disease, and above all when that disease is fever, *to produce a poison capable of generating fever*, no one disputes, and the fact has never been called in question."*

My venerable preceptor,† now retired from the labor of half a century, a physician excelled by few for close observation and sound judgment, always contended that, *to an individual long exposed in the chamber of the sick, our bilious fever in its worst forms proved infectious.*

Dr. ALIBERT, after remarking that "exhalations from human bodies possess an energy and virulence superior to that of marsh miasmata," proceeds to say that he has "seen malignant intermittents rage in hospitals which had no marshes in their neighborhood, and where no other infection could be suspected than *that which arose from too*

* SMITH on Fever, 377. † Dr. MORGAN BROWNE, since dead.

great a number of persons crowded together in one place."*

"He who, with or without personal experience, has searched far into the annals of medicine, fairly and impartially weighing the different authorities, must be incredulous indeed, if he does not admit that *in febrile diseases not originally infectious, where many of the sick are crowded together, and proper ventilation and cleanliness cannot be preserved, there is generated (an effluvium or) a specific infectious matter, capable of producing in a healthy person sufficiently exposed to it, a similar disease.*"†

XXVI.

In September, 1826, a gentleman in Chertertown, well known to me, was attacked with the autumnal bilious fever, then prevailing in the town and neighborhood. It proved a double tertian of a low grade of action, and was aggravated with so much visceral disease that his life was in imminent

* ALIBERT on Malig. Interm. prop. 17.

† EMERSON, Epidem. Fever. *Med. Journ.* Vol. III. 194.

danger. He did not recover until he was brought under mercurial influence. About the time, when he became convalescent, his wife, who had not been a subject of the fever for many years, was taken with the same disease, and died after an illness of seven days. Of three ladies of the town, who kindly assisted in nursing her, two, who were employed more immediately about her person, became the subjects of the same fever, and one died after a short illness. Three female relatives from the country, one living four, another nine, and the third twenty miles distant, visited the family, and were in almost constant attendance in the chamber of the sick. *They all* were attacked with fever and returned home, and one of them died of the same malignant disease.

All these individuals, being in the house where the first cases occurred, were of course exposed to the same miasmatic influence, which produced the fever in the first instances. But so were others in the family and in the immediate vicinity, who were not employed in nursing the sick, and who,

nevertheless, escaped an attack. It is not unfair, then, to suspect that the effluvia from the bodies of the sick, in rooms kept clean, but not perfectly ventilated, possessed *some, if not a principal share* in producing the disease in those who were in constant attendance on the sick.

XXVII.

It is admitted that an universal conviction of the infectious nature of this disease would limit the exertions of benevolence, and paralyze the hand of charity. Few would venture into an atmosphere charged with an unseen enemy whose dart was *sure* to strike, and whose wound might be fatal. But a love of truth compels me to repeat that *few escape who watch by the bedside of the sick and dying in confined apartments, in the worst forms of this fever.* This opinion is the result of an experience derived from a practice of thirty years, and it is sanctioned by authorities not to be despised.

With these remarks — and the acknowledgment that, *under ordinary circumstances,*

no danger is to be apprehended, the subject is left to the decision of the judicious reader.*

* It is, in the opinion of the undersigned, more conformable to the general character of bilious or miasmatic fever, to refer the extension or multiplication of cases which frequently proceed from isolated, and severe protracted cases of that fever, to the debility consequent upon fatigue, watching, anxiety and general derangement of the regular and accustomed habits of those who are thus attacked. Debility is known to be a powerfully exciting cause; and the above causes are certain to produce it in some degree.

T. C. K.

X For exciting read Predisposing
ing cause.

Chapter III.

OF INTERMITTENT FEVER.

Phenomena of intermittent.—Cold stage.—Accompanying symptoms.—In what manner the congestion is removed.—The chill a state of congestion.—Severity and duration of the chill not in proportion to the subsequent reaction.—Premonitory signs.—Hot stage, how produced.—Sweating stage.—Restoration of the functions, or apyrexia.—Three stages in each paroxysm.—Discharge of bile no proof of increased secretion.—Suppression of the biliary secretion in some cases.—Nausea, on what it depends.—Morbid irritability of the stomach.—Spontaneous purging; first of serum, then of blood, very dangerous.—This bloody discharge from the capillaries of the mucous membrane of the intestines.—Its consequences.

XXVIII.

THE phenomena of intermittent fever may generally be traced to that condition of the system which is denominated rigor, or the chill. It is not always so distinct that the patient can in every instance be positively sure of its access or declension. In many cases there is no shivering, no sense of cold-

ness. But even in such instances a practised eye can discover a certain pallid and shrunken appearance of the countenance and a slight lividity of the finger nails.

In most cases, however, there is a decided rigor, or shivering; a small, frequent, and contracted pulse; a hurried and oppressed breathing; insatiable thirst; yawning and stretching; the knees are drawn up; and the head pressed down under the bed-clothes; the hands and arms crossed upon the breast, indicating an *instinctive* propensity (for none take time or feel an inclination to *reason* on the subject) to keep them as near as possible to the source and fountain of heat, and the frequent repetition of attempts to relieve the laboring heart by making a full and deep inspiration.

XXIX.

It is a circumstance worthy of note, that while the patient is shivering with cold, or the sensation of it, there is to another person no appreciable diminution of temperature, except in the extremities. The chill, then, cannot consist in any actual loss of heat, but

in its irregular or unequal distribution. This loss of balance or unequal diffusion of heat is owing to the altered action of the nervous system, in consequence of the impression made upon it by the morbid cause. During the chill, the urine, if discharged, will be found colorless as water.

XXX.

The symptoms enumerated in xxviii. are, though in different degrees of intensity, attendant on every chill. There are others occasionally present—as wandering and confusion of the powers of the mind, nausea, vomiting, which generally soon ushers in the hot stage by determining the circulation to the surface, and a purging, sometimes copious, of thin, light stools, chiefly serous.

The occurrence of the last mentioned symptom calls for the most prompt, energetic, and persevering attention on the part of the medical attendant. A delay of one hour will frequently introduce a danger which the skill of the most experienced and judicious practitioner will fail to remove.

XXXI.

It has been observed that vomiting sometimes puts an end to the chill by determining to the surface. This is probably effected by the pressure of the abdominal muscles, by which the blood accumulated in the portal viscera is forced into the heart and thence distributed through the arterial ramifications to all parts of the body.

XXXII.

During the chill the blood is congested in the large interior veins, particularly in the portal circle, and produces a sensation of increased heat about the præcordia. While shivering with a sensation of cold on the surface, the patient is tormented with a most urgent desire for cold drinks. In fact, a true venous congestion exists, accompanied by its characteristic signs—a pale countenance, shrunken features, sighing, oppressed breathing, &c. &c. The cutaneous vessels contain less blood than in their healthy state. Now as in many cases, there have occurred no

evacuations by which the quantity of the circulating fluid could have been diminished, it is evident that there must be an accumulation in some other part. Accordingly we find this congestion in the large interior veins—a circumstance which sufficiently explains that anxiety and oppression which coexist with the shrunken appearance of the countenance before mentioned, and which stamps the features with an expression hippocratic and cadaverous.

XXXIII.

The duration of the chill varies from a few minutes to several hours, and depends probably on the varied degrees of physical energy and the degree of concentration or the period of application of the remote cause.

A modern author* of eminence distinctly states that “in proportion to the intensity of the chill, will be the subsequent reaction.” In *this* latitude (N. 39° to 40°) the fact is generally, if not universally, otherwise. A

* JOHNSON.

cold stage of long duration sometimes passes off so gradually that the succeeding stage of reaction is both short and moderate. The concurrent testimony of Dr. CULLEN fully sustains this statement.* In some cases, the efforts of nature to restore the equilibrium between the central and superficial or capillary circulation, are too weak; the organs become overwhelmed by an indomitable engorgement; there is no physician at hand to administer relief, and the patient dies in the chill.

XXXIV.

The chill, however, though that state to which, as before observed, the disease is generally traced, and though it is almost always the first symptom which awakens the attention of the patient, *is not* the first link in the chain of morbid action in fever. Lassitude, an indisposition to motion, an unpleasant feeling in the head, not amounting to pain;—these, or some of them always precede the access of the chill, though at the time are seldom noticed.

* First Lines. Vol. I. 35.

My friend, Dr. BORDLEY, informs me that "a soreness in the balls, or over the orbits of the eyes," is a premonitory sign seldom absent. "If we attend minutely," says Dr. JACKSON,* "to all the circumstances of invasion, it will, generally, not be difficult to perceive that a *disagreeable, though indescribable affection* of the *stomach*, takes place previous to the smallest perception of languor or debility, which are commonly only immediate forerunners of coldness or shivering."†

XXXV.

The arterial effort succeeds at length in propelling the blood into the superficial capillaries and the hot stage commences. The extreme vessels receive more blood and their diameter is increased; the pulse gradually increases in volume until it becomes full, quick, and frequently tense; the heat of the

* Fever of Jamaica, p. 138.

† A tingling sensation of some superficial nerve, frequently of the radial, is in some cases a sure prognostic of approaching chill. This will be succeeded by a burning in the face, and soreness in the balls or over the orbits of the eyes. THOS. C. KENNARD.

skin augments until it becomes intense in proportion to the frequency and force of the pulse, and in this early stage of the progress of the disease, it frequently happens that the organ which, by the operation or impression of the remote cause, had been brought into a state of predisposing debility, now takes on morbid action.

The increase of heat which advances, *pari passu*, with the increasing celerity of the circulation, probably depends upon the augmented quantity of oxygen gas inhaled during the rapid respiration attendant on the cold stage. The oxygen becomes fixed in the lungs, while the caloric which held it in solution, is diffused through the system. This chemical theory is as much entitled to support as any with which I am acquainted; and we are indebted for it, as far as I know, to the late Dr. ENNALES MARTIN, an eminent practitioner of Easton, in Talbot county, Md.*

* Vide Dr. MARTIN'S valuable practical work on the Epidemic Typhus of 1812.

My friend, Dr. BORDLEY, before mentioned, suggests the following theory: "The excessive excitement of the cutaneous ves-

XXXVI.

The thirst is urgent, the skin is dry and rough; the tongue, more or less loaded with a white secretion, is at first moist, but after a few paroxysms becomes more inclined to dryness; the face is flushed; the eyes and ears acutely sensible to light and sound; the temporal arteries throb and every motion of the head is attended with pain, more or less severe; the urine is high colored and scanty, and pains in the back and inferior extremities are frequently very distressing.

XXXVII.

At an uncertain period after the access of the hot stage, the skin becomes moist; the thirst less urgent or entirely ceased; the pain in the head, back and extremities abates, and a diaphoresis, sometimes profuse, indicates the approach of a state in which the natural

sels produced by the force of the circulation, checks perspiration, and the usual frigorific effect of that excretion being suspended, the superficial heat is exalted. Is not this," he asks, "more simple chemistry?"

functions are restored. It is at this time that we sometimes see a discharge from the bowels, but more frequently from the bladder, which, with that from the skin, introduces the apyrexia or intermission.

This favorable crisis does not, however, always occur. The sweat sometimes becomes more abundant, and cold, and clammy; the patient, more and more oppressed, is extremely restless, frequently gasping for breath: he sighs and throws himself from side to side, with the vain hope of finding relief in a change of posture; vomiting and purging cease, if they had before been present, because the excitability is exhausted, and the patient dies.

In intermittent fever, the chill, the fever (by which term our patients designate the stage of excitement, and which, in obedience to common usage, I have sometimes used in the same sense) and the sweating stage, constitute the paroxysm. Happy both patient and physician, if these stages always succeeded each other in their natural and regular order. Every physician has, however,

seen cases characterised by great *apparent* mildness in the commencement, in which, symptoms of great violence and malignity, have been developed in the second or third paroxysm.

XXXVIII.

Soon after the commencement of the cold stage, nausea and vomiting frequently supervene.

The discharge of bile by emesis has long been considered by the sick and their attendants, as an evidence of increased secretion of that fluid, and full proof of its presence in the stomach. This is not always true as to the first supposition, and never as to the latter. The action of the abdominal muscles forces the bile from the liver into the duodenum, and thence into the stomach, whence it is discharged by the emetic nismus. The presence of bile would doubtless produce nausea; but independently of that, nausea is produced by a certain morbid condition of the gastric nerves, either primary or in sympathy with deranged cutaneous or hepatic

action. This consent or connection between the interior and exterior surfaces, is one link in that continuous chain of sympathies, by which the human body is bound up in one beautiful, though complex whole. This sympathy affords a wonderful exhibition of Divine Wisdom; and may be compared to that powerful attraction which draws the visible universe towards one common centre, and moulds it into one vast and harmonious system.

XXXIX.

The worst cases of our autumnal fever are sometimes characterized by a total absence of the biliary secretion. Vomiting will continue to recur with the regular return of the paroxysm for days, but no bile will be discovered in the matter ejected from the stomach or bowels. A favorable prognosis may always be confidently drawn when, after the entire suspension of the secretion, bile is seen in the evacuations, sursum vel deorsum.

XL.

But it is not in the cold stage alone that

nausea occurs. It sometimes begins during the stage of excitement: and when it commences during the cold stage, it frequently continues through the hot, and until the sweating stage is established.

The most distressing nausea is temporarily relieved by the effort to vomit, *even when nothing is thrown up*. This fact affords sanction to the opinion before given (xxxviii.), viz. that nausea depends not *always* on the presence in the stomach of any offensive or irritating contents, but on a morbid condition of the gastric nerves. In this, as in all other states and stages of the disease, it is important to ascertain the pathological condition of that organ. This knowledge alone can lead to a correct practice. It is evident that it does not consist primarily in inflammation; for this would not entirely disappear, as it generally does, on the accession of the hot or the sweating stage. It is not atony—for then the stomach receives any quantity of stimulating or other fluids without rejecting them and without nausea. In the last stage of our low bilious fever, in fatal cases, I

have seen large quantities of diffusible stimulants poured into the stomach with no more effect than would have been produced by pouring them into a basin.

In this morbidly irritable condition (the true pathological state) of the stomach, there is but one step to inflammation. This is frequently kindled up by the too free and injudicious employment of stimulants, and by long continued and violent efforts to vomit. This exalted sensibility or irritability spontaneously ceases when the cutaneous surface becomes moistened by perspiration towards the close of the paroxysm, if not before by the equal diffusion of heat and the more uniform distribution of excitement at the access of the hot stage.

XLI.

Soon after the access of the cold stage, cases are sometimes seen in which a spontaneous purging, preceded by nausea and vomiting, comes on. It is not always copious at first, but liquid and fetid, white or green, indicating either a suspension or vitiation of

the hepatic secretion. This terminates the paroxysm, sometimes allowing an inconsiderable febrile movement, without a sweat. The system becomes tranquillized; the functions are partially restored, and the patient can with difficulty be persuaded to submit to measures calculated to guard against or to moderate a recurrence of the fit.

XLII.

At the end, however, of a certain period, depending upon the unexplained and inexplicable tendency to a quotidian, tertian, or double tertian type, most frequently the last in bad cases, the symptoms return with a violence which threatens the extinction of the vital powers. The chill is long and violent; the nausea most distressing; the oppression intolerable and attended with incessant jactitation; and when the alvine discharges commence (which they sometimes do to the total prevention of the stage of reaction), copious evacuations of incoagulable blood at once destroy life, or reduce the sufferer to the borders of the grave. The

third paroxysm surely ends the sufferings with the life of the patient, unless arrested by the most prompt and decisive treatment.

XLIII.

Here a question arises, whence proceeds this sanguineous evacuation? It cannot be from the liver or spleen, as some suppose, as a fatal disorganization must precede such discharge: and that such disorganization does not take place is evident from the fact that these cases are not only not always fatal, but yield readily to remedies if timely and judiciously used.

While in this situation, the cutaneous surface is relaxed, moist, and clammy, and the laws of sympathy require that there should be a corresponding relaxation of the internal surfaces which are more immediately involved in the diseased action.

It is, then, from the patulous orifices of the capillaries which open into the cavity of the intestinal canal, that this discharge proceeds. These minute vessels, in a state of health, give passage only to a thin halitus, but now

are so much relaxed as to afford an exit to red blood.

XLIV.

The immediate consequence of this profuse evacuation of the vital fluid is great prostration. Muscular power is gone—and the brain, losing its usual tension in consequence of the sudden and great diminution of the circulating fluid, ceases to exhibit its usual phenomena. The mind wanders; the eyes are nearly closed; the ears almost insensible to sound; the skin loses its sensibility, and the lamp of life is only preserved from extinction by the most powerful stimulants.

Chapter IV.

OF INTERMITTENT FEVER.

What is the cause of the periodical paroxysm.—Cullen's diurnal revolution. — Balfour's lunar influence rendered probable by facts.

XLV.

THE researches of medical men have not revealed to us the cause of the periodical return of the paroxysm of intermittent fever. We must be satisfied with knowing the fact. It is probably one of those inscrutable arcanæ which neither time nor science will ever disclose. The difficulties by which the subject seems to be invested have not, however, prevented some inquiring minds from attempting a solution. "In every fever," says Dr. CULLEN, "in which we can distinctly observe any number of separate paroxysms, we constantly find that each paroxysm is finished in less than twenty-four

hours: but as I cannot perceive any thing in the cause of fever determining to this, I must presume it to depend upon some general law of the animal economy. Such a law seems to be that which subjects the economy, in many respects, to a diurnal revolution. Whether this depends upon the original conformation of the body, or upon certain powers constantly applied to it and inducing a habit, I cannot possibly determine; but the returns of sleep and watching, of appetites and excretions, and the changes which regularly occur in the state of the pulse, show sufficiently that in the human body a diurnal revolution takes place.

“It is this diurnal revolution which I suppose determines the duration of the paroxysms of fevers: and the constant and universal limitation of these paroxysms, while no other cause of it can be assigned, renders it sufficiently probable that their duration depends upon and is determined by the revolution mentioned. And that these paroxysms are connected with that diurnal revolution, appears further from this—that though

the intervals of paroxysms are different in different cases, yet the times of the accessions of paroxysms are generally fixed to one time of the day; so that quotidians come on in the morning, tertians at noon, and quartans in the afternoon.”*

XLVI.

This “diurnal revolution, depending on some general law of the animal economy,” probably gave to Dr. BALFOUR the hint which led him to a fuller investigation of the subject. He had observed, while pursuing the practice of his profession in India, a remarkable coincidence between the accessions and relapses of fever and the (as he calls them) “novilunar and plenilunar periods.” In a treatise prepared for that express object, he has accumulated a mass of testimony on this subject, which can only be rebutted by at least an equal weight of evidence on the other side.

Without any knowledge of BALFOUR’S opinion, and without any suspicion of lunar

* CULLEN’S First Lines, vol. i, 55, 56.

agency, I had for many years observed and frequently mentioned the circumstance to my professional brethren, Doctors BROWNE and FISHER, of Kent county, that both in our winter and autumnal diseases there would occur a *number of new cases* within the space of a few days, and afterwards *very few* for about two weeks. After reading BALFOUR'S work I kept, in 1839, a register of all the cases which occurred in my practice; and an examination of that register affords abundant proof that *five-sixths of them commenced within three days before or after the new and full moons.*

Without acknowledging my full conviction of the truth of Dr. BALFOUR'S theory, I confess that there is sufficient reason to suspect that the coincidences which he and upwards of fifty other practitioners concur in stating, could not be altogether fortuitous.

I shall only add on this point that the same respectable authority ascribes the periodical recurrence of the paroxysms to solar influence, and declares that they return with nearly the same uniformity as the tides.

The curious inquirer may consult, for more ample information on the subject, the works of LIND, MEAD, MOSELY, JACKSON, BALFOUR, and the authorities there cited.

If the foregoing statements be true, then lunar agency must be introduced into the number of exciting causes of Fever.

XLVII.

The symptoms enumerated in xxviii. xxx. xxxii. et sequent. comprise the ordinary morbid developments of a paroxysm of intermittent fever. As in all other diseases, so in fever, there are mild and severe cases, differing not in nature, but in intensity. Every physician has seen cases in which there exists no evident determination to any particular organ. There is no pain in the head, no suffusion of the vessels of the face, no tenderness in the epigastrium or the hypochondria, no tumidity of the abdomen, no spinal or arthritic disturbance. Such cases have but little claim to professional attention.

Chapter V.

REMITTENT FEVER.

Intermittents and remittents from the same remote cause.—Mutation of type.—Cold stage.—Hot stage.—Remission.—Renewal of the paroxysm.—Morbid developments.—Important rule.—Milder forms not to be neglected.—Distinction by names, unfounded and useless.—Signs of Cephalitis—of Gastritis, hepatitis, enteritis, &c.—Different from ideopathic gastritis, uteritis, &c.

XLVIII.

WHY the same remote cause should, in one individual, predispose to intermittent, and, in another, to remittent fever, will most probably remain to the end of time an unrevealed arcanum. That such is the fact there is no room to doubt.

This opinion receives sanction from the circumstance of the simultaneous prevalence of these forms of endemic fever. The mutation of type also, so often noticed by authors and so frequently observed in every-day practice, is confirmatory of it. This change of

x For ideopathic and idiopathic enteritis I put enteritis for uteritis.

form is sometimes effected by remedial agents, sometimes where none have been employed. A remittent has been changed into an intermittent by decisive depletion; and intermittents have still more frequently become remittent by the premature and injudicious use of stimulants and tonics.

Receiving it then, as an established truth, that malaria does certainly produce our endemic fever of whatever form or grade, I proceed to offer a brief history of remittent fever.

XLIX.

As in intermittent, so in remittent fever, the attention of the patient is first awakened by a chill of greater or less violence and duration. It is, however, seldom so severe as in intermittents.

After an uncertain lapse of time the stage of excitement commences, and its progress is always marked by a morbidly exalted sensibility. A loud noise is always painful, and has frequently produced convulsions in children. A disproportionate heat is perceived in the head and abdomen. Pain in the head

and in the back, about the region of the lumbar vertebræ, is among the most distressing of the symptoms.

This determination to the head, remarkably urgent in those subjects who, previous to the attack, had been engaged in business requiring inordinate exertion of the mental powers, presents to the physician all the varied grades of mental disturbance from a slight aberration of reason, to furious delirium or profound coma. In some cases, the subject of the fever, instead of exhibiting a "diminution of the power to reason and to judge,"* as is most commonly seen, displays unusual intellectual vigor. New powers seem to be created. I have sometimes been astonished at the eloquence and the correctness of the reasoning faculty in individuals who were never before suspected of possessing either.

L.

The pulse is quick, frequent and full, sometimes tense or corded; the skin dry and

* SMITH on Fever.

husky; the tongue but little changed at first, but soon becomes white, and exhibits through this white coat, small red papillæ; the urine scanty and high colored, like brandy or ley, and when dropped on the linen, stains it of a yellow tint; the thirst is insatiable; a tough, salivary secretion forms in the mouth and sometimes a degree of nausea is felt, though not so frequently as in intermittents.

In a few hours the skin softens a little, not often with a *free* perspiration; the heat becomes less; the pulse softer and less frequent; the pain in the head, back and extremities, less violent, and a short interval of sleep, not always refreshing, succeeds.

LI.

In about twelve hours from the time of the commencement of the assault, the skin becomes more dry and heated, without an evident previous chill; the circulation becomes more accelerated; the pulse more full and tense; the pain in the head, never entirely relieved, returns with increased strength; the lumbar pain more distressing; delirium super-

venes; the epigastrium exhibits tenderness on pressure in a majority of cases; in children, convulsions sometimes come on; in adults, seldom; the bowels are constipated, and the tongue more loaded with a white or yellowish coat, yet moist at the edges, but generally showing a dryish streak in the middle.

In a few hours there will occur another remission, after which the exacerbation returns with increasing violence; all the symptoms above enumerated being aggravated; the tongue, unless decisive measures have been resorted to, now becomes more dry and brownish; the teeth look glossy, and, as the disease advances, have more or less of a brown sordes collected on them; the delirium is more constant; the remissions less distinct; the sclerotic coat of the eyes becomes vascular; abdominal tenderness and tumidity increase; inflammation, more or less acute, has taken place in the brain or its membranes, the liver and alimentary canal; the pulse declines somewhat in force and increases in frequency; the heat is less; the

extremities become cooler and cooler; coma, with subsultus tendinum, appears, and the sufferings of the unconscious patient will soon be at an end—the period is uncertain—from eight or nine to twenty days or more.

LII.

Such is the usual course of a severe case of remittent fever, if not subjected to timely and appropriate treatment; and it may be laid down as an unvarying rule, that when the arterial excitement declines without a corresponding declension or melioration of the other symptoms, and without, at least, a partial restoration of the functions, a fatal issue is at hand.

In a majority of cases, under ordinary circumstances, the result would be different. The exacerbations, after the seventh or ninth day, decline in severity; the pulse becomes softer and slower; the secretions are gradually restored; the tongue throws off its white or brown crust; the skin becomes moist, and a sweat, more or less profuse, brings on a solution or crisis of the fever.

LIII.

Some cases have been seen to terminate favorably, without remedies, by a spontaneous diarrhœa. The arterial action never rises high, the tongue continues moist and but little changed in appearance, and regular remissions occur throughout; there is little or no pain in the head or lumbar region, and no abdominal tenderness. Let no physician, however, be induced by the apparent mildness of the symptoms, to stand by as an idle spectator. A fever *may* prove ephemeral, or be mild throughout, but it also *may*, after a very mild commencement, assume, in the second or third exacerbation, symptoms of immedicable severity.

LIV.

Authors have attempted to distinguish various species of remittent fever, by the prominent indications of their tendency to an "inflammatory or nervous diathesis," or "to malignity." It appears to me that they have signally failed in laying down the diagnostic

signs by which they may, with absolute certainty, be known. Heat of surface, more or less intense; increased action in the pulse, more or less strong; delirium, mild or furious; pain in the head, in a greater or less degree of severity, are noted as symptoms in *all* the species, and after all, it is acknowledged that there is a certain something, a "je ne sais quoi," seen in the countenance of the patient, but *unsusceptible of description*, by which the various species may be distinguished.

It is well for the patient that the *name* of the disease, in this day, gives no particular information with regard to the treatment to be pursued; and that to distinguish remittent fever by different names, to each of which is attached a long catalogue of unimportant symptoms, is unfounded in nature and useless in practice.

LV.

It has been stated, in LI., that in severe cases not subjected to timely treatment, evident manifestations of visceral inflammation soon appear.

A deep-seated pain in the orbits of the eyes affords probably the first sign of commencing cephalitis. The veins of the sclerotic coat of the eyes are not yet injected, but soon will be: there is no delirium yet, but it is approaching with rapid strides. Pain in the head can now only be felt when that part is agitated or the globe of the eye rolled about or compressed; but it soon will be manifested with a violence which, in the opinion of the patient, threatens the parietes of the cranium. There is nothing more common than the complaint, "My head will burst."

LVI.

When the stomach, the intestines, the liver, or the spleen is inflamed, it may generally be sufficiently ascertained by pressure on those parts. If the stomach be the principal seat of the inflammation, the epigastrium will be found very tender, and much pain will be produced by the slightest pressure. In like manner, pain produced by pressure on the right hypochondrium, about the umbilicus, or the left hypochondrium,

will point to the liver, the intestines, or to the spleen as the affected organs.

It should be observed here that the visceral inflammations accompanying, and, it is believed, constituting in a great measure the pathological character of our endemic fever, are different from the primary, idiopathic inflammations of those organs. In the former, the mucous or villous coat, in the latter, the serous membranes, are the seat of the disease. There is also much difference in the violence, the duration, and the comparative danger of the two diseases, more especially in the abdominal region.

LVII.

The young practitioner will sometimes meet with cases of doubtful and anomalous character, and his mind will be agitated with doubts and fears with regard to the course to be pursued. Under such circumstances I have, in my earlier years, experienced indescribable suffering. He alone whose "constitutional hardiness of nerve cannot feel,

and therefore cannot fear," will be indifferent.

The best mode of obtaining relief from these distressing anxieties is to examine carefully and deliberately the pathology of the case, draw on the resources of the sober judgment, take your measures, and, in dependence on Divine assistance, pursue them with firmness, watching the effect of remedies, and leave the event in the hands of Him who alone can heal.

I have said and shall say nothing of *critical days*, so carefully noted by some modern and many ancient writers, believing with Professor POTTER, that "it is high time this remnant of superstition should be exploded. . . . The termination of all fevers depends upon the intensity of the causes, the inherent power to resist them, and the treatment pursued. The energetic practice of modern times sets at nought all the calculations of judicial astrology, by taking the cure out of nature's hands."

Chapter VI.

TREATMENT OF INTERMITTENT FEVER.

Fever *can* be cured.—Bloodletting vicarious to the critical sweat, and in pneumonia to expectoration.—*Vis medicatrix naturæ*.—Treatment of the cold stage.—Erroneous view.—Usual course.—Treatment of the cold stage.—Cold sweat or purging in the chill very dangerous.—Measures to be adopted.—Perseverance in them.—Bleeding in the chill.—A case.—Mackintosh's practice.—Treatment of the hot stage.—Cause of pain.—Important precept.—Abdomen should always be explored.—Blood vessels of the brain more liable to injury than others.—Davidge's opinion, not tenable.—Stokes.—Effusion not always fatal, but always dangerous.—Use of the ventricles of the brain.—Mode of feeling the pulse.—Abdomen, tongue, &c., to be examined.—Bloodletting, when necessary and when not.—When doubtful, how to proceed.—After treatment.—Extent of bloodletting.—May be carried too far.—Emetics when indicated, and when contra-indicated.—Their action in relieving congestions.—Choice of cathartics.—Vulgar and groundless prejudice against mercury.—Calomel, safe, convenient, and efficacious.—Indispensable in certain cases.—To be followed by other medicines.—Drastic purges seldom proper.—Demulcent drinks.—Treatment of succeeding paroxysms.—Important caution.—Time to give cathartics.—Local bleeding.—Preparations of bark.—Sulphate of quinine.—How to give it.—The bark more effectual in preventing relapses.—Epispastics, when to be applied, and where.—Diet.—Indulgence in eating dangerous.

L. VIII.

THERE is high authority for the opinion that

fever cannot be cured. One* eminent physician has pronounced this sentence without hesitation or qualification; and another,† of deserved celebrity for his learning and professional skill, saw “*only one case* in which the fever seemed to be suspended or removed without an evident crisis.”

If this be true, how humiliating to professional pride! If, however, to shorten a paroxysm of fever by active depletion, to place the patient in a condition which will allow the employment of tonics, and thereby prevent the recurrence of a paroxysm, which, without such measures, would have inevitably returned, be not to *cure* the fever, I confess myself unable to understand the meaning of the term.

LIX.

It will not be denied that certain actions which may be properly called *vicarious*, do take place. Without referring to numerous examples so well known to the profession, it is asserted that the loss of blood from the

* SMITH.

† JACKSON.

arm, or a copious evacuation from the bowels, may be employed as *vicarious* to the usual solution of the paroxysm of fever by a sweat. This is not only possible and rational, but is sustained by facts which recently came under my observation.* Thus, in pneumonia, every practitioner who visits his patients in the first hours of the attack, and who treats his cases with proper energy and on correct principles, will have the satisfaction to meet with instances of perfect recovery without a sweat and without expectoration.

In all deference, then, to such high authority, it appears to me that there is sufficient ground, furnished both by reason and experience, for the opinion that fever *can be cured*. If this were not true, physicians should, in common honesty and candor, throw away the lancet, and abandon a profession which is only an imposition on the credulity of mankind.

LX.

Time immemorial, authors have asserted

* See cases C. C. and M. E. W.

the powers of nature to resist morbid causes, and to throw off peccant humors—and thus to heal disease by producing a crisis, or the discharge or excretion of a nocivum aliquid from the body.

That there is in the human body a certain power of resistance, is rendered at least probable by the fact that so many individuals escape disease when *all* are exposed to the influence of the remote cause. That fever, or, more correctly speaking, arterial excitement, is an effort of the vis medicatrix, is much more questionable. If, indeed, the stage of excitement be such effort, and that effort be salutary, how inconsistent in the advocates of that theory to employ measures calculated to reduce it! The use of the lancet, or even of cooling drinks, would of course only tend to render the healing effort less effectual.

LXI.

The fact that these miscalled efforts frequently prove destructive instead of salutary, cannot have escaped observation. In

+ here read noxium

the stage of excitement a fatal effusion in the brain is more frequently seen than a salutary epistaxis. And the physician who would stand idle by his patient when his brain was oppressed by *intravasation*, and not unsheathe the lancet, but wait for the operation of the *vis medicatrix*, would be as justly chargeable with the death of that patient as the man who, discovering a house on fire in time to extinguish the flames, and failing to use a supply of water at hand, would be guilty of being accessory to the burning of that house. The notion that "heat is friendly and ought to be encouraged," is now obsolete, except with the deluded followers (now almost extinct) of a bold and ignorant empiric of modern days, whose name is not worthy of being mentioned.

TREATMENT OF THE COLD STAGE.

LXII.

During the cold stage of intermittents, little attention has been paid, heretofore, to

treatment. It has not been considered by some, as in itself a morbid condition of the system, but merely as a precursor of febrile excitement to which alone it was necessary to call the attention of the physician.

Those who have been accustomed to take this erroneous view of the chill, will see the necessity of professional interference when they consider well the morbid manifestations. The cold stage exhibits a true *congestive state*. The circulating fluid is driven from the surface (by, if you please, "*a spasm of the extreme vessels*,") and impacted in the large interior veins, especially the *venæ portarum*, and produces that livid or pallid and shrunk appearance of the features, and that anhelation and frequent repetition of deep inspirations, by which the patient hopes to relieve the laboring heart.

LXIII.

The usual routine of treatment consists in laying on additional bed clothes, in administering hot drinks, as infusions of balm, mint or peppermint, and in obstinate cases in

giving laudanum, brandy and water, and applying hot bricks or bottles of hot water to the back and extremities, sinapisms to the epigastrium, ankles, wrists, &c. &c.

One of the most troublesome and distressing symptoms which occur during the chill, is vomiting. This extends through the cold, and into the hot stage sometimes, and will require different treatment according to the accompanying indications. An opium pill, or a dose of laudanum, while the stomach is very irritable, and the head unaffected, to be repeated every half hour or hour, *pro re nata*, will in most cases relieve the nausea and vomiting in a short time. When these fail, a sinapism or other calefacient application on the epigastrium will generally succeed. But after the hot stage commences, opium is seldom admissible. In such cases, small quantities of cold water, frequently swallowed, a lump of ice, broken up and taken a little at a time,—a soda powder, or an effervescing draught, made by mixing \mathfrak{v} of potass. carbonat. dissolved in a spoonful or two of water, with \mathfrak{z} ss of the fresh juice

of lemons—to be taken while in a state of effervescence. These, or such of them as seem to give most relief, may be repeated frequently, until the vomiting shall cease.

LXIV.

The powers of nature are generally, though unassisted, quite equal to the task of relieving the congestion of the portal viscera, and thus diffusing warmth over the surface, by forcing the blood into the superficial vessels. There is reason to doubt whether hot drinks be calculated to hasten that event. The patient complains of great internal heat and is tormented with an urgent desire for *cold* drinks. In such instances it will generally be safe to gratify him: and the physician will frequently witness, after their use, a glow on the surface and a degree of moisture on the skin, which puts an end to the cold, and moderates the succeeding stage of excitement.

Dr. RUSH, the distinguished professor of the Practice of Medicine in the University of Pennsylvania, when speaking, in his lec-

tures, of the *vis medicatrix naturæ*, compared it to “a finger-board on a public road, pointing out to the traveller the *way*, and indicating the distance, but not going one step farther.”

The intense thirst in the cold stage of fever, may be considered as the finger of nature pointing to a remedy. Indulge the desire of the patient for cold water, and the period of the chill will generally be shortened. Cold water taken into the stomach will remove the congestion of the large veins near it; it increases the heat on the surface, by lowering the internal temperature, and thus equalizing it, and often proves an effectual, as it is a convenient, means of producing sweat.*

LXV.

Every practitioner will meet with cases in every year when the most imminent danger will arise from profuse cold sweats, or from excessive purging. These symptoms

* CULLEN's First Lines, Vol. I. p. 43. Ed. 1784.

are especially dangerous if they occur during the chill. The danger is so immediate that life will soon be destroyed, unless the sweating and purging can be arrested, and warmth restored. To effect so desirable an object, diffusible stimulants, as brandy, Jamaica spirit, &c., should be freely used; *mint sling*, as it is called, made by bruising mint leaves in a tumbler and adding brandy, sugar and water; the application of mustard plasters to the epigastrium, abdomen and extremities; dry frictions to the back and extremities; wrapping the legs in a flannel roller wetted with hot spirit; terebinth. liquid or solid carbonate of ammonia, with small additions of opium or laudanum, should be *perseveringly* employed. I say *small doses* of opium, as nothing so soon or so irretrievably exhausts excitability as *large doses* of opium.

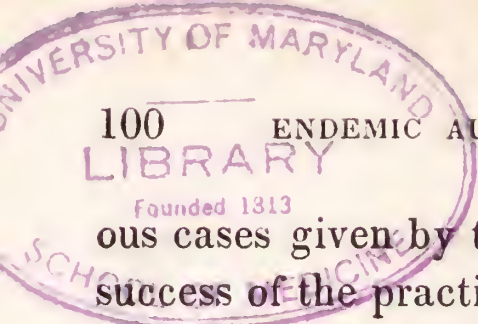
In this critical and most dangerous situation of the patient, the physician should not leave the bed-side for a moment. If the excitability be not exhausted, perseverance will restore warmth and reaction. Then

the medical attendant should carefully watch the progress of it, and be cautious not to proceed too far with the stimulating plan. If it be continued too long, a new and powerful enemy, inflammation of the stomach and duodenum, may present difficulties which, in the then low condition of the patient, will not be easily overcome. The total exhaustion of excitability may be known by the cessation of the purging, if it had previously existed; the absence of nausea and of the radial pulse; by a profuse, clammy sweat, and by the stomach's receiving any quantity of diffusible stimulants without ejecting them. It may be considered as a favorable sign, if the stomach reject drinks while the patient is in this state of prostration.

LXVI.

The use of the lancet in the chill has been long known, but has been more particularly brought up to the attention of the profession by Dr. MACKINTOSH* of Edinburg. Numer-

* Vide Dr. MACKINTOSH's Practice, Vol. I. Art. *Intermit. Fever.*



ous cases given by this gentleman attest the success of the practice in his hands.

In one case only have I opened a vein in the chill, though many cases do occur in which it may be done with perfect safety and advantage. In this case I was induced to draw blood by the opinion which I held of its *congestive* nature, and by remembering the fact that I had many times bled, with great relief, in catarrhal affections, where, though there evidently existed arterial excitement, the patients constantly complained of chilliness.

In the month of September, 1839, I was called to Mrs. F., about 38 years old, who had been for some years the subject of annual attacks of bilious intermittent. I found her shivering with cold, while to me she felt warm, excepting the nose and hands. She complained of much pain in the head. When the arm was bared for the purpose of tying on the ligature, it immediately assumed the appearance of the *cutis anserina*, or *goose-skin*. A vein was opened, and ten ounces of blood were drawn. The chill soon disap-

peared, the pain in the head ceased, her breathing, before oppressed, became natural, and the succeeding hot stage was moderate, and of short duration. A cathartic was given in the intermission. The paroxysm was renewed at the tertian period. The chill was characterised by great præcordial oppression, by nausea and vomiting, and soon by a purging of thin, serous stools. In this critical state I saw her and gave opiates, brandy and water, and applied mustard to the stomach and extremities. By these measures, reaction was soon established and went on with no unfavorable symptoms. In the next intermission she took sulphate of quinine, was blistered on the arms and head, an hour before the expected return of the fit, a bolus of camphor and opium. No return occurred, and she recovered soon on the use of tonics.

This case was evidently shortened by the mode of treatment. In bad cases we seldom see less than four to five or six paroxysms. The result was encouraging—but, as a general rule, it is the safer plan to defer deple-

x Put a 9 after arms and head

tion until the accession of the stage of excitement.

LXVII.

It is difficult to mark by any certain signs those cases which will allow the loss of blood in the chill, and those which will not. Where the symptoms of congestion are clearly marked, and especially where a livid face and pain in the head show the brain to be the principal seat, or that part where most danger is to be apprehended, then blood taken from the arm cautiously, observing the effect and closing the orifice, when relief is obtained, will produce a speedy solution of the paroxysm. This relief will consist in the speedy disappearance of the rigors, the breathing will become freer, and less hurried, the pulse fuller, and warmth will be diffused over the system.

LXVIII.

Dr. MACKINTOSH has before been quoted as an advocate for this practice. Let him speak for himself. "Bleeding," says he, "in

the cold stage will, in a great majority of instances, cut it short: in fact it will rarely fail in stopping the existing paroxysm, and in many cases, it has prevented a return of the disease, to which the patients had been long subject, and by which they were nearly worn out. It is difficult to determine what quantity of blood it will be necessary to draw in any given case. Sometimes it will require twenty-four ounces. I have known three ounces suffice—and in one case, one ounce and a half produced the full effect. The larger the orifice in the vein is made, the greater is the chance of arresting the disease, at a small expense of blood. But in many cases the operation is attended with considerable difficulty, from the convulsive tremors which affect the whole body. I was once successful in arresting the disease, by bleeding in a cold stage, which had continued twenty-six hours; but I regard this as an extreme case. The blood sometimes only trickles down the arm, and as the system is relieved, the stream becomes larger and stronger, till at last it springs

from the orifice, and frequently before six ounces are taken, the patient will express relief from the violent pain in the head and loins, and it will soon be observed that he breathes more freely. If the patient be properly managed with respect to bed-clothes, neither hot nor sweating stage will in general follow. Most of those who have been treated by myself, or by my pupils under my immediate inspection, have fallen asleep immediately after the operation, but some have even got up and dressed themselves."

TREATMENT OF THE HOT STAGE.

LXIX.

Early in the hot stage of intermittents the circulating mass is urged on, by the vis a tergo, into the weakened vessels of the predisposed organ; their parietes are distended; pressure is thus made on the nerves of the part, and pain, indicating the organ on which the fever exerts its force, is thus produced. This local affection is generally

to be ascertained with sufficient accuracy, where no pain is complained of, by requesting the patient to shake his head, or to roll his eyes, or by applying the pressure of the hand on the abdomen.

It is in this stage, frequently not until the second or third paroxysm, that the country practitioner first visits his patient. A careful examination will reveal the pathological aspect of the case. And here let me inculcate a most important practical precept:—*The abdomen should always be explored, not even excepting those cases where the head, breast, or extremities, are clearly pointed out as the principal seats of the morbid affection.* If pressure with the open hand afford no clear information, *pointed pressure with the fingers* will seldom fail to detect some visceral lesion.

LXX.

In cases where cerebral determination is the prominent symptom, danger is always to be apprehended. The pain, as before noticed, is produced by the enlargement and consequent pressure of the blood-ves-

sels on the brain. Admitting, as a fact, what is at least doubtful, that the coats of the blood-vessels distributed through the brain are of equal thickness and strength with those in other parts, it is certainly true that the soft medullary structure in which they are embedded, does not afford an equal degree of support to their parietes. Thence may justly be deduced the inference that, *cæteris paribus*, the blood-vessels of the brain are more susceptible of injury from arterial excitement than others.

LXXI.

I am aware of the opinion of the late Professor DAVIDGE, who ranked as second to no physiologist of his day, that the boney case which envelops the brain, admits of no dilatation, and that one drop of blood cannot be introduced into that organ without driving another out; and I readily admit that when *full*, it can only contain a *certain quantity* of blood. But who will assert that the vessels always contain that exact quantity? Who will contend that the individual who ab-

stains altogether from food for some hours or a whole day, or for many days, as the sick generally do, has the same quantity of blood in the sanguiferous vessels that he had before his abstinence commenced? And is it not, therefore, fair to conclude that, when the vessels of the brain are relaxed, a full meal, or increased arterial action may produce a more than natural plethora in that viscus? It is demanding too much to require us to believe that the vessels are always so full as not to be capable of receiving another drop; and it remains to be proved that the loss of equilibrium in the contents of the arteries and veins of the brain is, according to ABERCROMBIE, the cause of all the phenomena of cerebral disease.

LXXII.

For the most part the cerebral affection consists merely in increased vascularity. There is either an unusual quantity of blood in its vessels* or more than ordinary action

* Dr. STOKES, of the Meath Hospital, one of the ablest physicians now living, contends, in his lecture on paralysis, that the brain

in the arteries of the part. But in some cases a true phrenitis exists, terminating, when fatal, by an effusion of lymph, between, or on its membranes, or of serum or blood into the ventricles.

This effusion, if not in such quantity as to derange the action of the brain by pressure, is not always necessarily fatal. Blood, we have the undoubted testimony of Dr. STOKES, has been effused and absorbed or converted into organised matter; and I have seen cases

is a *compressible* organ. "Here is a specimen," says he, "of apoplectic effusion. See how extensively the substance of the brain has been torn. The cavity formed in this way, is, you will perceive, filled up with a large clot. Now there is one consideration which strikes us at once in looking at an effusion of this kind into the substance of the brain, whatever may be its situation or extent, and this is, *that the brain must be a very compressible organ.* Here we see the brain torn, a cavity of large size formed, and this completely filled with blood. Now it is obvious that the rest of the brain must give way in order to give room for the formation of this cavity. If then, it be true, that the brain is compressible so far as to admit of the formation of a large cavity, it necessarily follows, that, contrary to the opinion of Drs. ABERCROMBIE and CLUTTERBUCK, the *quantity of blood in the brain may vary* and be greater at one time than another. These authors think that the quantity of blood circulating in the brain never varies; but here you will perceive we have a remarkable cavity and it is plain that the rest of the brain must have yielded before it could be formed—and it follows as a natural inference that the brain must be compressible,

in which dilatation of the pupil, strabismus and incontractility of the iris afforded ground for believing the existence of effused fluid, and which, nevertheless, had a favorable issue.

LXXIII.

This fact furnishes additional ground for the conclusion that the ventricles of the brain, like all other known cavities of the body, are supplied with lymphatics. The effusion *may* be in small quantity—the exhalents

and that, consequently, the quantity of blood contained, may vary at different times.

“It may be argued against this that the illustrative proof in this case is derived from a pathological condition, and that under such circumstances, the brain has room for the formation of a cavity by the emptying of some of its vessels. Here, it is urged, is a cavity, but the emptying of the vessels of the brain compensates for it. Thus, room is found, and there is no increase in the quantity of blood circulating in the brain. This, however, I look upon as a mere *petitio principii*; nor have we any reason to think that in a case of apoplectic effusion, there is any corresponding emptying of the vessels; for dissection almost always shows a *surcharged state of all the vessels*. The result, then, in my opinion is, that the brain is compressible and may admit a larger quantity of blood at one time than it does at another. On this subject I advise you to consult Dr. MACKINTOSH’S work on the practice of physic, and also the review of Dr. CLUTTERBUCK’S essay on Apoplexy in the London Cyclopædia of Practical Medicine as given in the Dublin Medical Journal, Vol. II.”

may, in consequence of the reduction of general vascular action, cease to pour out their fluid, and the absorbents *may* take it up. All this *may* happen. An effusion, however, into the ventricles of the brain, affords little hope of relief; and when its characteristic signs are present, the physician will seldom be deceived in anticipating a fatal issue.

The ventricles of the brain serve an important purpose in the animal economy, viz., to obviate the effects of pressure on that organ. Were there no cavities, fatal pressure would follow every instance of turgescence in its vascular apparatus.

LXXIV.

When the physician enters the bed-chamber of his patient, a few minutes should always be allowed to pass before he applies his fingers to the radial artery. I say *fingers*, because there is decided advantage in feeling the pulse with all of them. A much more accurate judgment can be formed of its degree of fullness or tension than when one only is used. If equal pressure be made,

and the pulse be soft, it will be felt only by the finger nearest to the superior portion of the artery; or if felt by those nearer the hand of the patient, it will be very indistinct. If the pulse be tense or corded, the throb will be plainly felt by all the fingers, and it will be found that much pressure is necessary to destroy the pulsation.

The propriety of waiting a few minutes before examining the pulse is obvious. The presence or sudden entrance of any person not of the family, accelerates the circulation, communicates to it an unwonted sharpness, and thus may mislead the most careful.

The pulse should be thoroughly examined at the radial artery, and, when there is cerebral determination, the carotids also; and the patient or nurses should be questioned with regard to the state of the secretions and excretions. The abdomen should be then explored—the tongue examined, and the state of the stomach ascertained—whether there be an acid or bilious taste in the mouth—if vomiting, the nature of the matter thrown up: if the vomiting occur from

taking drinks, ascertain what time intervened between swallowing the fluid and its ejection—bearing it in mind that the instantaneous ejection of drinks indicates either inflammation or morbidly increased sensibility of the mucous membrane of the stomach.

LXXV.

If there be found a high grade of arterial action, the first step is to reduce it by taking blood from the arm. If the skin be hot, the pulse quick and full or hard, with pain in the head or loins, more especially if there be abdominal tenderness, there is no room to doubt with regard to the absolute necessity of the measure. And here let it be observed, that we may not expect so high a degree of arterial excitement in cases of primary fever as in the phlegmasiæ.*

But when the pulse is soft and easily compressed, and not much increased in *quickness*,† heat of surface not great, no pain, or

* SMITH on Fever.

† There is a real distinction between *quickness* and *frequency*. Quickness means the celerity with which each pulsation is made; frequency, the number of pulsations in a given time.

very slight, in head or back, no epigastric or abdominal tenderness, the treatment during that paroxysm may be safely trusted to saline neutrals, effervescing draughts, as soda powders, &c., cold water, light bed-clothes, &c. &c. The patient, burning with thirst and ardently desiring cold drinks, should not be restricted in the use of cold water, or even iced water in moderate quantities, when agreeable to the stomach,—with this caution, that its use is inadmissible during the exhibition of antimonials. *Large draughts* of cold water are seldom to be used without some care. The sudden and great reduction of heat from the stomach might do irreparable mischief.

LXXVI.

The symptoms are sometimes rather of a dubious character, and the physician will hesitate about the course to be pursued. The pulse may not be decidedly strong—the pain indistinct or obtuse—increase of temperature not great. Under such circumstances, doubts have arisen with regard to

the expediency of drawing blood, while the practitioner may fear the consequences of omitting it.

A practised eye will observe the "tout ensemble" of the condition of the patient. A certain plumpness and tension of the skin, a lively glance of the eye, the vigor and celerity of muscular motion, will afford an indication almost as clear as arterial excitement. *Where there is room to doubt*, less injury will probably be sustained from the *cautious* use of the lancet than from its omission. A vein may be opened, and if the pulse immediately give way, or syncope come on, the orifice may be closed before any injury be sustained.

LXXVII.

After the decisive use of the lancet, little will be required during the remaining part of that paroxysm but the treatment mentioned in the latter clause of lxxv., unless, after the bleeding, there should occur decided reaction. In such event the orifice

should be reopened and blood allowed again to flow.

The extent to which depletory measures should be carried is not to be determined by ounces or pounds. It would be well if the physician would never look at the vessel into which the blood flows. With his fingers on the pulse and his eye on the countenance of the patient, he will clearly see when the orifice should be closed. This should never be done while the strength of the pulse is undiminished, the face flushed, and the pain acute. In severe cases there is no safety for the patient until the pain in the head be relieved, or so far mitigated as to encourage the hope that it soon will be. The first notice that an impression has been made on the system by the bleeding, will be given by the increased frequency and diminished force of the pulse.

LXXVIII.

By this mode of procedure, the patient will generally be placed in a state of safety, so far as the reduction of arterial excitement

can make him safe. The succeeding hot stage will probably be milder; but should the same symptoms recur, the same rule must be observed in the treatment of the second paroxysm, the third, &c. &c. &c.

In the treatment of fever, however, let it ever be borne in mind that, where there is evident internal inflammation, the patient *may* be so reduced and prostrated by bleeding, that a trifling degree of unsubdued topical affection may prove fatal. Remedies do not *bring on* healthy actions; but, by reducing morbid excitement, allow nature time to effect the necessary change. The recuperative powers, then, should not be too much impaired. Nature should be *assisted*, not *prostrated*.

It has been before observed, that the first effect of bleeding appreciable by the operator, is an increase of the frequency and a diminution of the strength of the pulse. While therefore the practitioner keeps steadily in view his grand object—to subdue the existing inflammation or inflammatory action, let him beware of carrying depletory

measures too far. When this frequency or irritability of pulse *continues*, active evacuations by bleeding or otherwise must be abandoned, and nutritious aliment, blisters, and even anodynes, be cautiously employed.

LXXIX.

As soon as the intermission shall supervene, or sooner, if the fever be moderate, and seem not to tend to intermit, a cathartic or an emetic should be administered.

If the pain in the head be entirely relieved, if there be no epigastric tenderness, and no inflammatory action in the arterial system, emetics may always be given with safety and advantage, and more especially in those cases in which the stomach is loaded with vitiated secretion. In an excellent paper on the "Use and Abuse of Emetics," in the fifth volume of the *Western Journal*,* Professor DRAKE, of Cincinnati, says: "As they are *unpleasant* medicines, it would be desirable to dispense with emetics altogether.

* Page 543.

But this, I apprehend, cannot be done without injury to the resources of the profession. I am even inclined to believe that many physicians have already gone too far in their neglect of these ancient and powerful remedies: and I propose to recall the attention of the readers of this Journal to their value." Under the head of "Precautions necessary in the use of Emetics," the Doctor observes: "A plethoric state of the blood-vessels, with powerful action of the heart, contra-indicates their use: and when this condition of the general system is connected with inflammation of any of the important organs or tissues, they may be extremely injurious. Thus, in high grades of autumnal fever, and in acute gastritis and arachnitis, they are decidedly improper. The *predisposing* remedy in these and other specimens of intense phlogistic action, is copious blood-letting; immediately after which, if vomiting should be indicated, it may be brought on with facility, safety and good effect, especially if tartarized antimony be selected and so administered, as to excite protracted nausea."

LXXX.

The stomach is intimately connected with all parts of the body by the sympathies; and it will be readily seen that a powerful action of that organ will exert an extensive influence.

When a large quantity of bile is contained in the liver, the pressure of the abdominal muscles (during vomiting) expels it into the duodenum, and thence into the stomach. When the hepatic secretion is imperfectly performed or vitiated, the same pressure, alternating with relaxation, has a salutary influence in restoring it,—and the arterial excitement is reduced by the determination to the skin, which is one of the most salutary consequences of the emetic effort.

It is in this way, viz., by determining to the skin, that the emetic effort, even when full vomiting is not produced, tends to restore the lost balance of the circulation in those cases where congestions exist in the viscera. Whatever enlarges the diameter of the extreme vessels, (or, if the reader please,

“relieves the spasm of the capillaries,” as CULLEN would say,) or promotes sweat, breaks up congestions by unloading the large interior veins.

Emetics are also contra-indicated by great irritability of the stomach. If given in such a state or during the chill, or so as to act during the cold stage, the effect produced on the intestinal canal might be rapidly fatal.

LXXXI.

With regard to the choice of cathartics, it is not, as some erroneously suppose, a matter of indifference, and to be left to the caprice of the patient, but of infinite importance.

It is believed, on good grounds, that mercury exerts an influence on the liver which reduces inordinate and increases defective secretion.* No other article in the materia medica has so powerful an effect on the secreting system. *Saline* aperients have little effect beyond that of expelling the

* Dr. AYRE.

contents, and that imperfectly, of the intestinal tube; and it is in this way only that they are useful in diseases in which the biliary apparatus is involved. The contents of the intestines may be evacuated—dozens of liquid stools may be produced, and we shall have done no good until the *pori biliarii* are emulged.

LXXXII.

The present age has witnessed a rare spectacle—that of physicians who are willing to *sacrifice correct principles to ambition for popularity!* This offering, made on the altar of a vulgar and groundless prejudice, would place the preparations of mercury under the ban of professional interdict. It makes the admission that the ignorant multitude are better qualified to judge of the effects of medicines, than those who have spent all their days in unceasing efforts to acquire a knowledge of their nature and action on the human body.

Should a physician presume to instruct an attorney in the principles of law, a carpenter in the use of the jack-plane, or a blacksmith

how to employ the various implements of his trade, he would be justly chargeable with officious interference in matters of which he was ignorant. The old adage, "ne sutor ultra crepidam," would be triumphantly urged, and he would be laughed at for his presumption. Let him then, when the preparations of mercury are assailed by the ignorant, throw back the proverb and advise the "shoemaker to stick to his last," the blacksmith to his anvil, and the carpenter to his jack-plane.

LXXXIII.

It is admitted that the *injudicious* or too *unguarded* use of calomel has sometimes produced a premature, unnecessary and painful salivation, and that constitutional injury has thus been sustained. Quacks and nostrum venders, "*et id genus omne*," with whom the world swarms, and *will* swarm while ignorance and credulity reign among men, have availed themselves of this, and have secured a transient popularity for their pills and panaceas by averring (what, by the by, is very

often untrue) that they *contain no mercury*, but are purely vegetable.

As a cathartic, calomel is convenient, safe and efficacious. Children may be induced to take it when nothing else could be forced upon them, or if forced, would be instantly ejected by the stomach: and in adults, when the stomach is nauseated, it would be borne, when the sight of a larger dose would produce instant vomiting.

The use of calomel is *safe*. Attention to the effect will admonish the medical attendant to give a Seidlitz powder, some sulphate of magnesia, castor oil or infusion of senna to assist its operation and secure the sick from salivation. Uncombined and unassisted, calomel is seldom sufficient. The evacuations are not numerous, but generally large and fœcal, and the stomach is thus prepared for those larger doses which it is, for the most part, necessary to add.

Calomel is *efficacious*. It is fully ascertained by experience, that no other medicine, as before observed, has so thorough an effect on the secreting organs. If the hepatic se-

cretion be redundant, calomel brings it down to the healthy standard; if vitiated, calomel corrects it; if entirely obstructed, calomel emulges the pori biliarii and re-establishes the natural secretion. In certain combinations, it is an excellent emmenagogue, a good diuretic, and as a deobstruent and absorbent unrivalled. In short, mercury, more than any other article in the animal, vegetable or mineral kingdom, deserves the name of *Panacea*.

The vulgar notion that mercury enters into the bones and is the cause of those pains in the limbs, those ulcers, *mali moris*, (which we sometimes observe to succeed lues,) and of a thousand other evils, the consequences of dissipated habits, and the evidences of a broken down constitution, is not worthy of serious consideration.

LXXXIV.

In selecting the cathartic to be employed, the judicious practitioner will always examine carefully into the state of the secretions, particularly that of the liver. A mer-

curial purge is indispensable in all cases where either an increase, vitiation or obstruction of hepatic action exist.

An increase of the biliary secretion may be correctly inferred from its redundant discharge sursum vel deorsum. A vitiation, from the evacuation per anum, of green or black stools, and an obstruction from a yellow tinge of the skin, from white or clay-colored alvine discharges, or from the absence of bile in the matter thrown up, after *continued* vomiting.

In whatever mode it be effected, it is a fact long known to the profession that the biliary secretion is in direct proportion to the atmospheric temperature. The liver is thrown into increased action by sympathy with the cutaneous surface or the brain. More especially is there a remarkable sympathy between the latter organ and the liver.*

LXXXV.

On the declension, then, of arterial excite-

* JOHNSON.

ment, the patient should take a dose of calomel—and for an adult, ten to fifteen grains are probably sufficient. When a prompt action on the bowels is not desired, it is a good mode to give, every two hours, a dose of three or four grains, until an operation, or until twelve to sixteen grains shall have been given. In whatever mode it be used, it should be followed up in a few hours, say six or eight, unless a sufficient effect be produced, by an infusion of senna and manna, a dose of castor oil, or sulphate of magnesia. When the stomach is weak or irritable, a dose of calcined magnesia, followed immediately by a glass of lemonade, will be found useful in aiding the operation of calomel. A citrate of magnesia will be formed in the stomach which will be found nearly as active as the sulphate.

The use of acids after calomel has been objected to, as they are supposed to produce griping, and frequently severe and painful operation. It is, probable, however, that in the few hours intervening between the exhibition of the calomel and the acid, the former

will have passed the pylorus, and thus a chemical union will be prevented.*

LXXXVI.

The more drastic articles, as jalap, gamboge, colocynth, &c. &c., are seldom necessary or proper—never, indeed, except in those cases of intestinal torpor where the milder articles will not succeed. Much troublesome and dangerous intestinal irritation has been produced by Brandreth's pills and other drastic purgatives. One thing should be remembered by the physician—that many large liquid stools may be procured without benefit to his patient. Stools must be *fæculent* to do much good.

During the operation, if griping be troublesome, gruel, chicken water, barley or gum water, may be freely allowed, and will be found useful in allaying or preventing irrita-

* “When you are administering mercurials, I think you should be cautious in the use of acids. Although medical men are of late rather less cautious in giving acids during the use of mercurials, I think the practice not entirely devoid of danger.” GRAVES' *Clinical Lectures*, p. 261.

tion. These diluent drinks do not, as many erroneously suppose, increase the purgative effect of the medicine. They rather weaken the medicine by dilution—and if taken freely before the operation commences, might prevent it altogether.

LXXXVII.

On the accession of the next paroxysm, if the pulse still resist pressure, and the cerebral determination or abdominal tenderness continue in a considerable degree, the lancet should be again resorted to according to the rule laid down for the treatment of the preceding hot stage. The exhibition of cooling neutrals and drinks should be repeated; and when the intermission again succeeds, cathartics or aperients should again be given, and perseveringly used *while the alvine discharges continue dark and offensive*, if the strength of the patient allow such treatment.

In administering cathartics, from first to last, great care should be taken that they be so given that the operation be over before

the accession of the next expected chill. During a practice of thirty years, I have had this always in view, in consequence of seeing the case of an elderly woman to whom her husband gave a dose of jalap and calomel just at the commencement of the chill.* I was called, and arrived in time to see her die in horrible agony. Two hours did not intervene between the taking of the purge and the death of the patient: and I am fully persuaded that such will be the result of similar practice, unless the mildest aperients be used, and the constitution of the patient be uncommonly vigorous.

It may, then, be laid down as a rule, from which the prudent physician will never depart, that *the operation of cathartics should never interfere (in intermittents) with the sweating stage of the preceding, or the cold stage of the succeeding paroxysm.* In other words, never give a purging dose while the patient is still in a sweat—and be careful to

* Many similar cases have come to my knowledge during my practice, and always from taking purging doses without consulting a physician.

give it so that its operation may be completed before another chill comes on. The sweat will reduce the patient fast enough without the aid of a purge; and, *with it*, will probably soon place him beyond the reach of all your skill.

LXXXVIII.

It will generally happen that bloodletting will not be demanded by the urgency of the case after the second paroxysm, though so favorable a result is not always seen. In many cases, the inflammatory action cannot be so speedily subdued. The physician will be guided by the state of the pulse and the degree of abdominal or cerebral affection. It will, however, generally happen that, in the first two or three paroxysms, active depletion will defend the patient from serious organic lesion, though the fever be not altogether subdued.

When it becomes doubtful whether bleeding from the arm can be carried farther without seriously prostrating the strength, and when evident inflammation is believed

to exist, in any of the viscera, recourse should then be had to local bleeding by cups or leeches,* the latter generally to be preferred. A tender abdomen will seldom bear, without a great increase of pain, the application of cups.

LXXXIX.

Dr. STOKES, of the Meath Hospital, says that it is an important fact that inflammations of the *mucous* membranes are not to be subdued at once by the lancet, as inflammations in the parenchyma or the *serous* membranes of the organs. The effect of drawing blood is not so soon seen, he says, in inflammations of those parts where the circulation is less active. The mucous membranes are not so accessible as muscular

* Though cups and leeches are doubtless useful in many cases, I do not coincide in the opinion which many distinguished members of the profession entertain with regard to their superior efficacy. In visceral inflammations, especially the abdominal, the application of cups or leeches to the abdomen, does not draw blood directly from the diseased organ. The vessels of the skin have a much more remote connection with the vessels of the stomach, the liver or intestines, than the veins of the arm. In fact there are few cases where *local bleeding*, strictly speaking, can be practised.

parts. When, then, general bleeding can no longer be employed, and disease still threatens the mucous membranes, the application of leeches should not be omitted.

For instructions with regard to the application of cold water or ice to the head during the paroxysm, see Treatment of Remittent Fever.

XC.

When a free sweat shall have brought about a perfect intermission, after the stomach and bowels have been thoroughly evacuated, then, and not before, according to my experience, may decided benefit be derived from the preparations of the Peruvian bark.

It cannot be surprising to physicians of the present day that medical writers acknowledge that Peruvian bark is possessed of *little efficacy in shortening the duration of remittent fever*, though it is matter of astonishment that they should think it useful in such cases *by supporting the tone and vigor of the powers of life.**

* Dr. R. JACKSON.

Dr. PERRINE has published a paper on the use of quinine in autumnal fever, in the Philadelphia Medical and Physical Journal,* in which he speaks of that preparation as a good diaphoretic, equal to JAMES' powder, and declares that it may and ought to be used in all stages of the fever without any regard to the state of the pulse or the skin, in doses of ten grains.

I confess I have never tested the efficacy of this practice, and cannot pronounce it pernicious, nay, wrong, from experience. I *can* say, however, that I have seldom used it in *imperfect intermissions* without injury. If quinine or the bark, even where there was a perfect intermission, be continued after the time for the recurrence of the chill has passed, and *during the time the stage of excitement would have existed*, the consequence will surely be an increase of heat and of the force of the circulation. This fact has been noticed by FORDYCE and others, but I have never seen the action

* Vol. XI. p. 250.

thus induced rise so high as to endanger the patient.

XCI.

Dr. MACKINTOSH admonishes his reader to "beware of any preparation of bark while the patient has fever, or complains of oppression about the præcordia." This rule may be considered as generally safe and good; but there are some exceptions. In cases of obstinate intermittents in which there is no satisfactory apyrexia—where the arterial action is insufficient to justify the use of the lancet, I have sometimes concluded that the preparations of bark would do less harm than the continued recurrence of the paroxysms. By the exhibition of sulphate of quinine I have succeeded in arresting the chill, at the expense of some increase of febrile action, which was afterwards reduced by antimonials, aperients, and mercurials.

XCII.

Soon after the sweat shall have reduced the pulse to the natural standard, the exhibition of the sulphate of quinine should be

commenced. In common cases it will only be necessary to give one or two grains every two hours during the intermission, until about six hours before the expected return of the chill, when it should be given every hour, and in double doses. I have never exceeded five grains at a dose, though ten or more have been given without injury. I have found the following recipe :

℞. Quinin. sulphat. g. xvij.

Gum. acac. ʒ iss.

Ol. cinnam. gt. ij.

Sacch. alb. ʒ iij.

Aq. font. ʒ vi.

ft. mixt.

or the quinine in form of pill, so effectual, generally, as to take off my attention from other preparations of the bark. One thing, however, is deemed worthy of notice. After the chill has been arrested, there is frequently danger of relapse; and since I have adopted the practice of giving the bark or its extract, in substance or infusion, after convalescence begins, continuing its use for

a few days or a week, three or four times a day, with mild aperients occasionally, relapses have been of rare occurrence.

The sulphate of quinine, as Dr. PERRINE observes, acts in a remarkable manner on the skin. It is probably for this reason that it is inferior in tonic power to the bark from which it is extracted.*

XCIH.

I shall reserve the chief part of what I have to say about blistering in our autumnal fever, for the chapter on the treatment of remittent fever. In this place it will only be necessary to state that there are many

* Since the above was written, a paper of Dr. MONETT, of Mississippi, has fallen into my hands. The climate in which Dr. M. practised will probably account for the difference of opinion. In *this* latitude (39°—40° N.) I have sometimes given quinine where there existed some febrile excitement, but only in those cases where danger was apprehended from the recurrence of the chill.—I do not hesitate to say that in my hands, and in the hands of other physicians in this vicinity, quinine has been very successful when given in cases where there was a *perfect intermission*, and not when given in the stage of excitement, as advised by Dr. MONETT.

Whether the article be a tonic or a febrifuge—or, as Dr. PERRINE thinks, a diaphoretic—or, according to Professor DRAKE, a narcotic sedative, I will not decide.

cases of intermittent fever in the treatment of which the application of epispastics cannot be omitted without danger.

In those cases in which there is much vomiting, or in which the chill is long and violent, the blistering plaster should be applied to the epigastrium six or eight hours preceding the time for the chill. They should not, however, be employed while inflammatory action continues—while it is necessary to draw blood and administer cathartics.

If the stomach be not particularly affected, the epispastics may be applied to the extremities, observing the same rule about the time of their application. As soon as the plaster shall have been removed, which should not be until the chill has passed, let an emollient poultice of bread and milk, or scalded cabbage leaves, be applied to the blistered surface, renewing the application two or three times in the twenty-four hours.

Under this treatment the blistered part will generally heal in a few days. If not, some mild ointment, as that made by tritu-

rating prepared chalk, with simple cerate or lard, should be used.

Sometimes blisters ulcerate or become gangrenous. In such cases, sometimes very troublesome, various lotions and poultices, as diluted tincture of myrrh and the bark poultice, or sprinkling the surface with pulverized myrrh and charcoal, will become necessary.

XCIV.

Another important aid to the quinine will be found in the following pill :

℞. Gum. Camphor. g. iv.

Gum. op. g. iss.

Elix. paregor. q. s. f. pil. ij.

one to be taken two and the other one hour before the chill ; and in cases of prostration allowing the use of Port or Madeira wine, or brandy and water, according to the urgency of the cases.

Cases will occur in which there will be found no good intermission, and in which the preparations of the bark cannot be given without increasing the febrile action, and

adding greatly to the danger. Such cases will be found, complicated with gastric or enteric irritation, or inflammation, or visceral lesion. In such, mercurials and antimonials in alternate doses, will be indispensable, together with diaphoretics, cooling or cordial, according to the symptoms.

XCV.

Nothing has been said of the proper diet to be used by the patient. In the early part of the attack, when it is necessary to reduce the sick by various means, the articles used should not be such as contain much nourishment, or such as will make much blood. Toast-water, milk and water, one-third milk, tea with a little grated cracker, and these in small quantities, will be sufficient.

When the tonic plan shall be commenced, tapioca, seasoned with loaf-sugar, nutmeg, and a little wine, chicken broth, &c., should be given to support the strength and afford important aid to the tonic medicines.

The medical attendant frequently encounters much vexation and trouble, arising from

the ignorance of the sick and the prejudices of nurses. In the first days of fever there is always a more or less complete loss of appetite. After a few days, however, the patient sometimes, and the nurses always, begin to think that nourishing food is necessary to prevent the powers of life from failing. Neighbors are always kindly concerned and set themselves to work "to cook up" something nice to tempt the flagging appetite. Preserves, rich puddings, custards, jellies, partridges, squabs, &c. flow in from all quarters, and the physician, who had witnessed with triumph the gradual retreat of the fever, is frequently perplexed by seeing a complete renewal of the febrile action with a greatly diminished power of resistance on the part of the patient. Death or indomitable obstructions not seldom succeed imprudence in diet. Dr. BEAUMONT has ascertained that during febrile excitement, when acidity of the fauces with thirst exists, "*no gastric juice is secreted, even when alimentary stimulus is applied*—that drinks do not remain in the stomach ten minutes,

being absorbed or otherwise disposed of; and that food remains for forty-eight hours undigested, unassimilated, and, of course, aggravating the morbid action.”

Chapter VII.

TREATMENT OF REMITTENT FEVER.

Definition of Dr. Davidge, incomplete and incorrect.—Essential fever rare.—Always some local affection.—Treatment of long-continued vomiting in remittents.—The lancet, to what extent to be used.—Cold applications to the head.—Caution.—Graves “on cold applications, and on tepid sponging and steeping.”—Case.—Emetics and cathartics.—Cooling neutrals.—Diaphoretics.—Compound diaphoretics, as Dover’s powder.—Yellow fever and remittents identical, according to Sir John Pringle and Professor Potter.—Fever of Gallipolis, Ohio.—Last resort.—Blistering, when proper and when not.—Modus operandi.—Their effects.—On what part to be applied.—Rube-faciens, when useful.—Mustard and turpentine.—Tonics.—Diet.—The fever of one year not exactly like that of another year.—Synochus and typhus essentially resemble each other.—Local lesion more to be dreaded than debility.

XCVI.

“FEBRIS, miasmata paludum orta, accessionibus pluribus, intermissione, saltem remissione evidente interposita, cum exacerbatione notabili et plerumque cum horrore redeuntibus, constans: accessione quovis die

here read miasmata

unico tantum.”* In his Synopsis of Methodical Nosology, Dr. CULLEN does not give a separate and distinct character to remittent fever, but makes mention of it only as a species or variety of intermittent, and as assuming the varied forms of tertian, quartan, quotidian, &c. The synonymes introduced on the authority of SAUVAGES, VOGEL, BOERHAAVE, RIVERIUS, CLEGHORN, JUNCKER, TORTI, and a hundred other authors, answer no good purpose, but on the contrary tend to produce confusion and dismay in the mind of the young practitioner.

The definition of Professor DAVIDGE is evidently incomplete, and, indeed, incorrect. It gives no place to a gentle perspiration on the decline of the paroxysm or exacerbation; admits an intermission which never occurs, a chill with the returning exacerbation seldom felt, and allows one accession only in each day.

XCVII.

The remittent fever, as it prevails in this

* DAVIDGE's Nosology.

peninsula, is, *in fact*, a continued fever; but in every day there are, generally in the morning and evening, *two* remissions, the morning remission more distinct; and for the first days more or less moisture on the skin on the declension of the pyrexial exacerbation.

Fever, uncomplicated with local affection, or pure, essential fever, is of exceedingly rare occurrence. Dr. STOKES declares that, after many years' attendance in the fever-wards of Meath hospital, he has seen *very few* cases of fever in its simple character.

It is this disposition to local disease, this proclivity to topical lesion of function or structure, which imparts to fever its dangerous character; and although these affections are secondary, it is to them that the attention of the physician should be especially directed. "There is not a single acute local disease," says Dr. STOKES, "which may not occur during the progress of fever."

XCVIII.

With these remarks, I proceed to give

some account of the treatment of remittent fever.

In this form of the autumnal fever the patient is seldom seen by his physician in the chill. When he is, the same mode of treatment recommended in the cold stage of intermittents, should be pursued. If the vomiting continue long after the hot stage has commenced, and the epigastrium show acute tenderness on pressure, and drinks be instantly ejected, there will be ground for apprehending that gastric irritation has been exalted into inflammation. If so, much heat of skin and a corded pulse will accompany the symptoms. In such case, frequently giving a small lump of ice will be highly useful, but the lancet will be indispensable. I have seen this act like a charm. Medical authors have observed, and my experience sanctions the observation, that *long continued vomiting* is very apt to *produce* inflammation where it did not previously exist.

XCIX.

Pain in the head, one of the most common

and most dangerous symptoms, during the exacerbation, when attended with a high degree of vascular action, calls loudly for those measures which have a direct effect on the circulation. There is only one class of remedies to be relied on. The operation of cathartics is too slow—sweating too uncertain, and in many cases, insufficient. The lancet must be resorted to—and to the extent of relieving, or at least mitigating, pain.

The reader is referred to the rules for the treatment of intermittent fever in the hot stage, (lxviii. et sequent.) If any diversity of practice be proper or necessary, it is that the treatment of remittent fever should be more decidedly active. The pathology of this form of fever is better understood than that of intermittents. There is evidently more cerebral, gastric, hepatic and enteric irritation or inflammation; and, as in cerebral affection, so in others, bleeding should be expected to relieve or mitigate the symptoms which indicate its existence.

C.

If the cerebral determination be great and be not soon diverted by the use of the lancet, the use of the *cold dash*, or the application of ice to the head should not long be delayed. A bladder, or varnished silk bag, filled with pounded ice and laid on the head, previously shaved or having the hair cut closely with scissors, or iced water poured on the head from a height of some feet,* is a measure of great power and efficacy. It will reduce the pulse in a short time to a mere thread when the lancet has failed to produce the necessary reduction. Its use should then be intermitted—renewed, if reaction take place to any considerable degree, and thus continued until relief be permanently established.

While on the subject of cold applications to the head, it is proper to admonish the young practitioner that the utmost caution should be observed, lest injury, instead of

* Vide SMITH on Fever.

benefit, result from the measure. "I have seldom met with any person," says Dr. GRAVES, "who seemed to bear in mind the true principle upon which cold is applied as a means of repressing local heat. In cases of determination of blood to the head occurring in fever, the common practice is to have the head shaved and cold lotions applied. Enter the room of a patient who is using cold applications, and you will observe the process conducted with great *apparent* nicety. The head is accurately shaved and carefully covered with folds of linen, wet with a lotion to which spirit of rosemary or some odoriferous tincture has communicated an agreeable and refreshing smell: but, when you come to examine the patient, you will find the head smoking and the heat of the scalp increased. The nurse applies the lotion once every half hour, or perhaps not so often: indeed she seldom repeats the application until her notice is attracted by the steam rising from the patient's head, or until she herself, awaking from a comfortable nap, and going to examine the head, finds the

folds of linen as hot and dry as if they had been hung before the fire. Whether applied to reduce local inflammation in any part of the body, or to cool the scalp in determination to the head, cold lotions, *as ordinarily employed*, do infinitely more harm than good. The cold is applied at distant intervals—its effect soon ceases, and reaction constantly takes place, leaving the part as hot or hotter than it was before. If you put your hand into snow for a few moments, and then take it out, it quickly resumes its natural heat: and if you repeat this at considerable intervals, so as to give time for reaction to occur, the vessels assume a more energetic action, and it becomes hot and burning. If you keep it in snow for a long time, its heat becomes completely exhausted, reaction does not take place until after a considerable period, and very slowly, and the hand remains at a low temperature for a good while. Bear this in mind, for it will direct you in the application of cold to reduce local heat. There is a vast difference between a thing being done and

its being *well* done. So it is with regard to cold lotions. So difficult is it to insure their *proper* application, that I have entirely given them up in hospital practice, and rarely order them in private." Dr. GRAVES then goes on to observe that the head is the only one of these cavities in which long practice has sanctioned the application of cold. Latterly, however, some medical men have declared that they have used ice poultices to the chest and abdomen with safety and success; but he confesses that he is not prepared to adopt the practice, although a review of the subject might incline him to give up his prejudices. He then says,—
"Sponging the bare scalp with tepid or warm water and vinegar, or even frequently *steeping the head and temples, will often succeed much better in abating the headach and restlessness of fever, than any cold applications whatsoever.* In 1832," he says, "in an influenza in Dublin, this pain in the head was relieved by nothing so effectually as by steeping the temples, forehead, occiput,

and nape of the neck *with water as hot as it could be borne.*"

The sound instructions contained in the above extract from a lecture of one of the best practitioners of the age, will justify its length. It brings to my mind a case which occurred in my practice in 1839, before I had seen Dr. GRAVES' opinion on the subject.

In 1839 I visited a patient ill of remittent autumnal fever. The pain in the head was so violent, the eyes so red, face so flushed, and, for a delicate female, the pulse so bounding, that I was seriously apprehensive of the rapid approach of phrenitis. A vein was immediately opened, and blood allowed to flow from a large orifice until some relief was acknowledged. There was no ice at hand, and a bucket of water from a pump in the yard was ordered to be placed in a chair by the bed. In this linen clothes were x soaked, and kept on the face, head, and neck, and renewed every few moments. Notwithstanding these continual cold applications, the pulse reacted in half an hour,

x For clothes read cloths.

the orifice was again opened and more blood drawn. Relief, but not lasting, was obtained by these measures, and, soon after, the cold lotions became disagreeable. Hot water was then substituted, and very soon gave much and more permanent relief.

This case, which soon terminated favorably, taught me to believe that, *when the application of cold becomes painful or disagreeable, hot water may be advantageously substituted.*

CI.

With regard to the exhibition of emetics or purgatives in remittents, observe the rules laid down under the treatment of intermittents (lxxix. to lxxxvi.), with this difference—that, *generally*, it will be necessary to continue the use of cathartics for a longer time. After a preliminary or preparatory bleeding, it is well to commence the cathartic treatment by the exhibition of a dose of the sulphate of magnesia or of soda, still further to reduce vascular action before resorting to calomel or the more drastic articles.

CII.

The depleting plan should be continued and persevered in as long as demanded by the urgency of the symptoms; and, to fill up the intervals between the employment of more active measures, the exhibition of the cooling neutrals, cold drinks, and cool air, will be found useful.

CIII.

When the catharsis has been carried sufficiently far *for the time* (and it will always be necessary to give the bowels some rest), important aid may be derived from the use of diaphoretics. A free action on the cutaneous surface will carry off an exacerbation, or so far diminish arterial excitement as to lessen the danger of organic injury, to guard against which the efforts of the physician should be unceasingly directed.

The choice of the diaphoretic should be determined by the existing grade of action, carefully adapting the article to be used to the excitement. If, after the use of the lan-

cet and cathartics, the action of the pulse be still considerable, but not so exalted as to justify their further employment at that time, the saline neutrals, as tartrite or supertartrite of potash, citrate of potash or soda, with antimonial wine or a solution of tartarized antimony, in minute doses, will be found useful in promoting diaphoresis. But in those cases where the febrile heat is moderate, and no evidence of cerebral, gastric, or visceral determination be present, the addition of sweet spirit of nitre and camphorated tincture of opium to the saline mixture, may be made with advantage.

CIV.

This plan, aided by diluent drinks, as acidulated balm tea (I mean in *mild* cases of fever) and toast-water, given ad libitum, will generally produce a sweat more or less profuse, and a remission more or less complete.

The compound diaphoretics are adapted to those cases only where the force of the circulation has been reduced by previous

treatment. The sudorific drops, composed of sp. nitr. dulc. vin. antimon., and tinct. op. camphorat., and the pulv. ipecac. compos., which has become so celebrated under the name of Dover's powder, afford an instance of the efficacy of combined action on the mucous coat of the stomach. The specific action of each of the ingredients seems to be lost or merged in one combined power. While the opium increases the energy, in some degree, of the sanguiferous system, and allays irritability by its anodyne power, the other ingredients relax the extremities of the cutaneous exhalents, and sweat is thus produced.

CV.

Much caution should be observed in the exhibition of the preparations of opium. *Uncombined, opium is inadmissible when the skin is hot and dry, and the tongue red or brown.* Accompanying such symptoms as these states of the tongue, there is reason to apprehend more or less of gastric or enteric irritation, if not inflammation, if any credit be given to the opinions of two accurate ob-

servers, ABERNETHY and BROUSSAIS. It must not, however, be concealed that Dr. STOKES, whose opinion is always worthy of attention, that the condition of the tongue affords information, *not of the morbid condition of the intestinal canal in particular, but of the system generally.* The varying opinions of these distinguished men will not, however, lead to any difference in practice.

CVI.

Steadily pursuing these measures, the practitioner will generally find that the febrile symptoms will be so far subdued within the first week as to give no farther anxiety for the issue. I say *generally*, for, as in malignant fevers, so in our peninsular endemic, cases will sometimes occur which baffle the art of the most experienced and judicious. In all diseases, the pathological character of which is visceral inflammation, there is a grade of indomitable severity, in which professional skill will meet with certain defeat. We sometimes see cases which closely resemble yellow fever, a disease which, in the

opinion of Sir JOHN PRINGLE, is identical with bilious fever, differing only in intensity.

Professor POTTER, of the University of Maryland, in his excellent Memoir on Contagion, inculcates the same doctrine, though the object of his Memoir is to establish the *non-contagious nature* of yellow fever. In that work he gives an account of a fever which appeared in a detachment of the United States army, then stationed at Gallipolis on the Ohio river. The fever doubtless originated from a pond near the cantonment. While the neighboring village was suffering from the fever, the garrison was healthy. In a few days, however, the wind, which until that time had blown in a direction from the pond to the village, now changed and brought the exhalations from the pond towards the camp. "In five days half the garrison were on the sick list, and, in ten, half of them were dead." During the prevalence of this mortality, the symptoms so accurately described by Maj. PRIOR, were those of yellow fever. After the pond was filled up, and fresh earth was spread

over the surface, the fever did not appear *in this form*. It became a common remittent, and gradually assumed the intermittent form, thus rendering it extremely probable that the cause of *yellow fever* and the *common endemic* of these latitudes is *identical*, differing only in the degree of concentration; and the fevers the same, differing only in grade.

CVII.

Too often, notwithstanding the most judicious treatment, it will be found, in those cases which had undisturbed possession of the system for some days before a physician was called, that the fever will decline in severity without lessening the danger. The tongue will become dry and brown or red; the skin harsh and arid, while the alvine discharges will be dark and offensive; the abdomen tumid and tender, and delirium constant. Under such alarming circumstances not a moment is to be lost. Cups or leeches should be applied to the abdomen; calomel and pulv. antimonial, be given in doses of two to four grains each, every two

or three hours, according to their effect; mucilaginous drinks freely allowed, and an epispastic applied over the abdomen and on the lower extremities. The additional use of mercurial frictions should not be omitted: and when, by the combined internal and external use of mercury, which in such cases is our *only hope*, the gums become swelled, and ptyalism appears, there will be ground to expect the recovery of the patient, even in the most hopeless cases.

USE OF EPISPASTICS.

CVIII.

Blistering, by the application of plasters made of cantharides, has been recommended by all writers on bilious fever, and much mischief has been done by their too unguarded and early use. They are revulsive agents, drawing off action from one part by increasing it in another. While the inflammatory symptoms run high, and while it is still necessary to use the lancet, the stimulus of the cantharides renders their employ-

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ment not only useless, but positively injurious. There is a *blistering point* which is too carelessly attended to. When there is determination to the head, or inflammation in the brain or its membranes, blistering plasters should never be applied until cold applications to the scalp, and bleeding, general and local, are no longer admissible. Then, and not till then, some benefit may be expected from their employment.

CIX.

The vesicles formed by the action of the cantharides, are generally filled with serum; but we sometimes see them consist of lymph. This last is only effused in those cases which are decidedly inflammatory, and when seen, affords a sure indication of the premature use of the epispastic.

CX.

The discharge of serum from the blistered surface, and, after a few days, of pus from the inflamed skin, is too inconsiderable to exert much influence on the general system;

and hence it is probable that the *modus operandi* is by their stimulus. This has not, however, been settled by the common consent of medical men.—We see patients who, previous to the application of blistering plasters, were languid and listless, assume a cheerful and animated countenance; the before creeping pulse becomes fuller; the pale and cold extremities, where the circulation had nearly ceased, becomes warm, and the glazed and sunken eye grows bright and lively. In short, the effect resembles that produced by a glass of wine, though in a less degree, and accounts readily for the benefit derived from blistering in arresting the fit of intermittent fever.

CXI.

But there is another effect which *follows*, if it is not directly *produced* by the application of epispastics, viz., a gentle and general sweat. This may probably be accounted for by the fact that, while the epispastic is drawing, the patient remains motionless, as every motion is attended with pain. Thus

the covering of the bed is undisturbed, and no variations occur in the temperature of the surface of the body. To whatever circumstance, however, it is to be attributed, the fact is indubitable that, in many cases, a free and general perspiration is the consequence of their application; and in remittent fever much benefit is derived from this source.

CXII.

When the physician judges that blistering is necessary, the extremities are the parts on which, *in general*, they should be applied. But when there is much gastric disturbance, or a tendency to spontaneous purging, either of serous or bloody stools, the abdomen, from the epigastrium downwards, is the place, from the blistering on which, the greatest amount of benefit is to be expected.

CXIII.

Rubefacients, though useful, make no permanent impression, and of course are not so much to be relied on in common cases. Where, however, the *extremities are cool and*

the general action very feeble, they are highly useful; and as little or no danger is to be apprehended of a consequent gangrene, as we sometimes see from blistering in such cases, the various rubefacients are to be preferred.

Of these articles, those in most common use, and probably the best we have, are mustard and spirit of turpentine. To make the mustard plaster, it should be mixed into a paste with sharp vinegar, and spread thick on a piece of muslin or linen. The best mode of using the turpentine is to wrap the extremities with a flannel roller saturated with it. The turpentine and mustard should both be applied warm, and continued until decided action be produced on the skin. Some hope may be entertained even when the feet are cold and apparently bloodless, the pulse barely perceptible, and the lamp of life nearly extinguished. If there be one spark of excitability, these measures, with the use of diffusible internal stimulants, will rouse it, and the practitioner and patient need not utterly despair. The reader will

remember that the *low* state here spoken of, more frequently occurs in *intermittents*.

CXIV.

Before dismissing the subject of epispastics and rubefacients, it is deemed proper to introduce the opinion of an eminent modern writer. "They generally," says he, "allow them to remain on too long, and the consequence of this is often violent excitement of the organ over which they are applied, great constitutional irritation, strangury, and bad sores. The best mode of using them is to cover the blister with silver paper, and, having put it on with the paper next to the skin, to let it remain until a decided sense of smarting is produced you will have no strangury, no stimulation of the whole economy, no excessive local irritation,* and the inflammation will heal kindly. The mode of applying a blister sprinkled over with an additional quantity of powdered cantharides, and leaving it on twelve, twenty-four, or thirty-six hours, particularly in

* And *no good* will be done to the patient.

the case of females, is nothing better than horse-doctoring. During a seven years' experience at the hospital of Tours, BRETTONNEAU, by attending to this principle, never had a case followed by these troublesome symptoms, and yet never failed in producing the necessary counter-irritation."*

In *my* opinion, certainly not to be put in competition with that of Dr. STOKES, the full effect of blistering is, in many cases, so important, and is so seldom obtained short of vesication, and the evils resulting from strangury, &c., so inconsiderable, we should not hesitate to incur the risk of a trifling mischief in order to secure a greater good. I have constantly forbidden even *gauze* to be placed between the epispastic and the skin, and direct it to be kept on from six to eight hours, unless it be certainly ascertained that the desired vesication is produced sooner. Exceptions should of course be made in the case of children and delicate females, on whom it will seldom be necessary to keep them longer than four or five hours. Deep

* STOKES' Pathol. and Treatment of Gastritis, Lect. V.

and troublesome inflammations, suppurations and mortifications, may always be prevented by the timely application of emollient poultices, and slightly touching the inflamed surface with ol. ricini.

CXV.

When the returns of the exacerbations of remittents shall cease, and the patient may be considered convalescent, it will *sometimes* be necessary to give some mild tonic to recruit the wasted strength. In all cases they should always be given with caution and in connection with aperients, as blue mass and rhubarb, calcined magnesia, &c.

CXVI.

Much mischief has been done by indulgence in eating during early convalescence, as well as before the crisis of the fever. It is known that increased vascularity is the condition of the stomach during the process of digestion. For this reason, as little work as possible should be given to the stomach to do, as the transition from vascularity to in-

flammation is short and easy. More cases of relapse in remittent fever have been produced by indulgence in eating than by all other causes put together. A strict adherence, therefore, to a mucilaginous or farinaceous diet should be enjoined. When convalescence is established, tapioca, the animal jellies and broths, may be added cautiously; and when the patient shall be able to walk or ride in the open air, a more liberal allowance may be safely granted. The convalescence should be watched, as invincible obstructions have been produced by yielding too much to the longings of the patient. The reader is referred back to xcv., page 139.

CXVII.

It is worthy of remark that no fever of one season ever exactly resembles the fever of a preceding or succeeding year; and that, in different stages of the same autumn, the prevailing fever will sometimes demand variations in the treatment. It will also be observed that the individual cases in the same year present variations in type, grade,

and intensity, depending on the constitutional varieties of the individual subjects.

When the autumnal fever succeeds a summer of unusual drought, the cases, though the *number* be less, will generally assume a more decidedly inflammatory character. The practitioner will closely attend to the first cases, watching, with anxious eye, their full development, and thus learning every succeeding year the peculiarities of each. "*Natura nihil fit per saltum.*" We never see an autumnal fever of low grade suddenly succeeding catarrh, cynanche, or pneumony, of a high grade of action, and vice versa.

CXVIII.

Let not the impatient reader, now anxious to come to the conclusion of a subject, perhaps too tediously discussed already, accuse me of endless repetitions if I further remark that, in the fever now under consideration, unless the febrile action be subdued or mitigated in the first days, inflammation, acute or sub-acute, will surely be revealed. The physician, if his measures have been weak,

temporizing, and vacillating, will suddenly see an enemy of ferocious aspect starting up before him, and bidding defiance to his professional tactics. This will be the consequence in those cases distinguished by that type which has been called *typhoid*, equally with those of a higher grade, or those characterized by a phlogistic diathesis. *In all cases terminating fatally, there is local affection consisting in functional or structural lesion.*

In this view of the subject, viz., that *fever has an invariable tendency to local injury*, the young practitioner will find no real difficulty in deciding on the measures to be pursued. Let him bear in mind an old and valuable maxim, "*venienti occurrere morbo;*" and, casting aside all fear of that *raw-head and bloody-bones* invented by BROWNE, of Edinburgh, to frighten the timid, that bug-bear, DEBILITY, to which more victims have been immolated than to the grim idol of Jugger-naut, attack the disease in its *commencement*. By a free use of the lancet in all cases of high arterial excitement, and a more mode-

rate use of it in connection with cupping, leeching, vomiting, purging, and other modes of depletion, in those of a lower grade, *before the fever produces local injury*, that long train of unmanageable typhoid symptoms, that *debility so much dreaded* will be prevented; while a timid and over-cautious procedure will insure that state of things which it was expected to prevent.

In the early part of November, or about the time the ground begins to freeze, our autumnal fever disappears, or only lingers in a few obstinate cases. Diseases of a different kind then present themselves to our attention. But the transition is not very sudden. There is generally a breathing interval, in which convalescents recover their strength, and the worn-out physician reposes from his toils.

Chapter VIII.

CONGESTIVE STATE OF BILIOUS FEVER.

Symptoms.—Loss of balance in the circulation.—Diagnosis.—Change from the congestive to the inflammatory state favorable.—Treatment.—Debility apparent, not real.—The cause.—Use of the lancet.—When necessary and when not.—Emetics.—Cathartics.—Calomel.

CXIX.

IN the congestive, as in other forms of our autumnal fever, the premonitory lassitude is soon succeeded by a chilliness more or less distinct. The precordial oppression is more remarkably severe—the countenance more disturbed and anxious—the paleness of the face assumes a dingy hue—the breathing is irregular, anxious, and *sighing*; there is great dejection of spirits; the extremities are cold—there is a dull, obscure, deep-seated pain in the head—dulness of the eyes, and, for the most part, some injection of the sclerotic coat, and confusion of intellectual man-

ifestations, accompanied by great *apparent* debility or prostration of strength.

After a time, longer or shorter in proportion to the violence of the case, *some* reaction takes place, and the surface becomes somewhat heated, the eyes more suffused and dull, and the pain in the head more severe. Sometimes we see incoherence of the mental operations, delirium, and, at last, coma. The congestion of the organs continuing, the pulse never becomes full and bounding, but is small, contracted, and oppressed.

“The whole appearance of the sick impresses the attentive practitioner with the idea that the system in general is oppressed by some extraordinary load.”* Almost every breath is voluntary, and is not drawn without an effort; the epigastrium is tumid and tender; the secretions are either much diminished or altogether suspended, especially the secretion of bile; the most violent efforts in vomiting eject only the drinks, sometimes mixed with a glazy mucus. The

* ARMSTRONG. *

* here read glairy.

disease is characterized by unusual depression of the circulation, from its source in the heart to the minutest ramifications of the vessels, and sometimes by the total absence, or partial and imperfect development of the stage of excitement.

CXX.

There is a loss of balance between the arteries and veins. In the normal state both these parts of the circulating system are equally filled with the fluid which supplies all the secretions, and sustains and nourishes every part of the body. In congestive fever the large interior veins are unusually full, and of consequence the arteries contain less blood than usual. This pathological condition, it may be supposed, is produced by a diminution of that nervous influence which is necessary to sustain the venous circulation, by the powerful impression of the remote cause. In instances where the remote cause is in a state of high concentration, the energies of the brain and nervous appendages may be so prostrated, that the venous

circulation will be more and more embarrassed, the supply of venous blood to the heart will be more and more diminished, the heart will cease to beat, from the want of its accustomed stimulus, and the patient will soon cease to live.

CXXI.

The blood-vessels and nerves mutually act on each other. It is nervous influence which communicates to the sanguiferous vessels the power by which the circulation is sustained; and a certain degree of fulness and tension in the blood-vessels is necessary to insure the permanency of nervous power. In this state of fever the arterial tone is in direct proportion to the quantity of blood in the arterial system.

CXXII.

It will doubtless be observed, by the attentive reader, that all the symptoms above enumerated have already been mentioned as the morbid indications of intermittent and remittent fever. Every case of the last

named forms is more or less congestive in the cold stage ; and probably the most remarkable difference between a common inflammatory intermittent and a congestive fever, may be found in the fact that, in the former, the congestion is completely removed by the access of the hot stage, while, in the latter, the hot stage is more imperfectly developed, and the portal and other congestions remain, or, in other words, in the simple and inflammatory forms of fever, there is a much more full development of superficial heat than in the congestive. In the latter, the temperature, though *sometimes* increased, is frequently not above, and often much below, the standard of health. The one may be called centrifugal, the other centripetal. (RUSH.)

CXXIII.

The pain in the head in congestive fever arises, doubtless, from the same cause which produces that symptom in the simple and inflammatory forms, viz., the pressure of the sanguiferous vessels on the origin of the nerves. In the inflammatory state the press-

ure is arterial, in the congestive, venous. To a superficial observer, the same morbid condition seems to exist, and is frequently considered apoplectic. In point of fact, however, the pathological condition of the encephalon is very different. In death from the comatose state of congestive fever, dissection reveals no arterial rupture and no red blood in the ventricles. In *true* apoplexy, these, or at least a greatly distended state of the arteries, are always seen. In the one case there is diminished, in the other, increased arterial action. The one state is sometimes relieved and removed by stimulants, the other never.*

CXXIV.

In treating of congestive fever I have not made the usual division into cold, hot, and sweating stages, for the sufficient reason that we do not see these stages succeeding each other with uniformity. In many of the worst cases there is only one stage. And when in others reaction sometimes takes place, and

* POTTER'S ARMSTRONG, note 24, p. 81.

decided feverish excitement becomes developed, the disease so far lays aside its congestive character, and assumes the type of the simple or inflammatory fever. This mutation of form we sometimes witness, and it may generally be considered favorable, as we then have plain sailing, with a fair wind. No adverse gales make it necessary to change our course, and no clouds and fogs conceal a lee shore from our view.

CXXV.

Those who have been educated in the creed that the lancet should never be un-sheathed but in those cases where there are flushings in the face, acute pain, tense pulse, and increased heat, will be very apt to shrink from its employment when the countenance is pale and bloodless, the pulse scarcely to be felt at the wrist, the skin cold, and when præcordial oppression is indicated by continual sighing.

In the commencement of the attack the debility is apparent, not real. Though the patient complain only of *weakness*, let not

the physician partake of his alarm, but calmly institute an inquiry into the circumstances which have produced this sudden debility. An hour before, the patient enjoyed his usual health, and could have borne the loss of much blood without injury. In the meantime nothing has occurred to impair his strength. No alvine evacuations, no colliquative sweats, have drained off the vital fluid or the materials from which it is formed. The *feeling* of debility, then, so suddenly brought on, must be a delusion. It is the inequality in the distribution of the mass of blood, the congested or engorged state of the venous system, which imparts the sensation of a præcordial load, and forces from the patient the complaint of exhaustion.

CXXVI.

In a majority of instances more danger will be incurred from the omission than from the employment of blood-letting. Let a vein, then, be opened; and if no blood can be obtained from the veins, and if the head be the principal seat of the congestion, the

temporal artery, and let blood be taken, at first slowly and cautiously. The loss of a few ounces will not produce dangerous exhaustion in the *early stage of any disease*.

The most inexperienced physician will soon be taught by the mode in which the blood shall escape from the orifice, and by the effect on the pulse, whether the operation be salutary or otherwise. If the blood continue long to trickle down the arm, and at the same time the pulse, before weak, become more feeble and indistinct, the orifice may be closed in time to prevent serious mischief. In such circumstances, a stimulant, such as wine or brandy, should be always at hand that it may be used if the pulse fail. But if the blood, at first coming from the puncture by drops, at length springs from the arm and falls into the basin with some force, the pulse simultaneously rising in strength, no doubt can be entertained for a moment of the propriety, nay, of the necessity of the measure. The nearer the approach made by the stream of blood, as it issues from the arm, to a straight line, the

stronger the jet which it makes from the orifice, the more urgent the necessity for abstracting it.

When the pulse evidently increases in strength as the blood flows, the orifice should be allowed to remain open until a perceptible diminution of the force of the pulse be felt. The result of this practice will frequently be the conversion of a congestive into a simple fever, the treatment of which has been laid down in preceding pages.

There is no peculiar mode of treating this form of fever, when feverish excitement has supervened, that is not equally applicable to all others. The reader will, therefore, revert to the instructions before given, and repeat the bleedings, if the force of the circulation require it.

CXXVII.

The use of the lancet, however, is not always necessary or proper. If the patient be not visited in the *commencement* of the attack, the congested state of the viscera will not be easily removed, and the abstrac-

tion of blood will indeed induce exhaustion, the power of reaction no longer existing. In the less severe cases of congestive fever, some small degree of reaction will soon become manifest, and the use of the lancet in such cases might do irretrievable injury. In such cases an opium pill, gr. i. to iss., to be repeated in half an hour or an hour, pro re nata, and even again, if necessary, will tranquillize the system, and frequently relieve the congestive symptoms, by equalizing the circulation.

CXXVIII.

The use of the lancet should be speedily followed, unless there be clear evidence of *cerebral* engorgement, by an emetic of ipecacuanha or emetic tartar. The influence of this in removing internal congestions will be understood from what has been said before, under the head of treatment of intermittent fever. If decided relief be not obtained by this measure, calomel should be resorted to in a dose of fifteen to twenty grains, and repeated every two or three

hours in doses of five to ten grains, until the liver and intestines shall be unloaded of their vitiated secretions. The stools will generally be almost as black as tar at first, or white and very fetid. When they become natural in color, showing a more healthy biliary secretion, if at the same time the oppression be relieved, and the skin become warm and moist, the most favorable prognostic may be drawn. If, on the contrary, the skin remain cold, and the pulses become weaker, real debility may now be apprehended, and diffusible stimulants should be largely employed, combined with opium and calomel in smaller doses.

CXXIX.

By the use of large doses of calomel in the commencement, we may expect not only an operation on the bowels, but its specific effect on the salivary glands. When this is established, the venous congestions generally give way at once, and we have nothing to contend with but a salivation.

After some free alvine evacuations have

been obtained, opium may, and in cases of weak arterial action, always should be combined with the calomel, in such portions as may check but not entirely arrest its action on the bowels. And when the calomel alone should not soon produce stools, senna or jalap may be given alternately with it. It is of great importance to evacuate the bowels.

CXXX.

As soon as a few stools have been procured, a large epispastic should be applied on the abdomen, previously rendered more amenable to its action by the application of a mustard poultice. There are two modes of removing congestions, viz., by bleeding and by stimulants, general and local. The former method, when admissible, is the safer. When we are under the necessity of having recourse to the latter, wine, brandy, and pills of camphor,* calomel, and opium; or,

* Gum Camphor. gr. xx.

— op. gr. i.

Calomel, gr. vi.

Elix. paregor. 9, i. f.

Pil. vi.

*X here read
9. s. f. or gr.*

turn sufficit facere.

in cases of great prostration, pills of carbonate of ammonia* and opium are among the articles most to be relied upon. A medium between these extremes frequently confirms the truth of the old maxim, "in medio tutissimus ibis." The evacuating plan, by the free exhibition of cathartics and emetics, sustaining the strength of the patient under debilitating discharges by wine with tapioca or arrow root, will in many cases be attended with ultimate success.

CXXXI.

In some instances the stools will be large, frequent and exhausting. The cretaceous† julep, with a few drops of laudanum, assisted by starch injections, will in such cases be found useful. If cool extremities and a

* Ammon. carbonat. gr. xvij.

Gum op. gr. i. or iss.

Conserv. ros. 9. i. f. pil. vi. ✕

† ℞ Calc. carbonat. (Cret. pptt.) ℥ij.

Pulv. gum. acac. ℥ij.

Ol. cinn. vel. caryoph. ft. ij. Ⓢ

Sacch. alb. ℥ij.

Aq. font. ℥vi.

Ft. julep.

✕ - here part 9. s. f.

Ⓢ and here gt. or Guttas - drop

declining pulse show a rapid diminution of strength, spiced brandy, or sound old Port or Madeira wine, may be given freely as drink, diluted with water, and tapioca, properly seasoned with brandy, taken as food. Mustard plasters should be placed on the wrists, ankles, and soles of the feet, and should be succeeded, when they become warm, by blistering plasters. In those cases of great oppression, attended with continual sighing and jactitation, when the lancet has been used without relief, or when the use of it has been judged inadmissible, a full anodyne will generally remove all restlessness, increase the fulness and lessen the frequency of the pulse, and re-establish the lost balance in the circulating system. After this, the judicious exhibition of calomel, with some mild aperient, will frequently be followed by a favorable convalescence.

CXXXII.

I have said nothing of the use of tonics, as quinine, extract of bark, colombo, &c. &c. &c., in congestive fever, because I never saw

them do any good. In almost every case where congestions remain, *the bark, in all its forms and preparations, is most decidedly injurious.* After the disease appears so far subdued that danger is no longer apprehended, small doses of calomel and opium, assisted by aperient measures when necessary, with mild and bland articles of diet of a mucilaginous or farinaceous nature, will bring the case to a much safer termination.

Chapter IX.

CONGESTIVE STATE OF BILIOUS FEVER.

A FACT highly worthy of being known and remembered, but which excites too little attention, may here be mentioned. It is that of those numerous cases of visceral derangement, as physconiaë of the liver, spleen, mesentery, and, probably more frequently than is suspected, of the pancreas,* which begin to awaken attention about February or March, nine-tenths occur in those individuals in whom the endemic was not fully developed during the preceding autumnal months. The sufferer will then recollect that during the prevalence of the fever he was frequently

* In the month of October, 1841, in the post mortem examination of a boy who died, as was thought, of an injury done to the brain by a blow on the head, I discovered a ruptured pancreatic abscess, and about a pint of pus and much disorganized glandular substance in the abdominal cavity. Before death, the tumor was thought to be in the spleen.

unwell ; had a bad taste in his mouth ; felt slightly feverish ; his head sometimes ached a little ; his appetite was not very good, and when he took food in the usual quantity, he soon became puffed up and flatulent. He sometimes resorted to brandy or wine to sharpen his appetite and improve his digestion. There existed a disinclination to pursue with spirit his common vocation, but he was not so decidedly sick as to call in a physician. Doubtless he had imbibed the morbid cause, not in quantity sufficient to produce the usual result, but enough, by its slow and sure action, to generate those obstructions which are so much more to be dreaded. The process may be compared to the slow combustion of a train leading to a magazine. The morbid cause thus advances by imperceptible degrees, to entrench itself in the very citadel of vitality ; and, before serious danger be apprehended, produces an explosion fatal to the vital organs.

CXXXIV.

It is about the time mentioned (in cxxxiii.)

that the physician is called on to prescribe for those hepatic and other visceral derangements, which too often terminate in fatal serous effusions. Bearing these things in mind, we might frequently become acquainted with those, at first, apparently trifling disorders in time to prevent a fatal result.

CXXXV.

It will not be expected that, in a treatise expressly devoted to the consideration of our endemic bilious fever, our attention will be extended to the causes and treatment of dropsical effusions, and to those numerous cases of gastric disturbance which, under the name of dyspepsia, so often disappoint the hopes of the patient, and baffle the skill of the most experienced physician. A dropsy succeeds *those cases only* of fully developed fever which have been imperfectly cured. The same may be said of the above named gastric affections, with the additional remark that these last are sometimes the consequences of long continued antimonials and drastic cathartics. The attempt to cure

such cases by stimulants and tonics, as is too often the practice of some, is about as rational as to expect to extinguish a fire by putting on additional fuel.

CXXXVI.

Physconia, however, of the liver and spleen, having, as is believed, a malarious origin, and being, as Dr. RUSH would call them, "suffocated bilious fevers," may be properly introduced here to the notice of the reader.

In their incipient stage there are few chronic derangements which more readily submit to medical treatment. If allowed to continue until a general cachexic condition is manifested, or until ascitic or anasarcaous effusions commence, little hope can be given of ultimate recovery.

CXXXVII.

The subjects of these visceral derangements, as before remarked (cxxxiii.), are chiefly those in whom the autumnal fever never was fully formed, and, in a few in-

stances, those who had it in the preceding autumn, but were imperfectly cured, (cxxxvi.) The symptoms are—a gradually increasing tumidity of the abdomen, indisposition to exercise, lowness of spirits, sallowness of the complexion, flatulence and acidity, sluggishness, the urine tinges the linen of a yellowish color, and is secreted in small quantity, timidity, continual apprehension of some evil, sometimes lying on the left side is painful, *febricula*, or, as the sick generally call it, “inward fever.” The bowels are slow, and the stools clay-colored, white, or nearly black. These morbid appearances are sometimes so slight, that the subject of them either does not discover his situation, or thinks it of no consequence, until his anasarcaous extremities awaken his fears.

CXXXVIII.

It will be observed, by the intelligent reader, that some of the more prominent symptoms, as above detailed, are identical with those noted by authors as symptoms of hypochondriasis; and he will be surprised to

hear that volumes have been written on that disease without the least reference or allusion to visceral disorder as its cause. Those ancient authors who gave the name of hypochondriasis to that congeries of symptoms, were better acquainted with its pathological relations than many succeeding writers, who have treated it as altogether a mental affection—a “disease of the spirits.” The word hypochondriasis is compounded of two Greek words, *υπο*, under, and *χονδρος*, cartilage, and refers to the parts under the false ribs. The true pathology of the disease is a chronic obstruction of the liver, known by the name of hepatalgia. The remedies advised by these writers, in perfect accordance with their pathological views, were directed to the mind. Among them may be named employment, with the view of diverting the attention from imaginary evils; cheerful company; the sports of the field, as hunting, &c.; play, as chess, backgammon, and cards; music, rural scenery, travelling, &c.

CXXXIX.

When the attention of the patient is once awakened to symptoms, too often neglected until no longer removable, an instinctive apprehension of *bodily* danger drives him to his *medical* adviser. If the disease were purely mental, his *spiritual director* would be more capable of giving counsel in his case. But the poor hypochondriac *feels* that he is diseased, and, anxious for remedies, goes to his physician for advice. The latter, to indulge his *fancies*, prescribes some bread pills, or water colored by cochineal, promising the most beneficial results from their use. This "pious fraud" has been sanctioned by some medical men of reputation; and thus many individuals have been deluded and beguiled with false hopes, until a fatal atrophy, *tabes mesenterica*, or dropsy, has laid them in the grave.

CXL.

While on this subject, it will not be expected that I should enter into a full exami-

nation of that mysterious connection which exists between the body and the mind. Let it suffice to say that they reciprocally act on each other, and when one is suffering, the other is inevitably brought into sympathy. Whatever imparts vigor to one, gives a corresponding tone and strength to the other, and vice versa. While, therefore, the physician wields the instruments which a beneficent Creator has provided for our bodily ills, he will not forget that there is also a *medicina mentis*, a balm for a wounded spirit, which it is equally his duty and his privilege to employ. Every one who has observed at all, has noticed the fatal influence of fear and apprehension of death in many cases of disease. Every one has seen the salutary influence of confidence excited in the mind of the patient in certain cases. The watchful physician will avail himself of this knowledge, and use HOPE as a lever of sufficient power to remove mountains of difficulty. In concluding these cursory remarks on mental affection, I will only add that, though such

may exist, I have never seen an instance of essential mental derangement unconnected with and independent of bodily disease.

CXLI.

A few words now in relation to the treatment of those visceral obstructions mentioned before, (cxxxvii.) In cases of hepatalgia, or enlarged and obstructed liver, the bowels are generally slow. The treatment should be commenced by an active purge, a dose of calomel at night, followed in eight or ten hours by an infusion of senna and manna, or a dose of jalap and supertartrite of potass. After this, ten to fifteen or twenty grains of carbonate of soda may be given three or four times a day. In a day or two it will be necessary to repeat the cathartic, when castor oil or senna may be used, followed, as before, by doses of carbonate of soda or soluble tartar, or carbonate of potass. If the alvine discharges continue to afford evidence of obstructed or vitiated secretion, the purges should be continued, filling up the intervals

by giving carbonate of potassæ or soda, with infusion of chamomile flowers.

This plan may be continued until relief be obtained, or until the patient's strength evidently declines without the removal of the obstruction. In this case, blue mass and rhubarb, in doses gently aperient and alterative, or calomel in similar doses, should be resorted to with a view of producing ptyalism. If these measures should fail, nitric acid internally, together with the nitro-muriatic foot bath, frictions over the abdomen with a flesh-brush or woollen or coarse linen cloth, and along the whole course of the spine; or a large blister on the right hypochondrium should be tried. If all these remedies do not succeed in removing the obstruction, and rousing the biliary organs to healthy action, recourse should be had to iodine and hydriodate of potash, internally.

CXLII.

In physconia of the spleen or mesentery, it is seldom necessary to have recourse to salivation. The use of cathartics, small

alterative doses of blue mass or calomel, abdominal and spinal frictions, gentle exercise, a diet thin and aperient, will generally succeed in removing the symptoms. In cases of long-standing physconia of the spleen, I have seen iodine act like a charm. Regard should be had to the state of the stomach, and it will generally be useful to give at the same time some alkaline preparation, with chamomile, cascarrilla, or an infusion of the bark of the *cerasus sylvestris*, or wild cherry.

APPENDIX.

WHEN this work was commenced, it was my intention to append a number of cases in illustration of my views of the nature and treatment of our endemic fever. Having been disappointed, by the paucity of deaths and the unwillingness of surviving friends, in obtaining opportunities of examinations after death, I have determined that a large number of cases would serve only to swell the size of this manual without adding much to its value. A very few cases, then, only will be given; two of which will probably have some influence in determining the question whether *fever can be cured*.

CASE I.

Mrs. —, a lady of delicate appearance, ætat: 35, the mother of six or seven children, with general good health, though not robust. August 2, Monday.—Had been unwell some days, pain in the lumbar region. To-day became chilly at 1 P. M. Reaction commenced after a short chill. Rose high—pulse about 100, some tension and fulness—violent

nephritic pain, frequent micturition in small quantities, pain in the head, great tenderness in the course of the ureters and the sphincter vesicæ. V. S.: warm fomentations to the inguinal region—warm bath. There was found great relief from these measures. At night small doses (ʒ ij.) of sulphate of magnesia, mallows infusion, and gum-water.

Tuesday, 3d.—Medicine operated slowly through the next day, small stools, greenish and mucous. At night a dose of calcined magnesia—no fever—no pain—seemed pretty well, perfectly free discharge of urine.

Wednesday, 4th.—Not very well this morning. Directed mucilaginous drinks—had no apprehension of an intermittent. About 1 P. M. chill, long and severe—very moderate reaction, distressing nausea and oppression, violent headach, disproportioned to the fever—several thin offensive stools from the magnesia during the chill; pulse not much excited. Gave essence of peppermint and laudanum, and left her two hours. Purging came on again, three large, light, offensive stools—pulse sunk. Pill of opium, and afterwards small doses of laudanum with brandy and water, freely—sinapism to epigastrium and lower extremities. Medicines and external applications acted well—stools checked, pulse rose and became stronger—continued moderated use of stimulants. Left her at 10 P. M. with moderate action of pulse;

and considered her safe from the present paroxysm, evidently of intermittent form. Ordered tapioca, seasoned with brandy, frequently through the night. Visited her again at 1 o'clock. Frequent inclination to stool—directed her to indulge it. Prodigious flatus, but no alvine discharge. Toddy and red drops,* every hour. Thursday, 5th, morning.—Two loose stools. Starch injection with laudanum—cretaceous julep with ol. ess. cinnam. and laudanum. Brandy and water and red drops continued. Empl. episp. to the ankles. Noon.—Complete apyrexia. Ordered quinine, gr. iss., every two hours through afternoon and night. No excitement but that produced by stimulants. Red drops with quinine. Friday, 6th.—Continued quinine with red drops, brandy, tapioca, &c., through forenoon. Gave a pill of camphor and opium, and applied a blistering plaster to the epigastrium, the latter five hours, and the former two hours before the expected return of the paroxysm. Escaped the chill, but had feeble pulse about the chill time, with oppression. Directed her to thrust her finger down to the glottis, with the view of giving relief by the emetic effort. Great relief, after some retching—great eructation—symptoms produced by flatus. Directed warm chamomile tea with carbon-

* The medicine here familiarly called red drops is composed of equal parts of paregoric, Hoffman's anodyne liquor, and spirit of lavender compound. Dose, from twenty to thirty drops.

x here put glottis — 2 to

ate of potash. Evening.—Doing well. Directed tapioca seasoned with brandy through the night.

Saturday, 7th.—No stool since Thursday. Magnesia julep every two hours. Evening.—No effect. Emollient enema. Small stool. No fever. Having seen persons escape the sick fit one day, and have a return of it at the next succeeding tertian period, ordered quinine again, to be taken as before until the hour should pass. Sunday, 8th.—Continued quinine. Evening.—No stool—aperient of rhubarb and magnesia. Monday.—Operated gently. A little feverish. Slight headach. Continued quinine too long. Some tumidity of abdomen, without tenderness. Small doses of calomel, 1 gr. every three hours. Opened the bowels. Corrected the secretions. Convalescent.

CASE II.

Miss —, ætat. 18. August 4th.—General good health, with the exception of slight dyspeptic symptoms. Taken this day with a shivering which did not last long. Pain in the bowels—gastric tenderness—gripping—tenesmus—small dysenteric stools. Moderate arterial action at first. 2 o'clock, P. M.—Directed sulphat. sod. ʒ ij., tertia quaque hora. 8, P. M.—Visited her again. Fever much increased, violent arterial action, with great pain in the head, and considerable relief of the abdominal affection.

V. S. to $\frac{3}{4}$ xvij. sulphate of magnesia, ice to the head, and iced water for drink. Medicine soon operated. When she rose to the chair, became faint, near to complete syncope. Head much relieved. Getting cool. Her fever almost gone.

August 5.—Had a good night. Medicine operated copiously. Arterial action natural. No medicine ordered. Light food in small quantities. August 6th.—Very slightly feverish. Attention to diet. August 7th.—About the same. Ordered a small dose of sulphat. magnes. Operated gently. 8th—Convalescent.

CASE III.

I was called to see Miss ——, a little girl, about 10 or 11 years of age. Very inflammatory habit. Taken with a chill. I had at the time a number of cases of remittent fever. When I arrived, the chill had so far abated that part of the bed-clothes which had been heaped on her were removed. The hot stage was commencing. Skin dry and very hot—tongue but little altered, pulse rising every moment, and violent pain in the head. I immediately took blood until pain in the head nearly ceased, and she became very pale. The arterial excitement abated very soon—a gentle moisture appeared on the skin—the fever departed, and returned no more.

CASE IV.

Miss ——, ætat. 70. August 15.—Was taken with a chill—the succeeding hot stage was stated to be moderate, and soon went off. The next day she was pretty well; on the 17th the chill returned, and a violent fever followed. 18th.—She took a dose of castor oil, and in the evening sent for me. I saw her then for the first time, and found but little fever. The cathartic dose had not acted, and I advised a repetition of it. 19.—Chill again, and fever. I could not see her, as she lived several miles from town, until after night, when the fever had gone down with a sweat. She had suffered much with pain in the head, and had been quite delirious. Gave calomel, and directed ol. ricin. in the morning. Operated well. 21st.—Visited the patient on the decline of the fever. Some moisture on the skin—pulse quick and still very hard and full—intense pain in the head—veins of the eyes injected. V. S. about 20 oz. with much relief. She would take nothing but soda powders—a free sweat succeeded. 22d.—Apparently perfect intermission. Ordered quinine. Took but three doses before fever rose. This day she was visited by my nephew, who gave more ol. ricin. Six stools in the night. 23d.—I visited her in the paroxysm. No sensible chill—but high arterial excitement. Tongue, before white, now brown

and dry—she was calm, but delirious, and *made no complaint* of pain. Pulse very hard and quick, about 100 in the minute. She was bled to 20oz. The tongue became moist and of a better color in less than an hour; soda powders given freely; gentle perspiration, delirium ceased, and danger seemed over for this paroxysm. 24th.—Almost an intermission. Pulv. antimon. and spirit. nitr. dulc. every two hours. At night, episp. to back of the neck and ankles. 25th.—No return of chill or fever. Sp. nitr. gt. xv. with 5 gt. paregor. ; tapioca with a little wine. 26th.—Infus. cort. cum elix. vitriol. Convalescent. 30th.—Was called to visit her. Had taken nothing and had no stool since I last saw her, notwithstanding she was charged to keep her bowels open. She ate oysters and peaches. Soon had violent pain in bowels—chill, fever, with delirium. An aperient enema was given immediately, and a mild cathartic dose afterwards. No return of chill or fever. Recovered favorably.

CASE V.

Mrs. —, ætat about 60 or 70. Large, and generally healthy. Bilious habit. Wednesday.—Had been unwell since Sunday—indistinct chills and some fever—not enough to compel her to go to bed. She took calomel, and several Seidlitz powders, and magnesia, yesterday, after having a chill at 10 A. M.

To-day it came on at 11. The medicine operated very freely. I was called this evening, and found her laboring under a distressing nausea, and complaining much of her head. She was cool, and had a rapid and feeble pulse. Had taken laudanum. Gave an opium pill, and applied a mustard plaster on the epigastrium. Much relief. Directed red drops and tapioca through the night, every two hours. Some perspiration. Thursday. — Apyrexia. Still some nausea—pulse feeble. Red drops. Chill expected at 10. Gum. camph. gr. iij., gum. op. gr. iss., ft., bol. ij., one to be taken at 8 and the other at 9½. Escaped chill. 9 o'clock, P. M.—Quinin. sulph. gr. i. every three hours through night, and every hour through forenoon of Friday, and the same camph. et op. doses at the same time. Escaped chill. Next day an aperient with infusion of bark, to be continued several days. Recovered.

CASE VI.

Mr. —, age about 30; small person, delicate and feeble appearance; was born in New York. This his second year on the peninsula. Was taken on Monday, August 17th. Chill and fever. Did not call a physician, but took, on the 18th, calomel, and followed it up by a dose of sulphate of magnesia. 19th.—Chill and very high fever. Complained much of pain in the head. Visited him in the evening after

the declension of the excitement with a free sweat. Bowels open. Directed the saline mixture (sol. tart.), with antimonial wine. 20th.—Medicine continued, being slightly feverish. 21st.—Chill again, followed by fever with delirium. Visited him in the time of fever. Pulse rapid and feeble. Would probably have borne bleeding in the fever of the 19th, but not now. His pulse was rapid and very feeble—heat not great—mind confused. Directed epispastic to his arms. At night a sweat came on, and was profuse—prostrated, cold, and almost pulseless. Had during night many thin stools of natural color. Was called in the night, and found this state of prostration. Directed Portwine freely, tapioca seasoned with French brandy, and gr. i. of sulphate of quinine every hour. Strangury from the blisters. Sinapism to the inguinal region—a camphorated julep and Holland gin toddy; strangury relieved. 22d.—Pulse looks up. In twenty-four hours he took a bottle of Port, besides the brandy and gin. Continued quinine, and, two hours before the time for the chill, a bolus of two grains of camphor and one of opium. Escaped chill. Had some nausea, and considerable deafness and tinnitus aurium—common effects of quinine, never injurious so far as I have seen. Changed quinine for infusion of bark, with cort. cin. One good stool on 23d. 24th.—Found some fever from too free use of wine and bark by nurses. Directed

an aperient julep of magnesia, and soda powders for drink. At night still some fever. A stool or two. Soluble tartar. 25th.—Fever very slight. At night none. Infusion of bark. Tapioca with wine seasoning. 26th.—No stool. Feverish. Does not bear bark well. Continued aperients, and after some days his bowels became regulated, and he slowly recovered by nourishing but not stimulating food, cooling drinks, and gentle aperients.

METEOROLOGICAL TABLES.

THE following account of the State of the Thermometer, for the months of July, August and September, during the three successive years of 1839, 1840, and 1841, is copied from a Register kept for many years by my friend GEORGE S. HOLLYDAY, Esq. of Chestertown, a gentleman of well known accuracy and intelligence. The blanks sometimes seen, mark the days or parts of days when he was necessarily absent.

The thermometer (Fahrenheit's) is placed on the north-west side of a large two-story brick house, in a porch with a roof.

JULY, 1839.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	74°	84	.....	S. clear and warm.
2	73	80	.....	N. E. cloudy, rain.
3	73	78	.....	N. cloudy, rain.
4	76	78	.....	S. clear.
5	68	74	.....	N. clear.
6	68	72	.....	N. clear, gust, rain.
7	70	76	.....	N. clear.
8	72	76	.....	— rain, clear.
9	74	80	.....	— clear, calm.
10	77	80	.....	Do. do.
11	81	86	.....	S. cloudy, overcast, rain.
12	77	79	.....	S. W. clear.
13	74	79	.....	13th, calm, overcast, rain.
14	75	76	.....	S. cloudy, rain.
15	72	77	.....	S. clear.
16	74	79	.....	calm, clear.
17	76	76	.....	Do. do. rain.
18	75	82	.....	S. clear.
19	79	86	.....	S. clear.
20	80	86	.....	S. cloudy, clear.
21	80	84	.....	S. E. cloudy.
22	81	89	.....	S. clear, gust, rain.
23	81	86	.....	N. W. clear.
24	77	86	.....	N. clear, cloudy, rain.
25	77	85	.....	N. E. cloudy, gust.
26	81	86	.....	N. clear.
27	81	87	.....	N. Do.
28	76	84	.....	S. E. cloudy.
29	76	82	.....	S. cloudy, mist.
30	78	84	.....	S. clear.
31	80	87	.....	S. E. rain, clear, gust.

AUGUST, 1839.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	78°	84	.....	Calm, clear.
2	75	76	.....	N. E. cloudy, rain.
3	73	78	.....	N. cloudy.
4	74	80	.....	N. clear.
5	72	82	.....	calm, clear.
6	74	82	.....	S. clear.
7	77	83	.....	S. W. clear.
8	76	..	.....	rain, S. cloudy.
9	79	..	.....	rain, S. clear, N. W.
10	73	79	.....	calm, clear, N. W.
11	74	80	.....	calm, clear.
12	76	85	.....	S. clear, gust, rain.
13	74	78	.....	N. clear.
14	73	79	.....	N. do.
15	72	..	.....	N. do.
16	71	69	.....	N. cloudy, much rain.
17	66	72	.....	S. cloudy.
18	71	73	.....	rain, cloudy.
19	70	78	.....	N. cloudy.
20	72	80	.....	N. do.
21	75	82	.....	calm, gust, rain.
22	76	..	.....	cloudy, gust, rain.
23	74	79	.....	E. cloudy, rainy.
24	74	..	.....	cloudy, S. E.
25	78	81	.....	calm, rain.
26	78	..	82	do. clear.
27	82	85	82	S. W. clear, rain.
28	78	79	76	calm, cloudy, S. W.
29	68	..	68	N. cloudy, N. E. high wind.
30	66½	64	65	N. E. heavy rain, calm.
31	64	69	65	N. W. clear.

SEPTEMBER, 1839.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	66°	..	..	N. clear.
2	66	71	72	calm.
3	67	74	71	N. E. cloudy.
4	70	74	74	Rain, cloudy, N. E.
5	71	..	74	S. cloudy.
6	75	80	78	S. W. clear, cloudy.
7	75	82	79	S. clear.
8	78	79	79	S. E. cloudy, rain.
9	79	85	82	S. cloudy, clear.
10	75	76	75	N. W. cloudy, clear.
11	72	..	71	N. W. clear,
12	68	69	..	N. W. clear.
13	64	65	64	Do.
14	58	..	65	Calm, clear.
15	64	70	69	S. clear.
16	68	74	..	Calm, clear.
17	66	79	73	E. cloudy, rain.
18	73	77	71	S. E. cloudy, gust, S. rain.
19	68	73	71	N. W. clear.
20	70	80	75	Calm, clear.
21	72	80	76	Calm, clear, S.
22	75	79	..	S. clear.
23	76	..	73	N. clear.
24	70	74	72	Calm, clear.
25	68	74	74	S. clear, wind,
26	68	64	65	N. W. clear, windy.
27	62	64	68	S. E. cloudy, rainy.
28	62	62	60	N. clear.
29	58	62	61	N. clear.
30	60	58	54	N. cloudy, rain.

JULY, 1840.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	67°	72	66	N. clear.
2	65	64	60	N. cloudy, rain.
3	62	66	62	N. E. cloudy, rain.
4	65	..	65	N. clear.
5	66	80	67	Calm, clear, N. E.
6	65	66	61	N. E. cloudy, rain.
7	64	..	68	N. cloudy, clear.
8	70	80	75	N. E. rainy, S.
9	74	..	74	S. cloudy, rain.
10	73	83	75	S. clear.
11	76	84	77	Calm, clear, N.
12	79	92	78	S. clear.
13	78	..	79	S. cloudy, rain.
14	79	86	..	N. clear, W.
15	..	..	..	Clear.
16	..	92	81	Clear, S.
17	79	94	82	S. E. cloudy, clear.
18	84	94	76	S. clear, gusty, rain.
19	78	89	78	S. cloudy, rain.
20	70	77	68	N. clear.
21	69	71	..	Calm, clear.
22	73	87	75	S. clear.
23	74	78	75	S. cloudy, rain.
24	75	..	72	N. W. cloudy.
25	70	81	71	N. cloudy, clear.
26	72	85	77	Calm, clear, S.
27	75	85	76	S. clear, S. E.
28	76	..	81	S. clear, cloudy.
29	79	86	76	S. cloudy, rain.
30	74	..	78	S. cloudy,
31	75	80	75	Calm, S. E. rain.

AUGUST, 1840.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	73°	84	76	N. cloudy, S. clear.
2	72	84	77	rain, S. cloudy.
3	78	84	76	S. cloudy, rain, gust, clear.
4	78	..	78	S. clear, cloudy.
5	78	84	76	S. clear.
6	74	85	79	Calm, cloudy, S.
7	72	78	65	Calm, N.
8	68	71	..	N. clear.
9	70	78	68	N. W. clear.
10	67	73	..	N. clear.
11	76	..	79	S.
12	77	..	79	S. cloudy.
13	75	..	72	S. E. cloudy, rain.
14	71	..	..	N. W. clear, rain.
15	72	84	76	N. clear.
16	72	81	73	N. cloudy.
17	72	..	73	N. cloudy.
18	71	81	73	N. E. cloudy.
19	73	..	74	S. clear.
20	75	86	76	S. clear.
21	78	..	80	S. clear.
22	79	90	82	Do.
23	80	91	76	S. clear, gust, rain.
24	73	82	74	N. W. clear, cloudy.
25	70	80	69	N. clear.
26	65	..	66	N. clear.
27	66	..	70	N. clear.
28	68	..	74	N. clear, cloudy.
29	70	..	74	calm, clear.
30	75	85	76	S. E. cloudy, S.
31	76	85	74	S. cloudy.

SEPTEMBER, 1840.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	70	80	68	S. clear.
2	70	80	75	S. clear, rain.
3	67	72	66	N. cloudy, calm, clear.
4	59	..	62	N. E. cloudy, rainy.
5	60	62	61	S. E. cloudy, rain.
6	63	72	64	N. clear, calm.
7	60	79	66	Calm, clear, S.
8	65	78	70	S. cloudy, clear.
9	69	78	72	S. cloudy.
10	73	80	62	S. cloudy, rain, clear.
11	59	..	58	N. E. cloudy, clear.
12	53	63	56	N. W. clear.
13	55	68	58	N. W. clear.
14	56	70	62	N. clear, calm.
15	61	70	65	Calm, clear.
16	60	80	66	Calm, foggy.
17	65	..	68	S. clear, rain.
18	63	59	57	N. rain.
19	58	..	58	N. W. clear.
20	62	72	64	S. clear, rainy.
21	58	62	52	N. W. clear.
22	48	55	50	N. W. clear.
23	50	..	58	Calm, clear.
24	58	71	60	N. clear.
25	54	70	60	N. foggy, calm, clear.
26	56	..	61	N. clear.
27	65	70	56	S. cloudy, rain, clear.
28	55	..	54	N. W. clear.
29	51	58	58	Calm, foggy, S. clear.
30	60	..	60	S. cloudy.

JULY, 1841.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	82	87	79	S. W. clear.
2	78	81	73	N. cloudy.
3	66	..	67	N. clear, calm.
4	64	..	68	N. Clear.
5	74	..	79	S. clear, rain.
6	76	..	80	N. clear, cloudy.
7	84	..	68	N. E. rain.
8	66	..	68	N. W. clear.
9	68	..	76	N. W. clear.
10	73	..	70	S. cloudy.
11	67	73	66	N. clear.
12	68	76	72	N. clear.
13	74	83	79	S. cloudy, clear.
14	79	87	80	S. cloudy, clear.
15	80	86	80	S. cloudy, clear.
16	76	86	71	N. clear.
17	70	79	71	N. clear.
18	71	82	74	Calm, clear.
19	72	..	78	S. cloudy.
20	74	86	76	S. cloudy, clear.
21	..	85	76	S. cloudy.
22	76	82	80	S. cloudy, clear.
23	80	87	81	S. clear.
24	82	89	83	S. clear.
25	83	90	77	S. cloudy, rain.
26	75	79	..	N. clear.
27	..	..	..
28	..	..	..
29	..	..	..
30	74	..	69	S. rain.
31	68	76	64	N. cloudy, rain.

AUGUST, 1841.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	65	66	65	N. cloudy.
2	68	79	69	Calm, clear.
3	69	..	71	N. cloudy.
4	75	..	76	S. clear, rain, thunder.
5	74	77	72	Rain.
6	71	..	73	N. clear, calm.
7	72	..	72	Calm, clear.
8	76	80	75	S. clear.
9	..	80	78	Rain, S.
10	80	..	76	S. cloudy, rainy, hard.
11	75	..	74	S. cloudy, rainy.
12	70	79	70	N. cloudy.
13	71	..	73	Calm, cloudy.
14	71	..	73	Calm, cloudy.
15	70	81	70	N. cloudy, clear.
16	67	78	68	N. clear.
17	68	77	68	Calm, clear.
18	65	..	68	Calm, cloudy.
19	65	81	74	Foggy, calm, S. clear.
20	..	..	78	Calm, clear.
21	75	88	74	S. cloudy, rain, thunder.
22	77	..	71	N. clear.
23	69	77	67	N. cloudy, clear.
24	67	77	70	Calm, cloudy, N.
25	66	..	66	N. cloudy.
26	66	..	69	N. E. cloudy, rain.
27	70	77	73	Rain, calm, S.
28	73	..	75	N. E. cloudy, clear.
29	76	84	78	Calm, cloudy, S. clear.
30	73	..	75	Rain, N. clear.
31	70	80	72	S.

SEPTEMBER, 1841.

DAY OF MONTH.	THERMOMETER.			STATE OF WEATHER.
	MORN.	NOON.	NIGHT	
1	70°	79	72	Calm, clear, N.
2	77	..	78	S. clear.
3	80	86	80	S. clear.
4	80	84	77	S. cloudy.
5	74	80	71	N. W. clear.
6	74	80	72	N. clear, S. clear.
7	73	76	70	N. E. cloudy.
8	70	78	70	N. clear.
9	68	..	71	N. clear.
10	68	71	68	N. E. cloudy.
11	68	..	72	Calm, clear.
12	75	75	73	N. cloudy.
13	71	..	68	N. cloudy, clear.
14	68	..	64	N. clear.
15	63	..	65	N. clear, cloudy.
16	65	..	..	N. E. cloudy.
17	60	60	57	N. E. rain.
18	61	..	66	N. W. clear.
19	62	..	65	N. clear.
20	..	..	..
21	64	..	65	Calm, cloudy, clear.
22	65	..	64	N. cloudy,
23	66	..	72	S. cloudy, rain.
24	62	..	72	Calm, cloudy.
25	72	..	64	S. E. cloudy, N. W. clear.
26	63	..	66	S. clear.
27	61	72	64	S. clear.
28	69	..	..	S. cloudy.
29	..	..	..
30	..	..	..





