

CHAPTER I.

TYPHUS AND OTHER CONTINUED FEVERS.

IT was remarked by Dr James Lind, in 1761, that a judicious synopsis of the writings on fevers, in a chronological sense, would be a valuable book: it would bring to light, he was fain to expect, treasures of knowledge; “and perhaps the influence of a favourite opinion, or of a preconceived fancy, on the writings of some even of our best instructors, such as Sydenham and Morton, would more clearly be perceived¹.” Lind himself was the person to have delivered such a history and criticism. He was near enough to the 17th century writers on fevers to have entered correctly into their points of view; while so far as concerned the detection of theoretical bias or preconceived fancies, he had shown himself a master of the art in his famous satire upon the “scorbūtic constitution,” a verbal or mythical construction which had been in great vogue for a century and a half, and was still current, at the moment when Lind destroyed it, in the writings of Boerhaave and Haller. A judicious historical view of the English writings on fevers, such as this 18th century critic desired to see, may now be thought superfluous. The theories, the indications for treatment, the medical terms, have passed away and become the mere objects of a learned curiosity. But the actual history of the old fevers, of their kinds, their epidemic prevalence, their incidence upon rich or poor, upon children or adults, their fatality, their contagiousness, their connexion with the seasons and other vicissitudes of the people—all this is something more than curious.

¹ James Lind, M.D., *Two Papers on Fevers and Infection*. Lond. 1763, p. 79.
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Unfortunately for the historian of diseases, he has to look for the realities amidst the “favourite opinions” or the “preconceived fancies” of contemporary medical writers. Statements which at first sight appear to be observations of matters of fact are found to be merely the necessary truths or verbal constructions of some doctrine. One great doctrine of the 17th and 18th centuries was that of obstructions: in this doctrine, as applied to fevers, obstructions of the mesentery were made of central importance; the obstructions of the mesentery extended to its lymphatic glands; so that we come at length, in a mere theoretical inference, to something not unlike the real morbid anatomy of enteric fever. Another great doctrine of the time, specially applied by Willis to fevers, was that of fermentations and acrimonies. “This ferment,” says a Lyons disciple of Willis in 1682, “has its seat in the glandules of the velvet coat of the stomach and intestines described by Monsieur Payer¹.” But the Lyons physician is writing all the while of the fevers that have always been common in the Dombes and Bresse, namely intermittents; the tertian, double tertian, quotidian, quartan, or double quartan paroxysm arises, he says, from the coagulation of the humours by the ferment which has its seat in the glandules described by M. Payer, even as acids cause a coagulation in milk, the paroxysm of ague continuing, “until this sharp chyle be dissipated and driven out by the sweat or insensible perspiration.” The lymphatic follicles of the intestine known by the name of Payer, or Peyer, were then the latest anatomical and physiological novelty, and were chosen, on theoretical grounds, as the seat of fermentation or febrile action in agues. On the ground of actual observation they were found about a century and a half after to be the seat of morbid action in typhoid fever.

While there are such pitfalls for the historian in identifying the several species of fevers in former times, there are other difficulties of interpretation which concern the varieties of a continued fever, or its changes of type from generation to generation. Is change of type a reality or a fiction? And, if a reality, did it depend at all upon the use or abuse of a certain regimen or treatment, such as bleeding and lowering, or heating and corroborating? A pupil of Cullen, who wrote his thesis in

¹ *Observations on Fevers and Febrifuges.* Made English from the French of M. Spon. London, 1682.

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1782 upon the interesting topic of the change in fevers since the time of Sydenham¹, inferred that the great physician of the Restoration could not have had to treat the low, putrid or nervous fevers of the middle and latter part of the 18th century, otherwise he would not have resorted so regularly to blood-letting, a practice which was out of vogue in continued fevers at the time when the thesis was written, as well as for a good many years before and after. Fevers, it was argued, had undergone a radical change since the time of Sydenham, in correspondence with many changes in diet, beverages and creature comforts, such as the greatly increased use of tea, coffee and tobacco, and of potatoes or other vegetables in the diet, changes also in the proportion of urban to rural population, in the use of carriages, and in many other things incident to the progressive softening of manners. In due time the low, putrid, nervous type of typhus fever, which is so much in evidence in the second half of the 18th century, ceased to be recorded, an inflammatory type, or a fever of strong reaction, taking its place; so that Bateman, of London, writing in 1818, said: "The putrid pestilential fevers of the preceding age have been succeeded by the milder forms of infectious fever which we now witness"; while Armstrong, Clutterbuck, and others, who had revived the practice of blood-letting in fevers shortly before the epidemic of 1817-18, claimed the comparatively slight fatality and short duration of the common fever of the time as an effect of the treatment. After 1831, typhus again became low, depressed, spotted, not admitting of the lancet; on which occasion the doctrine of "change of type" was debated in the form that the older generation of practitioners still remember.

Thus the task of the historian, whose first duty is to ascertain, if he can, the actual matters of fact, or the realities, in their sequence or chronological order, is made especially difficult, in the chapter on continued fevers, by the contemporary influence of theoretical pathology or "a preconceived fancy," by the ascription of modifying effects to treatment, whether cooling or heating, lowering or supporting, and, most of all, by the absence of that more exact method which distinguishes the records of fever in our own time. Nor can it be said that the work of historical research has been made easier in all respects, by the

¹ James Hutchinson, M.D., *De Mutatione Februm e tempore Sydenhami*, etc. Edin. 1782. Thesis.

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exact discrimination and perfected diagnosis to which we are accustomed in present-day fevers. In the years between 1840 and 1850, the three grand types of fever then existing in Britain, namely, spotted typhus, enteric, and relapsing fever, were at length so clearly distinguished, defined and described that no one remained in doubt or confusion. Thereupon arose the presumption that these had always been the forms of continued fever in Britain, and that the same fevers, presumably in the same relative proportions to each other, might have been left on record by the physicians of former generations, if they had used the modern exactness and minuteness in observing both clinical history and anatomical state, which were seen at their best in Sir William Jenner. It would simplify history, indeed it would make history superfluous, if that were really the case. There are many reasons for believing that it was not the case. As Sydenham looked forward to his successors having experiences that he never had, so we may credit Sydenham with having really seen things which we never see, not even those of us who saw the last epidemics of relapsing fever and typhus. It is due to him, and to his contemporaries and nearest successors, to reciprocate the spirit in which he concludes the general chapter on epidemics prefatory to his annual constitutions from 1661 to 1676:

“I am far from taking upon myself the credit of exhausting my subject in the present observations. It is highly probable that I may fail even in the full enumeration of the epidemics. Still less do I warrant that the diseases which during the years in question have succeeded each other in the sequence about to be exhibited shall remain the same in all future years. One thing most especially do I aim at. It is my wish to state how things have gone lately; how they have been in this country, and how they have been in this the city which we live in. The observations of some years form my ground-work. It is thus that I would add my mite, such as it is, towards the foundation of a work that, in my humble judgment, shall be beneficial to the human race. Posterity will complete it, since to them it shall be given to take the full view of the whole cycle of epidemics in their mutual sequences for years yet to come¹.”

The epidemic fever of 1661, according to Willis.

On the very threshold of the period at which the history is resumed in this volume, we find a minute account by Willis of an epidemic in the year 1661, which at once raises the question whether a certain species of infectious fever did really exist at

¹ *Observationes Medicae*, 3rd ed. 1676, l. 2. § 23. English by R. G. Latham, M.D.

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that time which exists no longer, or whether Willis described as “a fever of the brain and nervous stock” what we now call enteric fever. Willis’s fever corresponds in every respect to the worm fever, the comatose fever, the remittent fever of children, the acute fever with dumbness, the convulsive fever, which was often recorded by the medical annalists and other systematic observers as late as the beginning of the 19th century¹. It ceased at length to be recorded or described, and it has been supposed that it was really the infantile or children’s part of enteric fever, which had occurred in former times as now². The epidemic fever which Willis saw in the summer of 1661, after a clear interval of two years from the great epidemics of agues, with influenzas, in 1657–59, is called by him “a certain irregular and unaccustomed fever³.” It was not, however, new to him altogether; for he had seen the same type, and kept notes of the cases, in a particular household at Oxford in 1655, as well as on other occasions. It was an epidemical fever “chiefly infestous to the brain and nervous stock.” It raged mostly among children and youths, and was wont to affect them with a long and, as it were, a chronical sickness. When it attacked the old or middle-aged, which was more rarely, it did sooner and more certainly kill. It ran through whole families, not only in Oxford and the neighbouring parts, “but in the countries at a great distance, as I heard from physicians dwelling in other places.” Among those other witnesses, we shall call Sydenham; but meanwhile let us hear Willis, whose account is the fullest and least warped by theory.

Its approach was insidious and scarce perceived, with no immoderate heat or sharp thirst, but producing at length great debility and languishing, loss of appetite and loathing. Within eight days there were brain symptoms—heavy vertigo, tingling of the ears, often great tumult and perturbation of the brain. Instead of phrensy, there might be deep stupidity or insensibility; children lay sometimes a whole month without taking any notice of the bystanders, and with an involuntary flux of their excrements; or there might be frequent delirium, and constantly absurd and incongruous chimaeras in their sleep. But in men a fury, and often-times deadly phrensy, did succeed. If, however, neither stupidity nor great distraction did fall upon them, swimings in the head, convulsive movements, with convulsions of the

¹ Reports of Whitehaven Dispensary (Dixon) and of Nottingham General Hospital (Clarke), cited in the sequel.

² Rilliet, *De la Fièvre Typhoïde chez les Enfants*, Thèse, Paris, 2 Janv. 1840, based on 61 cases; West, *Diseases of Infancy and Childhood*, 3rd ed. Lond. 1854.

³ “Febris epidemicae cerebro et nervoso generi potissimum infestae, anno 1661 increbescens descriptio,” in *Pathologia Cerebri*, Cap. VIII, “De Spasmiss universalibus qui in febribus malignis” etc., Eng. transl. p. 51.

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members and leaping up of the tendons did grievously infest them. In almost all, there were loose and stinking motions, now yellow, now thin and serous; vomiting was unusual; the urine deep red. The sufferers in this prolonged sickness wasted to a skeleton, with no great heat or evacuations to account for the wasting. Some, at the end of the disease, had a severe catarrh. In others, with little infection of the head, soon after the beginning of the fever a cruel cough and a stinking spittle, with a consumptive disposition, grew upon them, and seemed to throw them suddenly into a phthisis, from which, however, they recovered often beyond hope. In some there were swellings of the glands near the hinder part of the neck, which ripened and broke, and gave out a thin stinking ictor for a long time. "I have also seen watery pustules excited in other parts of the body, which passed into hollow ulcers, and hardly curable. Sometimes little spots and *petechiales* appeared here and there." But none of the spots were broad and livid, nor were there many malignant spots.

Willis then gives several cases clinically, in his usual manner. The first is of a strong and lively young man, who was sick above two months and seemed near death, but began to mend and took six weeks to recover, sweating every night or every other night of his convalescent period. The second case, aged twelve, was restored to health in a month. Numbers three and four were children of a nobleman, who both died, the convulsive type being strongly marked; one of the two was examined after death, and found to have several sections of the small intestine telescoped, but all the abdominal viscera free from disease¹, the lungs engorged, the vessels of the brain full, much water in the sub-arachnoid space, and more than half a pint in the lateral ventricles.

In farther illustration of this type of fever, epidemic in 1661, Willis goes back to his notes of a sporadic outbreak of what he thinks was the same disease in a certain family at Oxford in the winter of 1653-4²: "yea I remember that sometime past very many laboured with such a fever." In the family in question, five children took the fever one after another during a space of four months, two of the cases proving fatal; the domestics also took it, and some strangers who came in to help them, "the evil being propagated by contagion." The cases in the children are fully recorded³, the following being some of the symptoms:

In case 1, aged seven, the illness began at the end of December, 1653 (or 1655): there were contractions of the wrist tendons, red spots like flea-bites on his neck and other parts, drowsiness, and involuntary passage of the excrements. At the end of a fortnight, a flux set in and lasted for four days; next, after that, a whitish crust or scurf, as it were chalky, began to spread over the whole cavity of his mouth and throat, which being often in a day wiped away, presently broke forth anew. He mended a little, but had paralysis of his throat and pharynx, was reduced to a living skeleton, but at length got well.

Case 2, a brother, aged nine, had frequent loose and highly putrid motions on the eleventh day; and next day, the flux having ceased, the most severe colic, so that he lay crying out day and night, his belly swollen and hard as a drum, until, on the 24th day, he died in an agony of convulsions.

Case 3, a brother, aged 11, was taken with similar symptoms on the 13th February, and died on the 13th day.

¹ "Itaque ventrem inferiorem primo aperiens, viscera omnia in eo contenta satis sana et sarte tecta inveni"—the small intestine being telescoped in several places.

² Elsewhere he says the first case of the series was "circa solstitium hyemale anno 1655."

³ *De Febris*, chapter "De febris pestilentibus."

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Case 4, a sister, was taken ill in March, with less marked symptoms, and recovered slowly, having had no manifest crisis.

Case 5, a boy of the same family, and the youngest, fell ill about the same time as No. 4, and after the like manner, "who yet, a looseness arising naturally of itself, for many days voiding choleric and greenish stuff, was easily cured."

Then comes a general reference to the domestics and visitors, who fell sick of the same and all recovered.

The prolonged series of cases in the household of this "venerable man" appears to have made a great impression upon Willis, as something new in his experience, as well as in the experience of several other physicians who gave their services. That it was malignant he considers proved "ex contagio, pernicie, macularum pulicularum apparentia, multisque aliis indiciiis." He adds that he had seen the same disease sporadically at other times; and again "I remember that formerly several laboured under such a fever." Those cases were all previous to the general prevalence of the fever which he identifies with them in the summer of 1661, under the name of a "fever of the brain and spinal cord."

The signs given by Willis are as nearly as may be the signs of infantile remittent fever, or worm fever, or febris synochus puerorum, or hectica infantilis, or febris lenta infantum, or an acute fever with dumbness, of which perhaps the first systematic account in this country was given by Dr William Butter of Lower Grosvenor Street, in 1782¹. It is, he says, both a sporadical and an epidemical disease, "and when epidemical it is also contagious." The age for it is from birth up to puberty; but "similar symptoms are often observed in the disorders of adults." Morton, writing in 1692-94, clearly points to the same fever under the name of worm fever (*febris verminosa*). He adds it at the very end of his scheme of fevers, as if in an appendix, having been unable to find a place for it in any of his categories owing to its varying forms—hectic, acute, intermittent, continued, *συνεχής*, inflammatory, but for the most part colliquate or *σύννοχος*, "and malignant according to the varying degrees of the venomous miasm causing it²." Butter also recognizes its varying types: it has many symptoms, but they seldom all occur in the same case; there are three main varieties—the acute, lasting from eight to ten days up to two or three weeks;

¹ *Treatise on the Infantile Remittent Fever*. London, 1782.

² *Pyretologia*, 2 vols. Lond. 1692-94, i. 68, at the end of "Synopsis Februm":—"Febris verminosa, quae nulli e specibus memoratis praecise determinari potest."

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the slow, lasting two or three months; and the low, lasting a month or six weeks. The slow form, he says, is only sporadic; the low is only epidemic, and is never seen but when the acute is also epidemical; it is rare in comparison with the latter, and not observed at all except in certain of the epidemical seasons. Waiving the question whether the remittent fever of children, thus systematically described, was not a composite group of maladies, of which enteric fever of children was one, we can hardly doubt that Willis found a distinctive uniform type in the epidemic of 1661, in Oxford as he saw it himself, in other parts of England by report. It had symptoms which were not quite clearly those of enteric fever: spots, like fleabites, on the neck and other parts, swelling and suppuration of the glands in the hinder part of the neck, effusion of fluid on the brain and in the lateral ventricles, and the intestine free from disease¹.

Confirming Willis's account for Oxford, is the case of Roger North, when a boy at Bury St Edmunds Free School in 1661, as related by himself in his 'Autobiography'.² Being then "very young and small," after a year at school he had "an acute fever, which endangered a consumption." Elsewhere he attributes his bad memory with "confusion and disorder of thought," to that "cruel fit of sickness I had when young, wherein, I am told, life was despaired of, and it was thought part of me was dead; and I can recollect that warm cloths were applied, which could be for no other reason, because I had not gripes which commonly calls for that application." That "great violence of nature," while it had impaired his mental faculties, had sapped his bodily vigour somewhat also, of which he gives a singular illustration.

This special prevalence of epidemic fevers in the summer and autumn of 1661 is noticed also by the London diarists.

Evelyn says that the autumn of 1661 was exceedingly sickly and wet³. Pepys has several entries of fever⁴. On 2 July, 1661: "Mr Saml. Crewe died of the spotted fever." On 16 August: "At the [Navy] Office all the morning, though little to do;

¹ Häser gives a reference to an essay in which Willis's fever of 1661 is compared to enteric fever: C. M. W. Rietschel, *Epidemia anni 1661 a Willisio et febris nervosa lenta ab Huxhamio descriptae, etc. cum typho abdominali nostro tempore obvio comparantur*. Lips. 1861. Not having found this essay, I cannot say on what grounds the comparison is made.

² *Lives of the Norths*. New ed. by Jessopp. 3 vols. 1890, iii. 8, 21.

³ *Diary of John Evelyn, Esq., F.R.S.*, 1641—1706, under the date of 18 Sept.

⁴ *Diary of Samuel Pepys, Esq., F.R.S.*, 1659—69.

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because all our clerks are gone to the burial of Tom Whitton, one of our Controller's clerks, a very ingenious and a likely young man to live as any in the office. But it is such a sickly time both in the city and country everywhere (of a sort of fever) that never was heard of almost, unless it was in a plague-time. Among others the famous Tom Fuller [of the 'Worthies of England'] is dead of it; and Dr Nichols [Nicholas], Dean of St Paul's; and my Lord General Monk is very dangerously ill." On 31 August: "The season very sickly everywhere of strange and fatal fevers." On 15 January, 1662: "Hitherto summer weather, both as to warmth and every other thing, just as if it were the middle of May or June, which do threaten a plague (as all men think) to follow; for so it was almost the last winter, and the whole year after hath been a very sickly time to this day."

The great medical authority of the time is Sydenham. His accounts of the seasons and reigning diseases of London extend from 1661 to 1686, so that they begin with the year for which Willis described the epidemic fever "chiefly infestous to the brain and nervous stock," popularly called the new disease. But Sydenham did not describe the epidemic in the same objective way that Willis did. He records a series of "epidemic constitutions of the air," the particular constitution of each year being named from the epidemic malady that seemed to him to dominate it most. It was, perhaps, because it had to conform to Sydenham's "preconceived fancy," as Lind said, that his account of the dominant type of fever in 1661 differs somewhat from that given by Willis.

Sydenham's epidemic Constitutions.

Sydenham adopted the epidemic constitutions from Hippocrates, as he did much else in his method and practice. In the first and third books of the 'Epidemics,' Hippocrates describes three successive seasons and their reigning diseases in the island of Thasos, as well as a fourth plague-constitution which agrees exactly with the facts of the plague of Athens as described by Thucydides. The Greek term translated "constitution" is *κατάστασις*, which means literally a settling, appointing, ordaining, and in the epidemiological sense means the type of reigning disease as settled by the season. The method of Hippocrates is first to give an account of the weather—the winds,

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the rains, the temperature and the like,—and then to describe the diseases of the seasons¹. Sydenham followed his model with remarkable closeness. The great plague of London has almost the same place in his series of years that the plague-constitution, the fourth in order, has in that of Hippocrates. It looks, indeed, as if Sydenham had begun with the year 1661, more for the purpose of having several constitutions preceding that of the plague than because he had any full observations of his own to record previous to 1665. He is also much influenced by the example of Hippocrates in giving prominence to the intermittent type of fevers. It was remarked by one of our best 18th century epidemiologists, Rogers of Cork, and with special reference to Sydenham's "intermittent constitutions," that fevers proper to the climate of Thasos were not likely to be identified in or near London excepted by a forced construction.

Sydenham's Constitutions.

	Constitutions	Total deaths in London	Plague	Fever and Spotted Fever	Small-pox	Measles	Gripping in the Guts
1661	"Intermittent" constitution:	16,665	20	3,490	1,246	188	1,061
1662	with a continued fever through-	13,664	12	2,601	768	20	835
1663	out.	12,741	9	2,107	411	42	866
1664		15,453	5	2,258	1,233	311	1,146
1665	Constitution of plague	97,306	68,596	5,257	655	7	1,288
1666	and pestilential fever.	12,738	1,998	741	38	3	676
1667	Constitution of small-	15,842	35	916	1,196	83	2,108
1668	pox, with a continued	17,278	14	1,247	1,987	200	2,415
1669	"variola" fever.	19,432	3	1,499	951	15	4,385
1669	Constitution of dysen-		0	1,729	1,465	295	3,690
1670	tery and cholera nostras,	20,198	0	1,729	1,465	295	3,690
1671	with a continued fever.	15,729	5	1,343	696	17	2,537
1672	Measles in 1670.	18,230	5	1,615	1,116	118	2,645
1673	Constitution of "co-	17,504	5	1,804	853	15	2,624
1674	matose" fevers.	21,201	3	2,164	2,597	795	1,777
1675	Influenza in 1675.	17,244	1	2,154	997	1	3,321
1676		18,732	2	2,112	359	83	2,083
1677	Not recorded.	19,067	2	1,749	1,678	87	2,602
1678	Return of the "inter-	20,678	5	2,376	1,798	93	3,150
1679	mittent" constitution,	21,730	2	2,763	1,967	117	2,996
1680	absent since 1661-64.	21,053	0	3,324	689	49	3,271
1681	"Depuratory" fevers,	23,951	0	3,174	2,982	121	2,827
1682	or dregs of the inter-	20,691	0	2,696	1,408	50	2,631
1683	mittents.	20,587	0	2,250	2,096	39	2,438
1684		23,202	0	2,836	1,560	6	2,981
1685	Constitution of a	23,222	0	3,832	2,496	197	2,203
1686	"new" continued fever.	22,609	0	4,185	1,062	25	2,605

¹ An analysis of the four Hippocratic constitutions, with modern illustrative cases, is given by Alfred Haviland, *Climate, Weather, and Disease*. London, 1855.