3-5 Robertson (Jas. J.)

SOME REMARKS

ON THE

IDENTITY

OF

SPORADIC AND EPIDEMIC

CHOLERA.

BY JAMES J. ROBERTSON, SURGEON.

Surgeon Genl's Office
LIBRARY.
52142
Washington, D.C.

Huyó, lo que era firme, y solamente
Lo *fugitivo* permanece y dura.—QUEVEDO.

Si ce qu'on voit, on le voyoit bien, ce seroit toujours autant de connu, mais—assez de gens ont toujours dans la teste un faux merveilleux.

FONTENELLE, *Pluralité des Mondes.*

ST. HELIER'S:

PRINTED BY P. PAYN, ROYAL SALOON, No. 45, KING-STREET.

MDCCCXXXVIII.

SURGEON GENL'S OFFICE
LIBRARY

PREFACE.

During the prevalence of epidemic cholera in the North of England in 1832, forty-five cases of the disease in its severer forms came under my observation. Of these, forty-three were exclusively under my own care; and of this last number three only died. In the autumn of the following year, a nearly equal number of cases occurred to me; and in these instances the same mode of treatment led also to similar results. Supposing the principles which guided me in the treatment of those cases—principles which I judged to be fair deductions from demonstrable pathological data—would have suggested themselves to many others, whose opportunities of observation were so much greater than my own, and that they would thus have become generally known and perhaps generally admitted—it was not my intention to have published either my opinions or the results of my experience. Nor was it till the summer of the present year, when cholera broke out with such violence in the south of Europe that my

attention was again in any measure directed to this subject. Prevented by private and unexpected circumstances from proceeding to Naples in order to prosecute more amply my enquiries into the diversified phenomena of this disease—for which, through the kindness of his Excellency, the Count de Ludolf, ample opportunities would have been made available to me,—I have been subsequently led to reconsider, and with more attention, the principles which guided me in the treatment of the cases referred to. Believing them to be of sufficient importance to merit attention, it is my purpose, at some future period—si Deus vitam viresque concesserit—to lay them before the public. The following remarks on the identity of sporadic and epidemic cholera were intended to have formed part of the work referred to; but as they relate to a question which may be said to lie at the threshold of this subject, and as they have no immediate relation to the other questions to be considered, I have thought proper thus to publish them in a separate form.

Aubin Place, October 17, 1837.

REMARKS ON THE IDENTITY

OF

SPORADIC AND EPIDEMIC CHOLERA.

It is generally believed, and by many asserted, that epidemic cholera is a new disease, altogether different from the sporadic cholera of the ancients. The latter, it is said, was characterized by evacuations of *bile*, *sursùm et deorsùm*. The evacuations in the former, it is well known, are composed principally of *serum*. In sporadic cholera, moreover, bilious evacuations, *suprà et infrà*, have long been considered as constituting a pathognomonic symptom, while in epidemic cholera the evacuations are, on

the contrary, regarded as mere precursory symptoms.* In what manner these mistaken notions regarding the cholera of the ancients have originated, it is not necessary, ~~here~~ for the purpose of these remarks to enquire. No doubt they are to be ascribed in some degree to systematic writers, who, while they retained the usual definition of cholera—an evacuation of *bile, sursùm et deor-*

* As such they were considered by the Medical Commission appointed at Berlin during the prevalence of epidemic cholera in that city in 1831, and as such also are they regarded by Andral, Magendie, Biett, Chomel, Bouillaud, Double, Husson, &c. &c., while by others the vomiting and purging are pronounced to be "truly unimportant" circumstances. It is to me inexplicable that the evacuations from the alimentary canal should, in epidemic cholera, be regarded as symptoms merely precursory or in any respect unimportant. Profuse or violent vomiting and purging, by *whatever* means excited, certainly do not only occasion diminution and even failure of the heart's action, and thus indirectly also the cyanosis, asphyxia, and loss of animal heat consequent thereon ; but as certainly also do they cause deliquia animi, aphonia, convulsions, suppression of urine, &c. Aphonia from vomiting was known to Celsus—"vomitus sic ut vox supprimatur." Deliquia animi and convulsions were remarked by Dolæus as the constant effects of profuse vomiting—"in omni nimio vomitu adsunt anxietates cordis, dolor capitis, animi deliquim, nonnunquam etiam convulsiones."—Encyc. Med. p. 274. "A purgante medicamento solet excitari periculosa hypercatharsis quæ subitaneum deliquium animi sæpè affert."—Baglivi Opera. The *active* part which these evacuations have in produciug the more remarkable symptoms of cholera will, in a subsequent essay, be fully pointed out. If, then, these evacuations in themselves, or conjointly with that orgasm of the alimentary canal on which they depend, be capable of producing all the more formidable symptoms usually observed in cholera, *is* there *any* reason why we should look beyond these causes for the origin of the same phenomena in epidemic cholera in which these causes are present in a state of so much greater intensity ?

sùm—have not so much as once adverted to the change which has insensibly taken place in the import of the word *bile*,—a word used by the moderns uniformly in a definite and restricted sense, while by the ancients, as will be presently seen, it was used with greater latitude.

When we consider the smallness of the biliary ducts and gall-bladder, it is difficult to imagine that the profuse evacuations in cholera, described by the ancients, could have been from this source. Nor is it in any degree probable that they were composed principally of bile. We know how small a portion of pure bile is sufficient to tinge of its own hue a large quantity of *egesta*.* In *bilious* diarrhœa, *bilious* dysentery, *bilious* or choleric fever, and other diseases that have received this epithet, because accompanied with, or ushered in by, bilious vomiting —and hence supposed to arise from some morbid alteration of the bile itself—the vomiting of bile is as much a natural and necessary consequence of organic structure as is, in such instances, the vo-

* Vincent Alsarius, speaking of reputed instances of vomiting of *bile* from various causes, says :—Vomitus illi revera non sunt merè biliosi, licet sensui visûs tales appareant, quoniam pura bilis, etiam modica, albas ventriculi cruditates vel copiosas, simili colore inficit, non aliter ac si parum croci copiosissimæ aquæ inspergas, &c.

miting of the *ingesta.* Both are concurrent effects of the same causes, and common to all diseases of the abdominal and pelvic viscera, more especially to those of the stomach and small intestines.* In the

* Speaking of ileus, Lieutaud says :—On vomit premièrement tout ce qui est contenu dans l'estomac ; on rejette *ensuite ta bile.* Précis de la Médecine, t. 1, p. 506. This observation is equally applicable, as far as my observation extends, not only to vomiting in all those diseases that are *said* to be caused by a " redundancy or altered state of the bile," but to vomiting by whatever means occasioned. There is no difference. And if vomiting in any instance be long continued, the bile rejected becomes thinner, less saponaceous, more or less serous, and of a green or dark green colour. Although this alteration of the properties of the bile rejected, can only be regarded as a natural but constant *effect* of prolonged vomiting ; yet bile thus altered, is, and has for ages been, considered the prolific *cause* of disease. The following passage from the Anatomie Médicale of Portal (t. iv. p. 294) expresses sentiments which were at one time universal, and which, if I mistake not, are still very generally entertained :—" Dans certaines dyssenteries et dans le choléra morbus, la bile a une telle acrimonie, que les malades éprouvent des douleurs aussi vives et des érosions aussi fortes que celles que produisent les poisons corrosifs sur les parties molles : *c'est ce que les ouvertures des corps ont prouvé.* A cet égard, on pourroit bien dire, comme Morgagni, qu'il se forme quelquefois dans l'homme des poisons qui le tuent, et que ce ne sont pas seulement des poisons corrosifs." It is difficult to conceive how the supposed fact here alledged could be proved in the manner asserted. Might not the same thing be said, with as much reason, of undigested cucumber, or of aperient medicines, so often remarked as concurrent exciting causes of cholera, &c. It would be well if they who have ascribed so much to the agency of corrupted bile in the production of disease had endeavoured to give us some rational and satisfactory proof that such a corruption in any instance really exists, and that bile thus corrupted is certainly capable of producing any or all of the effects usually ascribed to it,—some better reason than mere *tradition.* The doctrine which considers those diseases to which the appellation *bilious* has been given as having their source in morbid alterations of the

vomiting of persons in perfect health, when this is excited by the simplest means, such as by irritating the fauces, or by gyration, the same thing, though generally in a less degree, is equally observed.* The contents of the stomach are first evacuated, then bile more or less mixed with fluids from the stomach and duodenum. There is no reason to suppose that it was otherwise in the cholera of the ancients; the vomiting of bile was in no respect a pathognomonic symptom of the disease, but was as much a concomitant circumstance as it undoubtedly is in the other instances I have named. To me it seems capable of

bile, I cannot but regard as a mere remnant of the ingenious system of Sylvius de le Boe—a system founded chiefly on the dogmas of Galen. The grosser parts of this system have disappeared from medicine, but the more plausible, though destitute of any better foundation, still retain their place,—when their origin is no longer known or suspected,—in our latest systems of medicine; and seem to influence more or less the opinions of all who have treated of the diseases in question.

* "Pater meus," says Borellus, "vomitum sic per singulos menses instituit ab alio edoctus, qui idem faciens longævam attigerat ætatem; ille verò jam septuaginta attigit feliciter annos; pennam autem novam vel fusum accipit, quibus palatum tangit, sicque diu manet caput ad inferiora demittens, et paulatim erumpunt aquæ claræ tanquam fonticulum facientes in fusi apposita parte; et post aquas veninut aquæ *versicolores et amarissimæ.*" Cent. III. obs. 93. This circumstance is well exemplified in the vomiting of persons suffering from sea-sickness, in whom also I have observed a feeble pulse, coldness of the extremities, collapsed features, and livid hue of the hands, arms, nose, &c.

all but demonstration, that if we are to consider the cholera of nosologists as an evacuation of bile—using this word in its modern restricted sense—no such disease is in fact described by the ancients; in other words, no such disease as the cholera of nosologists consisting in evacuations of *bile, sursùm et deorsùm*, has ever been observed. The truth of this assertion will be farther confirmed when we consider the import of the Latin word *bilis* and its Greek synonyme ΧΟΛΗ, as these words were understood by Greek and Roman writers.

By the moderns the word bile has for nearly two centuries been understood in a definite and restricted sense; and is always used to designate exclusively that fluid which is formed in the liver, and which differs so much in its sensible properties from other animal fluids. So universally is the word now used in this sense, and in this alone, that the fact of its having ever been used or understood in any other is never so much as adverted to by modern writers on cholera. It would seem from Sprengel* that Van Helmont was the first who carefully distinguished the biliary secretion of the liver, now alone denomi-

* Histoire de la Médecine, t. 5, p. 30.

nated *bile*, from the bile or biliary principle supposed by the ancients to be diffused through the entire mass of the blood. Martinius, from Gorrhæus, whose authority in a question of this kind will not be doubted, defines the synonymous words *fel*, *bilis*, ΧΟΛΗ, to be "OMNIS humor in nobis calidus et siccus," and adds, "apud eum (Gorrhæum) vide varias *choles* divisiones." But without enquiring into the various imports of this word as used by Galen and others, it will be sufficient for our present purpose to adduce an example of the sense in which it was used by Celsus. It is evident that, in the concise description of cholera which he has left us, he did not use the word in question in its modern and restricted sense. He says distinctly that the *bile* evacuated upwards and downwards in *cholera* is at first like *water*, then like the washings of recent flesh, that sometimes it is *white*, at other times it is dark-coloured (*nigra**) or of various hues. Notwithstanding the explicit words of Celsus, the author of the article *Cholera*, in the Cyclopædia of Practical

* The word *niger* is usually, but not always properly, translated *black*. This is rather the import of the word *ater*. "*Niger*, quasi *nubiger*, id est, *nubem et obscuritatem* gerens."—*Vocab. è Glossis Veteribus.* "*Niger*, quasi *nubiger*, quia non serenus, sed *fusco* coopertus est."—*Glossæ Latinæ Isidori.*

Medicine, and many others assert that the disease described by Celsus is altogether different from epidemic cholera, because the evacuations are said by Celsus to consist of bile. Nor has that distinguished physiologist, M. Magendie, any better reason for asserting that epidemic cholera and the cholera of the ancients are distinct diseases. In concluding, because no *bile* could be discovered in the fluid found after death in the stomach and intestines of those who died of epidemic cholera, that this last is a new disease, he has evidently fallen into the same error. It is remarkable that M. Magendie's own words, descriptive of the evacuations observed in the late epidemic disease, are almost a literal French version of the description of the fluid evacuated in the cholera described, eighteen hundred years before, by Celsus. The truth of this will at once be manifest by comparing the words of Celsus with those of M. Magendie. This eminent physiologist, after observing that he had found the fluid evacuated in epidemic cholera in most instances like water-gruel or rice-water, adds :—Il ne faut pas croire que le liquide du canal intestinal soit toujours tel que je viens de le décrire ; il est quelquefois rougeâtre, d'autres fois noirâtre, dans d'autres cas, il ressemble

à des lavures de chair.* Now Celsus, speaking of the fluid evacuated sursùm et deorsùm in the disease which he has described, says :—Primùm aquæ similis est, deinde ut in ea recens caro lota esse videatur, interdum alba, nonnunquam nigra, vel varia.† Celsus, indeed, calls the fluid *bile ;* M. Magendie calls it *serum ;* but it is evident that, by whatever name designated, they nevertheless describe one and the same fluid.

But if additional proof be thought necessary to show that in sporadic cholera the fluid evacuated from the stomach and intestines was not *bile*, if the word is to be understood in its modern and restricted sense, we have still more explicit evidence,—and consequently additional proof of the identity of the "two diseases,"—in the writings of some early European physicians ; and if the very concise descriptions left us of this disease by Greek and Roman writers be deemed imperfect, the deficiency is in a great degree supplied by subsequent observers. Pechlin, notwithstanding his prejudice for received doctrines, and his belief that evacuations of bile constituted the distinguishing characteristic of cholera, was nevertheless compelled, by the irresistable evidence of

* Leçons sur le Choléra. † De Medicina, Lib. iv. cap. 9.

facts, to admit that instances of cholera occurred in which the evacuations presented *no trace of bile*. At page 128 of his Observationes Medicæ—published in 1691—he says :—" Ego verò nec hoc observare potui, bilis aut biliosum esse semper hunc fluxum, quando et seri et alterius malè corrupti humoris ingens copia maximam excretionis partem faciat," and again :—" Et quamvis quotidianum non sit choleram esse *acholon* omnisque bilis expertem, novi tamen, quibus serum solum, idque limpidum, dulce, et ad frigus congelabile *ano cai cato* prodierit incomitatâ bile, certè non animadversâ."

As it is important, however, that no room be left for doubt as to the character of sporadic cholera, I shall add the following instance from the excellent author just named, as well as another from Van der Heyde, who wrote half a century earlier. " Cholericus erat, qui in dejectiones vomitusque incidit tam copiosos ut post octo et viginti sellas sedecimque vomitus mirificè fatigatum vires jam jam deserere viderentur, et musculi gastrocnemii tibiæque, quod in cholera est familiare, ad seri detracti inopiam validè contraherentur.—Hic cum de qualitate humoris æger rogaretur, et præter meam opinionem non bilem, sed serum quoddam, aut, si mavis, lympham

dulcem limpidam et post moram viscosam oculis ostenderet, qualem ab initio omnem fuisse sine ullâ bilis notâ *tantùm adjurabat*, *cœpi* mecum ipse decernere posse etiam fluxum esse quasi-cholericum qui maixmam partem sit sero-lymphaticus : id quod deinde etiam uno atque altero experimento probatum vidi."—Obs. Med. p.129. The instance from Van der Heyde,—and many such might be adduced,—is as follows :—" Applé chez un patiant seulement cinq heures après l'attaque de cette félone maladie, je le trouvais accablé de tout ce qui pouvoit servir de prognostication absolument funeste, sçavoir sans aucun pouls, et parole, n'estant ces évacuations qu'une liqueur semblable au clair laict, qui denotoint la destruction de nature y estre ; avec ce furent les yeuls si enfoncés, qu'à grand peine on les voyoit, et les bras et les jambes si retirés de la convulsion, et si coyes, qu'on n'y remarquoit point de movement, et si froids d'une moiteur lui demurées de sa sueur froide et visqueuse, qu'à le voir, et toucher, on l'eust plutôt jugé mort que vif."

Having thus shown that the fluid evacuated *sursùm et deorsùm*, in the cholera of the ancients was not bile, as is universally supposed,—the presence of bile in the evacuations being a mere con-

comitant circumstance*—but a fluid differing in no respect from that observed in epidemic cholera, it

* It would seem that in the severer cases of cholera the *secretion* of bile is generally suspended, or at least greatly diminished—no doubt for the same reason, that the secretion of urine is suppressed, and the movements of the heart so greatly enfeebled. Hence the absence of bile so generally observed in the evacuations in *epidemic* cholera. It has been considered by some that all the phenomena of this disease are referable to diminished energy of the nervous system. Mr. Orton in his excellent work on cholera, published at Madras, has said,—" In other diseases, we generally find some organ, or, at least, some class of organs, pre-eminently affected, whilst the rest enjoy a comparative immunity from disease; but on a sudden and violent attack of cholera, the heart, the lungs, the stomach, and intestines, the liver, the kidneys, the muscles of voluntary motion, and organs of sense, appear to be almost simultaneously and equally affected. It is evident, therefore, that no cause but one of the most general agency throughout the frame is sufficient to account for these occurrences."—" The proximate cause" of all these phenomena, according to Mr. Orton, "consists in a diminution of the energy of the nervous system." While the failure of the functions of the heart, liver, kidneys, &c., seems certainly owing to the cause which Mr. Orton has assigned, it seems no less certain, that in most if not in all instances, this failure is altogether *secondary*, an effect and not a proximate cause, and preceded by, and accompanied with, greatly augmented energy, or at least orgasm, of the nerves of the stomach and intestines. The manner in which this secondary failure of the energy of the nerves of the heart, &c., takes place will be noticed in an additional note to these remarks. I would here ask the abettors of this opinion, are the phenomena that have so often been observed to follow the administration of excessive doses of tartrate of antimony—phenomena so perfectly *analogous* to those of cholera—produced by a cause which diminishes the energy of the nerves of the *stomach* and *intestines*? Assuredly not. In fact, so far is this from being true, there is perhaps no more certain method in such instances, of restoring—and restoring almost directly—the functions of the heart, liver, lungs, &c., than allaying the orgasm of the stomach and intestines, by *diminishing the energy or susceptibility of the nerves of these last organs by the use of narcotics.*

may seem unnecessary to adduce farther proof of the identity of the sporadic cholera of the ancients and the epidemic cholera lately observed in these countries—since the only reason for asserting they were distinct diseases, was founded on mistaken notions of the character of the evacuations in the cholera of the ancients. It will not, however, be deemed uninteresting nor unimportant to illustrate this subject by some additional remarks.

The *profuse evacuations* and the consequent *shrinking and collapse* of the whole body, observed in epidemic cholera, were equally remarked in the cholera of the ancients. "In habitu corporis," said Pechlin, "texturaque solidorum plurimos contineri succos, qui in cholerâ inde evocentur, hoc argumento didici, quod intra paucas horas habitus ille pridem adeô plenus, ad oculum collabascat, et armillæ annulique laxiùs multô hæreant, quàm integro adhuc et perfuso succis corpore." Whether the expression "ad oculum collabascat" be understood literally or not, is immaterial. The passage is equally important, and proves that the collapse and shrinking of the body,—supposed to be peculiar to epidemic cholera, and remarked upon with such emphasis by those who have described it,—were equally observed, a century

and a half before, by the author just named ; and it seems unnecessary to adduce additional instances of a fact which must already be sufficiently evinced.

The force and violence with which the evacuations take place,—the " furor pylori et intestinorum undè omnia liquida cùm impetu *ano cai cato* dejiciuntur," —was another circumstance which did not escape the observation of some early writers : and it may be certainly affirmed that in proportion to the violence and copiousness of the evacuations will be, *cæteris paribus*, the rapidity in most instances, with which the diminished force or failure of the heart's movements and all the *other secondary* phenomena of cholera take place. The same circumstance—the violence of the evacuations—was, in the late epidemic, also noticed by many observers both in Europe and in India. According to the Berlin medical commission, the evacuation of the fluids " se fait avec une grande promptitude," while others have compared them to water flowing from a forcing-pump.*

* See the Journal Universel de Médecine. " D'Autres fois," says Mr. Scott," elles sont expulsées avec force, ce que l'on a comparé au jet d'une seringue."—Blin's translation, p. 85. There is a singular coincidence—if coincidence it be—between this circumstance and an import assigned to the word *cholera* by the Messieurs de Port-Royal. I think it not improbable that this word, in the sense alluded to, many have been in use among the Greeks as a popular term long before the doctrines which assigned a bilious

The ancients, moreover, generally distinguished cholera into two varieties—the *humida* and *sicca*. This distinction, mentioned by Hippocrates, and by Dolæus said to be *abs toto ferè choro Medicorum recepta*, has in more recent times been disregarded, or entirely rejected. F. Hoffman thought the variety termed *sicca* ought to be referred to convulsive colic.* Whether, in this, more recent observers have shown themselves more accurate than Hippocrates, it may be very allowable to doubt. But certain it is from the observation of many who witnessed the late epidemic —some of whom do not seem to have been aware of the ancient division†—that the uncommon and severe variety, denominated *sicca* by the ancients, was often observed in the late epidemic disease, both in Europe

origin to so many diseases had an existence. This word as it has long been understood is certainly anomalous; but if we consider it as a term of popular origin with the meaning assigned to it by the Messieurs de Port-Royal, it will then be neither anomalous in its orthography, nor "inapplicable to the disease," nor will the adjunct "morbus" be any pleonasm.

* Opera Omnia, vol. 2, p. 295, a.

† It is *rather* remarkable that the occurrence in the late epidemic of the severe variety to which the ancients gave the appellation *sicca* should be adduced to prove that epidemic cholera is a *new* disease. In this variety,—apparent in many instances rather than real,—the intestines have been found, after death, loaded with fluid, the evacuation of which had been prevented by spasmodic contraction of some portion of the intestinal tube—the colon—which, even after death, would scarcely admit the passage of a large quill.

and in India ; and more than one example of it came under the notice of the author of these remarks. In support of what I have said as to the occurrence in the late epidemic of the cholera *sicca*, it will be sufficient, I believe, to adduce the authority of the Berlin commissioners, who in their Report—copied into the Journal hebdomadaire de Médecine for 1831, t. 5, p. 86—have said that in some cases there is neither vomiting nor purging, though other symptoms of the disease be present. " This," say they, " seems to constitute a peculiar and remarkable variety of the disease." To this I may also add the testimony of M. Scipion Pinel, who, in a letter from Warsaw, read at the sitting of the Académie des Sciences, 18th July, of the same year, says :—" Très souvent on n'observe ni vomissements, ni dejections." If, then, the remarkable variety of cholera termed *sicca*, observed and described by many early writers, was equally witnessed in the late epidemic, are we not justified in regarding this fact as an additional argument against the opinion so generally maintained of epidemic cholera being a new disease and altogether different from the cholera of the ancients ?

It has been said that between the symptoms of *epidemic* cholera, and those that occur in certain

cases of *poisoning*, there is such an exact resemblance, that they cannot be distinguished, excepting that, in the latter, there may be burning heat in the œsophagus *prior* to vomiting.* It is not a little remarkable, and seems no small confirmation of the opinion contended for in these pages, that the same remark was made regarding *sporadic* cholera, a century and a half before, by Dolæus, who, after enumerating the symptoms usually observed in this disease, adds, they occur exactly as if the sick had taken poison—" non aliter ac si venenum assumpsissent ægri."†

* Some continental practitioners have also said,—" We know nothing of this disease, except that it bears a perfect resemblance to certain cases of poisoning." It never seems to have occurred to the authors of these remarks that the *ratio symptomatum*, the source and order of succession of all the phenomena, might in both instances be the same also; but while in cases of poisoning, the treatment pursued has invariably had reference to the primary affection of the alimentary canal, in cholera on the other hand, it has almost as uniformly been directed against secondary symptoms—symptoms prominent certainly and remarkable, but which are nevertheless merely *secondary*, the effects of the primary disease; and which, could they be removed by any of the innumerable methods generally used for that purpose, the pathognomonic affection—the disease itself—would, notwithstanding, be still left unsubdued, and unmitigated.

† Encyc. Med. Theor. Pract. Lib. iii. c. iv. The same author in another place says: " Cholera ergo est morbus *peracutus* paucis non tantùm diebus, sed etiam sæpè horis hominem jugulans: atque, si *nulla evidens causa præcessit, tunc* cholera est *acutior et malignior eâ, quæ vel à cibis corruptis, vel à veneno hausto ortum suum habet.*"

With regard to the difference *in degree* generally observed between the epidemic and sporadic cholera, no one, so far as I am aware, has for a moment thought of assigning *that* as any reason for considering them distinct diseases. This difference *in degree* between sporadic and epidemic cholera, is nothing more or less, than what is constantly observed in other diseases that occur in either the sporadic or epidemic form. Dysentery, puerperal and intermittent fever, and some other diseases, have been observed to be invariably of greater severity, and attended with greater mortality, when they prevail as epidemics than when they occur in sporadic instances.* It is in no respect otherwise in cholera, which, acute as it is in the sporadic form, becomes of still greater severity when it occurs as an epidemic; a fact long ago observed by Ettmuller, who said, when cholera becomes *epidemic* it also becomes valdè *maligna et lethalis.*

Although the conclusion I would deduce from these facts be in direct opposition to the opinion generally, if not universally received, yet from what

* The remark of the late Dr. Gooch, regarding *puerperal fever*, that when most prevalent, it is most dangerous,—is no less applicable to all the diseases alluded to.

has been now stated, I think we can no longer doubt that epidemic cholera, and the sporadic cholera of the ancients, are one and the same disease, and like sporadic and epidemic dysentery, and similar diseases, differ in no respect, but in degree. There is, moreover, as will be shown in a subsequent enquiry into the nature and origin of the various phenomena of cholera,—a perfect identity in the nature and seat of sporadic and epidemic cholera; their causes, so far as these come under our observation, are the same; both are observed to occur generally at the same season, and in the same class of persons; and both are, moreover, curable—and in most instances with much certainty—by the same means.

APPENDIX.

ADDITIONAL NOTE.—I have said that both sporadic and epidemic cholera are curable—and in most instances with great certainty—by the same means. This I state in the full conviction that cholera, whether sporadic or epidemic, spasmodic or asphyxic, is everywhere the same disease,—*such* as it occurred in my own practice—the same in its pathognomonic or primary symptoms, how much soever it may be varied in *form* by the occurrence, in different degrees, of various secondary symptoms. In a subsequent enquiry into the nature of this disease, I shall show that not only the diminution or failure of the heart's action, which gives rise to the asphyxia, cyanosis, loss of animal heat, and venous congestion; but also the spasms of the trunk and extremities, the aphonia, suppression of urine, &c., are mere *secondary* symptoms that have their source and origin in

a primary affection of the alimentary canal. If then the symptoms I have enumerated be altogether secondary—and there is no truth in pathology capable of more satisfactory and complete demonstration—it must necessarily follow that all those innumerable methods of treatment that have been, in former* and in more recent times, so energetically directed against symptoms which must in every respect be considered *secondary*, can never be attended with satisfactory, or at least with but negative results. I do not except the treatment of the distinguished M. Broussais and his numerous disciples who have unquestionably used active depletion in numberless instances where inflammation could have had no existence.† The rational object

* Inter *externa* varia unguenta, cataplasmata, emplastra, &c., quorum omnium catalogus est *infinitus*, &c.—Dolæi Encyc. Med. p. 310, b. 1686.

† I know not how these gentlemen, led away, apparently, by a blind attachment to theory, and mistaking for a cause what is, when it exists, so certainly an effect of the disease, or a mere complication of it, can hope to escape a similar reproach to that which Lieutaud addressed, probably with no injustice, to some of his contemporaries,—" Ceux qui mettent la saignée à tout ne manquent pas de l'appliquer au choléra." Independant of very ample and perfectly unequivocal evidence of the non-existence of inflammation of the gastro-enteric mucous membrane in many cases of cholera, even where the disease had existed for several days, and gone on to a fatal termination, it may be remarked that there is no class of persons so little liable to attacks of acute inflammatory diseases as that class which furnishes almost exclusively the subjects of cholera. In an extensive practice, at one period,

of treatment, then, in cholera, must be, neither "to stimulate the system," nor "to excite the heart's action," nor "to restore the animal heat," nor "to remove venous congestion,"—all which "indications" may be safely, if not advantageously, neglected,—but to obviate, promptly and effectually, that orgasm of the alimentary canal *on which all the varied phenomena of cholera depend;* and this once obviated—and nothing can be more simple or more efficacious than the means by which this may be accomplished—all the symptoms of the disease, as I have invariably witnessed, necessarily and almost immediately disappear.*

But it is not in *cholera* alone that this diminution of the energy of the heart's movements is dependant on a cause *within the abdomen.* In severe affections of those organs that derive their nerves from the

among persons of this description, a class which pre-eminently suffers from all the physical ills that flesh is heir to, I believe I had not occasion to use the lancet a dozen times in nearly as many years, and not once in any case of epidemic or sporadic cholera, nor yet in the *identical* but milder affection—the *autumnal* diarrhœa of England, in some hundred instances of which I have had no fatal example. How different the practice of the disciples of the "physiological school," and how different also its results, I need not point out.

* I ought, perhaps, to except secondary fever, of which, in nearly ninety cases of epidemic cholera, in its severer forms, I have seen but one example.

same source with the heart, or of those nerves themselves, but especially in affections of the stomach and small intestines, accompanied with vomiting and diarrhœa, this diminution of the energy* of the heart's movements is more or less observable; and even in active inflammation, as in enteritis and puerperal fever, the character of the pulse is, in this manner,

* I should not think it necessary to remark that diminished energy is generally accompanied with encreased frequency of the heart's movements, were not this fact so constantly overlooked in the writings of many of our best practical authors, who, while they generally state, in their relation of individual cases, the number of the pulse, seldom make one remark as to its *character*. Thus it is apparently forgotten that increased frequency occurs in two states of the circulation as opposite from one another as delirium arising from inflammation is from the delirium of adynamic fever or from delirium tremens. I am aware that an *opinion* directly at variance with what I have stated has been expressed by some whose sentiments on all subjects in medicine are entitled to great deference; and we are, moreover, referred to the works of the late Mr. Abernethy and others for examples of "gastric irritation stimulating the heart and blood-vessels to encreased action." While Mr. Abernethy, in his recital of cases, has, for the most part, stated the *number* of the pulse, there is not, I believe, one example in his work on disorders of the digestive organs, in which the character of the pulse is so much as alluded to. On the contrary, in his general enumeration of symptoms that accompany those disorders, he has stated that the pulse is "frequent or feeble," (page 21); and in another place he has likewise said:—"The actions of the heart seem to me also to become disordered from sympathy with the stomach. That palpitation, and feeble or intermitting actions of that organ arise from this cause, is proved by their ceasing when the state of the stomach becomes changed."—Obs. on Local Diseases, p. 257. In exact accordance with these observations are the following remarks of Baglivi:—"In stomachi morbis parvi etiam fiunt (pulsus). Quique naturaliter sunt stomacho debiles, exiguum ferè perpetuò pulsum gerunt."—Opera, p. 73.

very remarkably modified. Hence it is that mere mechanical irritation of a portion of ~~the~~ intestine, as in strangulated hernia, may give rise—as it has given rise—to all the *secondary* and more remarkable phenomena of cholera. It is in this manner, moreover, that irritation of the stomach, kidneys, spleen, uterus,* &c., causes irregular, intermittant, and feeble movements of the heart, palpitation, coldness of the extremities, &c.; hence also the small contracted pulse, shrunk features, and cold extremities, which take place in enteritis, metro-enteritis, pericarditis, retrocedent gout, dysentery, &c.; hence the failure of the circulation observed in endemic colic† and in ileus; hence also the adynamic symptoms which in continued fever,‡ in scarlatina, small-pox, and other febrile diseases, so certainly take place on the occurrence of gastric or enteric irritation or inflammation, especially when these are accompanied by, or give rise to, diarrhœa and vomiting.

* See, among m ny other instances, the cases of Amenorrhœa, &c. related in Friend's Emmenologia.

† See Huxham, Citois, Tronchin, Lieutaud, &c.

‡ That *Typhus* fever is neither gastro-enteritis, as M. Broussais asserts; nor mesentero-enteritis, nor dothinenteritis, nor follicular enteritis, as many pathologists of a neighbouring country contend, I conceive to be *more* than probable; but that any of the affections just named occurring in continued fever, in scarlatina, in small-pox, whether secondarily or concomitantly, will *necessarily* produce asthenic symptoms, determine the adynamic character of the disease, and give origin, in either instance, to that entire class

It is in this manner also that emetics, especially the tartrate of antimony, by causing severe gastric irritation, "distressing nausea, vomiting and purging," diminish the force of the circulation more cer-

of symptoms denominated *typhoid*, is a truth which I believe will be found to be in perfect accordance with accurate observation; and it is, moreover, for the reason stated, and not from the absorption of pus, as has been supposed, that any satisfactory explanation can be offered of the rapid succession in puerperal fever of phenomena so opposite in their nature as acute inflammation, and the succeeding train of typhoid symptoms. That the *character* of fever, how much soever it may be influenced by the previous state of the patient and the circumstances in which he may be placed,—will nevertheless be determined in a still greater degree by the organs, or class of organs principally affected, will hence be easily understood, and if, moreover, certain states of the atmosphere, *not occult*, as is generally supposed, but *cognizable by our senses*, predispose to or occasion affections of one class of organs, rather than another, a rational and satisfactory solution will thus be given, why febrile diseases should at one period be of a typhoid, and at another of an inflammatory character. These facts are, *meo captu*, well illustrated by the histories of various epidemics, but by none perhaps more clearly than that of the epidemic fever of Moscow, of 1768, and that of 1769, as related by C. De Mertens, in his excellent Observationes de Febribus, but which the limits of this note will not allow me farther to notice. I would only add that between the symptoms of cholera which I have denominated secondary, and the symptoms enumerated by De Mertens, as occurring in the third stage of the fever of both years, there is a marked and striking analogy. These last may be said to be the *secondary* symptoms of cholera in a chronic form, or, if the expression be allowed, in miniature. The vox tremula;* pulsus parvus; extremitates gilidæ†; sudor frigidus; facies palidissima; oculi fixi, luctuosi, squalidi; subsultus tendinum; convulsiones, &c., form a group of symptoms not to be mistaken, and are as certainly *secondary* in fever, and dependant on a cause *within the abdomen*, as the analogous but more severe and rapid phenomena of cholera. That gastro-enteritis, or dothinenteritis, occurring in the course of fever will

* The Vox faucibus hærens, vox obscura, of Huxham and others.

† Ungues digitique lividi. Huxham de Feb. lent. nervosis. Brachia livida, Wepfer.

tainly than repeated venesection, producing such an enfeebled state of the heart's movements, and of respiration as is incompatible with the existence of acute inflammation of any organ, if we except, perhaps, the stomach and intestines. Hence the great and almost miraculous efficacy of tartar emetic in the treatment of peripneumony, articular rheumatism, and similar acute diseases.*

occasion the symptoms named, seems very certain ; but that the existence of either is necessary to the production of those symptoms is an assumption as illogical and untrue in fever as it is in cholera. There is something *prior to* inflammation in both instances of which inflammation is but an effect although an effect which forms a complication of the gravest character.

* It would seem that this orgasm of the primæ viæ, whether excited by acrid medicines or otherwise, when it gives rise to profuse evacuations, may, especially in the weak and debilitated, be readily carried to the extent of causing entire failure of the heart's movements, as certainly as such failure follows, *pari passu*, the analogous phenomena—the violent gastric orgasm, vomiting and purging—of cholera. Hence mortification of the toes, feet, nose, &c., have been observed to follow excessive doses of antimonial medicines, no less than they follow some of the severer cases of cholera, and for the same reason—the failure of the circulation. Since the tendency of these evacuations and the orgasm of the stomach and intestines on which they depend, is uniformly the same, by whatever means excited,—it is surely as unreasonable to consider, with Rasori and others, that the *modus agendi* of tartar emetic in the cure of peripuenmony is in any respect special, as it would be, with Bouillaud and Jules Pelletan, to deny its efficacy. A very extensive analogy, independent altogether of direct experiment, would seem clearly to lead to the conclusion, that to the violent gastric orgasm, the distressing nausea, vomiting and purging, which so generally accompany the use of tartar emetic, must be ascribed its great efficacy ; and so far is the state of "*the tolerance*" from being desirable, it seems to have been one of the circumstances which have led some practitioners of the (so styled) Physiological school—administering the remedy no doubt *parcâ manu*—to pronounce

To diminish=ed energy of the heart, produced in the manner stated, is, moreover, to be ascribed, the congestion of blood in the veins observed in cholera, in certain cases of poisoning, of adynamic fever, of adynamic scarlatina, &c.*

it inefficacious and undeserving of confidence. Had Stoll, Riverius, Huxham, Pringle, Cullen, Rasori, Tommasini, Dumangin, Laennec, Forbes and others, while prescribing this remedy, been perpetually haunted with the dread of exciting gastro-enteritis, it is probable they also would have arrived at a conclusion not very dissimilar. It is certain, however, that *their* practice was very different. Witness, for example, the following remark of the eminent translator of Laennce.—"The only objection to its use" (the tartrate of antimony,) "appears to me to be *the severity of its operation* previously to the establishment of *the tolerance*. In one case only have I seen this to exist from the first; in all the others, *distressing nausea* continued for a good many hours, and in most of them there were also both vomiting and purging." Note to Trans. of Laennec, p. 271. Laennec himself says,—"Although copious purging and frequent vomiting are by no means desirable, on account of the debility and hurtful irritation of the intestinal canal which they may occasion, I have obtained remarkable cures in cases in which such evacuations have been very copious." The reader may compare these remarks with what this author has said, regarding the state of *tolerance*.—"This fact of complete *tolerance* existing without any effect on the disease, is strongly against the theory of Rasori and Tommasini." The theory, however, which Laennce has proposed does not, in fact, seem more intelligible or more satisfactory than that of Rasori.

* I consider this proposition as plainly deducible from the experiments Whytt, (Essay on the vital motions of animals; Physiological Essays; and Experiments with Opium,) and of Alston, (Edin. Med. Essays, vol. 5.) although in more recent times, this congested state of the veins has been looked upon in a very different light; and the late Dr. Armstrong, far from regarding it as an *effect*, attempted to prove that it is a cause of that form of fever to which he gave the appellation *congestive*. Dr. Bateman seems also to have adopted this opinion, for, (after describing, in his work on contagious Fever, two cases of the form of fever in question) he says:—This is the variety of fever which Dr. Armstrong has, upon hypothetic grounds, denominated "congestive Typhus;" and I am much disposed to believe that these symptoms are justly referable to a state of venous congestion, with feeble or oppressed action of the heart and arteries, p. 59. According to Mr. H. Bell, *cholera* was, in India, generally regarded as "a disease of venous congestion"; and it was, he informs us, for the removal of this, and not of inflammation, that venesection was so much recommended and so generally practised in this disease.

FINIS.