

Historical notices, designed to illustrate the question whether typhus ought to be classed among the exanthematous fevers / [Charles West].

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Historical Notices, designed to illustrate the question whether Typhus ought to be classed among the Exanthematous Fevers.* By CHARLES WEST, M. D., Graduate of the University of Berlin.

FOR many years after Sydenham began to practise medicine, he believed that there existed but one form of fever. The pestilence of the years 1665 and 1666, however, impressed upon many diseases a new character, and was followed by fevers differing in many respects from those which had previously occurred. This diversity in the features of disease could not escape the notice of so acute an observer as Sydenham, and appears to have at first occasioned him considerable perplexity. From these difficulties he endeavoured to extricate himself by giving up his belief in the unity of fever, and by regarding each variation in form which the disease might exhibit as an essential change in its nature. Six different fevers are accordingly described by him as having occurred within the short space of twenty years; though, lest it should appear that he thus multiplied diseases without end, he proposed the ingenious theory that certain tribes of epidemic disorders constantly follow each other in one determined series or circle.

The alteration in character which fever has undergone within

the last few years has led to the adoption of opinions not unlike those of Sydenham. Some authors have described the disease as "the new fever," while others, regarding it as altogether of a specific nature, have not hesitated to class it among the exanthemata. Anxious to ascertain how far past experience supports the notion that typhous fever is a disease of a specific nature, the writer devoted considerable time to examining the history of epidemics, and has been thereby led to a conclusion unfavourable to that supposition, while his investigations have forced upon him the conviction, "That there is one predominant fever in nature, the knowledge of which is absolutely necessary for the successful treatment of all others; that this fever, though essentially the same, often varies in the lesser circumstances; and that it is sometimes accompanied with symptoms which have been supposed peculiar to inflammation, and frequently by spots of various kinds, which are considered as certain indications of putrefaction; but these circumstances do not with greater propriety indicate a particular species of fever than the accidental spots on their leaves constitute different orders of plants."*

Before proceeding further it will be necessary to digress for a moment in order to define the sense in which the words exanthema and exanthematous fever are here employed. Dr Willan, and almost all who since his time have treated of skin diseases, limit the term *exanthemata* to those appearances which are usually called rashes, and define them as "superficial red patches, variously figured, and diffused irregularly over the body, leaving interstices of a natural colour, and terminating in cuticular exfoliations." Earlier writers, however, included under that head a variety of diseases in which eruptions appeared on the skin; and the definition given of them by Cullen is, "Morbi contagiosi, semel tantum in decursu vitæ aliquem afficientes; cum febre incipientes; definito tempore apparent phlogoses, sæpe plures, exiguæ per cutem sparsæ." Many of the modern advocates for the exanthematous nature of typhus have used the term in this latter sense, as a synonym for eruptive fevers, and as designating a class which would include alike measles, small-pox, and scarlatina; and it will, accordingly, throughout this paper, be taken in that signification. The aim of this paper being to disprove the claim of typhous fever to a place among the true eruptive fevers, it will naturally be expected that evidence should be adduced to show that the eruption is not invariably present, nor always of one character, that it runs no definite course, and has no fixed period of decline. At the same time, the weight of this evidence will be

* Observations on the Management of the Prevailing Diseases in Great Britain, particularly in the Army and Navy. By J. Millar, M. D. London, 1783. Part ii. Chap ii.



greatly increased if it can be proved that the fever itself does not observe one constant type, but that its character is altered by climate; that it differs in different years; and that its symptoms are modified by comparatively trivial circumstances.

The exhibition of such evidence is all that the writer now attempts, for it would occupy too much space were he to aim at giving a complete history of typhous fever, or to enter upon the debatable ground of the origin or antiquity of the disease.* For our purpose, it may suffice to know, that, in the year 1489,† a new disease appeared among the troops of Ferdinand, who was then laying siege to Granada. It is difficult to gather the precise nature of this affection from the scanty descriptions of Villalba; but the name "el tabardillo" applied to it has since been always used by the Spaniards to designate petechial fever. Moreover, although the plague was at that time raging in the south of Spain, yet the physicians regarded this as a different disease, and debated about its cause; some saying that it had been communicated by certain soldiers who came to the war at Granada from the island of Cyprus, where they had been serving the Venetians against the Turks, and where the disease was said to be endemic; while others attributed it to the contamination of the air by the number of unburied corpses. Be this as it may, the distemper was so fatal, that when Ferdinand entered Granada 20,000 of his men were wanting, of whom 3000 only had fallen by the sword of the Moors, while 17,000 had been carried off by pestilence. Here then we have an instance of a contagious disease resembling the plague, and prevailing at the same time that plague was raging, but so far differing from it as to receive a distinct appellation.

During the ensuing fifteen years we do not find express mention of petechial fever, though plague was very fatal throughout all parts of Europe; as proofs of which it may be mentioned, that it

* Those who wish to pursue this subject further will do well to consult the laborious work of Ochs, *Artis Medicinæ Principes de curanda Febre Typhode comparatos*, &c. Lipsiæ, 1830. Schnurrer, in his *Chronik der Seuchen*, Tübingen, 1823, gives a very good account of most epidemics of typhous fever. The notices in the fourth volume of Ozanam's *Histoire Medicale des Maladies Epidemiques*, Paris and Lyons, 1817-1823, are often erroneous, and appear to have been frequently obtained at second hand. The *Epidemiologia Espanola*; por Don Joaquin de Villalba, Madrid, 1803, contains much curious matter; but the descriptions of diseases are often meagre in the extreme. The antiquity of typhous fever is very learnedly argued for by A. J. Wawruch, *Tentamen Inaugurale sistens Antiquitates Typhi Contagiosi*; Viennæ, 1812; and the same opinion is supported by Rasori, *Storia della Febre Petecchiale*, Milano, 1813, pp. 198-234, and by V. Hildenbrand, *über den ansteckenden Typhus*, Wien, 1814, pp. 25-35. The authorities on both sides of the question are very fairly stated by Acerbi in the excellent history of typhous fever which he gives in his *Dottrina Teorico-pratica del Morbo Petecchiale*, Milano, 1822, pp. 132-209.

† Villalba, *Epidemiologia Espanola*, Tome i. p. 69.

destroyed 30,000 men in London in the year 1499, the King and court flying the city, and taking refuge at Calais; and that in the year 1502, the Viceroy of Sicily was so alarmed at the prevalence of the plague in Barcelona, that he closed his ports against all vessels from that city. In the year 1505, the first epidemic of petechial fever prevailed in Italy, and in the following year England was ravaged for the second time by sweating-sickness; the same circumstances which in England and other northern countries gave rise to sweating-sickness, producing petechial fever in the south of Europe.* The epidemics of 1528-9 afforded a striking illustration of this fact, and are far from being a solitary instance of pestilence assuming very dissimilar forms in countries which differed from each other in soil or climate.

Fracastorius was only 22 years old in 1505; the description which he gives of petechial fever refers, therefore, more particularly to the epidemic of the year 1528, when the disease seems to have been more severe than on its first appearance in Italy. It prevailed over the whole of Italy, and was, in all probability, the pestilence which almost annihilated the French army before Naples, † although this cannot be affirmed with certainty; for Fallopius ‡ speaks of bubo occurring as a symptom of the distemper in some of his father's servants at Modena. Probably petechial fever and plague occurred together. It was at Verona that Fracastorius § observed the disease, which attacked persons so insidiously that they scarcely thought themselves to be ill, nor sought for medical advice, until, suddenly, symptoms of malignancy appeared. These were great lassitude, extreme loss of strength, stupor, or noisy delirium, feeble pulse, violent purging, following the administration of gentle medicines, and profuse hemorrhage, unattended by any relief to the symptoms. Between the fourth and seventh day there appeared "in brachiis, dorso et pectore, maculæ rubentes sæpe et puniceæ puncturis pulicum similes." It is manifest that these spots were not such as are called petechiæ by authors at the present day, for Fracastorius enumerates the fading of the spots, their scanty eruption, or their assuming a dark colour among the unfavourable symptoms. But one circumstance which places it beyond doubt that these spots were not ordinary petechiæ, but a measly efflorescence, such as is now often met with in the course of fever, is that measles and petechial fever were so frequently confounded together that medical writers found it necessary to point out the distinctions between

* See the chronological table at the end of *Der Englische Schweiss*, von Dr J. F. Hecker. Berlin, 1834.

† Guicciardini, *Istoria d'Italia*, Vol. x. Lib. xix. Hecker, Lib. cit. pp. 71-81.

‡ *Opera omnia*, Francofurti, 1600. Tractat. de tumoribus, Caput xxvii.

§ H. Fracastorii Veronensis *Operum Pars Prior*. Lugd. 1591. De contagionibus, Lib. ii. Cap. vi. De febre quam lenticulas vel puncticula vel peticulas vocant.

those two diseases. Cardanus, that universal genius whose reputation in other branches of science has cast his merits as a physician somewhat into the shade, mentions as one of a hundred deadly errors into which they who practised medicine in his day fell: "Quod pulicarem morbum, morbillum credunt."* He says, that this mistake has led to many serious faults in treatment, and accordingly he points out the differences between the two diseases. He notices that petechial fever does not, like measles, affect every body once during their life, but that it may occur several times in the same individual; that it is a very fatal disease, though only occasionally prevalent; and that it is associated with bubo or other pestilential symptoms. Nicolaus Massa† devoted a chapter to the same subject, and Montuus‡ remarks, "Sed falso morbilli putantur puncta quædam pulicum morsibus non dissimilia, quæ per febres pestilentes in cutis superficie aliquando visuntur."

The introduction of petechial fever into France is attributed by Fracastorius § to the circumstance of A. Naugerio, a friend of his, journeying on an embassy to Francis I., as far as Blois, where he died of petechial fever, which was thus introduced into a country where it was previously unknown. Fracastorius does not state that Naugerio was affected when he left his own country. When petechial fever first broke out in Italy, it was imagined that Italians only became its victims, and that the disease pursued them into foreign lands, while foreigners in Italy escaped unhurt. So, on the first appearance of the sweating-sickness, it was thought,

" ————— the general air,
From pole to pole, from Atlas to the east,
Was then at enmity with English blood.
For, but the race of England, all were safe
In foreign climes; nor did this fury taste
The foreign blood which England then contained."

This illusion was, however, soon removed in the case of both diseases, by their extension to other countries, probably owing to those great changes which were at that time taking place everywhere in the character of epidemics, rather than to the mere propagation of the diseases by contagion. But, however this may have been, traces of petechial fever are to be found soon after this time in the French writers. Fernelius|| alludes to it, and Ambrose Paré and Palmarius speak more fully on the subject. In this treatise

* Hieronymi Cardani Opera omnia. Lugduni, 1663, Tome vii. De methodo medendi, Sectio prima. Cap. xxxvi. p. 216.

† Liber de Febre Pestilentiali. Venetiis, 1556. Cap. iv. De pestichiis, morbillis, variolis, ac aliis cutaneis papulis et maculis et earum differentia, p. 67-70.

‡ Halosis Febrium. Lugd. 1558. Lib. vii. Cap. ii.

§ Op. cit. p. 156.

|| Universa Medicina, cum notis, &c. J. et O. Heurnii—Tr. ad Rhenum, 1656. De Febribus, Cap. xviii.

on the plague, Ambrose Paré* devotes a whole chapter to the examination "De eruptionibus et maculis quas purpureæ nomen intelligunt." It would seem that spots of various kinds appeared; for, "maculis per pestilentes febres cutis suffunditur variis locis, pulicum aut cimicum morsui similibus, nec simplices semper maculæ sunt sed assurgunt nonnunquam in grani milii formam." Their dark colour and sudden recession are spoken of as being dangerous and often fatal symptoms. They often appear before the buboes; at other times after them; frequently no buboes appear, but the eruption alone shows itself, generally on the third or fourth day, sometimes later, and occasionally not till after death. Palmarius† mentions, among the symptoms of plague, spots like flea-bites, which "febrem fere sequuntur et tertio, quarto, aut septimo die erumpunt, interdum serius, interdum citius, interdum una cum febre exoriuntur; modo cum bubone et carbunculo interdum aliquando post, sæpe sine his, aliquando etiam post obitum, veneno in extincto cadavere adhuc debacchante. In febribus malignis sæpe solitariæ sunt absque bubone et carbunculo, non minus tamen, quam si adessent, periculosæ." Instances are here afforded of spots like flea-bites, being sometimes associated with bubonic plague, at other times showing themselves unattended by bubo, and varying in the date of their appearance from the third to the seventh day.

The character of pestilence in Europe was now evidently undergoing a great change, and the solution of bubonic plague into a variety of kindred diseases had already commenced, although this process was not completed until the middle of the following century. De Thou ‡ speaks of an epidemic occurring in the year 1547, in the army of Charles V. at Zwickau, so severe in its symptoms as to prove fatal on the second or third day, but not attended by bubo; though "corpora illis liventia potius quam pallida, verminantibus passim papulis interfuere." The patients, moreover, suffered from extreme pain and heat of head, difficult respiration, vomiting, and bilious diarrhœa.

The *Morbus Ungaricus*, which appeared in the year 1566, at Comora in Hungary, in the army of Maximilian II., after his war with the Turks, and which afterwards extended over a great part of Europe, is one of the most striking of those mixed epidemics which formed the transition from plague to petechial fever. § The

* Opera Ambrosii Parei. Parisiis, 1582. Lib. xxi. Cap. xxviii.

† De morbis contagiosis libri septem. Parisiis, 1578. De Febre Pestilenti, Liber ii. Chap. xxiv.

‡ J. C. Thuani, Hist. sui Temporis. Londini, 1733. Lib. iv. §. ix.

§ J. S. a Grafenberg, Observat. Med. Rar. Libri vii. Lugd. 1644. Liber vi. De Febribus. De Morbo Ungarico is a translation from a German account of the disease by Balthasar Couradinus.

attack usually began about 3 or 4 p. m., with shivering, followed by heat, extreme pain in the head, pain and tenderness about the epigastrium, and intense thirst. On the second, or at latest on the third day, delirium came on, and like the other symptoms was aggravated towards evening. The tongue became dry and very black, and the lips were chopped. Some patients suffered much from colic, while others laboured under pleurisy, and spat blood. The disease ran its course in from fourteen to twenty days; the occurrence of deafness during its progress was considered to be a good sign, and was far from unusual. The parotid glands often swelled and suppurated; but the worst form of crisis was the formation of a carbuncle on the tarsus, which often produced gangrene of the extremities. Conradinus saw feet amputated in ten cases on this account at Vienna. In addition to these symptoms, however, spots like flea-bites appeared on the skin of all the patients. In some cases these spots were of larger size than in others; occasionally they occupied the whole body, but usually were confined to the chest, the spinal and intrascapular regions and the arms; and they were observed to assume a livid or blackish colour in dying persons.

It may appear superfluous to seek for evidence to prove, that these spots, though termed *petechiæ*, were different from those to which that name is now applied; for the situation in which they were seen corresponds to that occupied by the measly eruption of typhous fever, and the changes in colour which they presented under different circumstances could not have occurred in real *petechiæ*. To place this point, however, beyond doubt, it may be well, even at the risk of being tedious, to quote from Sennertus,* a description of the spots which were at that time called *petechiæ*.—" *Petechiæ enim habent conjunctam febrem, quæ ab aliis plerisque maculis abest. Nec elatæ, longæ, vel magnæ sunt, sed rotundæ et pulicum morsibus rectissime comparantur. Ne tamen pulicum morsus pro petechiis habeantur, qua ratione differant videndum. In morsibus pulicum in medio tanquam punctum quoddam morsus vestigium inest, quodque compressione non delitescit, etiam reliquo rubore circumquoque evanescente. Petechiæ vero, si digito comprimantur, evanescent quidem sed redeunt, et nullum puncturæ vestigium medio conspicitur. Præterea petechiæ in brachiis, cruribus, pectore, et copiosius ac frequentius in dorso apparent, non autem in facie.*" Another valuable fact which we learn from the same author, is that the eruption in petechial fever was by no means limited to any particular day, but that very generally two distinct crops appeared, the former of which was generally looked on as symptomatic, the latter as critical, while in almost all cases the appearance of fresh spots after the seventh

* Opera. Parisiis, 1641. Tom. ii. De Febris, Lib. iv. Cap. xiii. p. 742.

day was an unfavourable symptom. Felix Plater,* too, in describing his own case, speaks of the eruption of "maculæ pulicum morsibus haud absimiles," on the tenth day of a fever. The advocates of the opinion, that typhous fever is a specific exanthematous disease would not find it very easy to adduce instances of similar irregularity in the appearance of the eruption of small-pox or measles.

Allusion has already been made to the solution of plague into other diseases, and each succeeding epidemic, of which we now find mention, affords fresh proof of the reality of its occurrence. No one is ignorant how famine and pestilence wasted Holland during the gigantic efforts which the Dutch made to throw off the Spanish yoke. Forestus† informs us, that pestilence then presented itself not merely under the ordinary form of bubonic plague, but spots alone appeared on some persons, while others died of malignant fevers, unaccompanied by any of the peculiar external characters of pestilential disease. Another witness to the horrors of those times, Cornelius Gemma,‡ watched the same class of maladies in Belgium, till, in 1574, he saw them assume most of the characters of true plague, though still retaining this peculiarity, that serious symptoms seldom appear before the third day, and then on the fourth, fifth, or seventh day the patient might suddenly expire. All parts of Europe seem to have been alike ravaged by disease during the latter part of the sixteenth century, and time would fail were we to attempt to describe each epidemic. In the year 1574, Don Luis Mercado, Physician to Philip II. of Spain, published a treatise, "De essentia, causis, signis et curatione febris malignæ, in qua maculæ rubentes similes morsibus pulicum erumpunt per cutem. Valladolid, 1574."§ Many works on the same subject appeared in Spain during the last twenty years of the century; there being various opinions as to the nature of petechial fever, some regarding it as identical with plague, others considering it to be a different malady arising from endemic causes.

During the diet at Ratisbon in 1594, there appeared a disease which De Thou || says was similar to the *Morbus Ungaricus*. It does not seem to have been attended by bubo, but spots like flea-bites broke out on the surface, as well as others which were somewhat elevated above the skin, and were probably of the same nature as those to which the Dutch applied the name "Pepercooren."¶ The varying type of the fever is worthy of note. Instan-

* *Observationum, Libri Tres*. Basileæ, 1641, p. 316.

† *Opera Omnia*. Rothomagi, 1653. Tome i. *Lip. vi. passim*, and especially *Obs. iv. v. vi. and xxxv.*

‡ *De Hemitritæo Pestilenti*, in v. Grafenberg, *Lib. cit.* pp. 756—758.

§ Villalba, *Lib. cit.* Tome i. p. 75.

|| *Op. cit.* *Lib. xxxix. §. xxiii.*

¶ Joannis Heurnii, *Opera Omnia*. Lugduni, 1658. *Tomus ii. De Febribus Liber, Caput xx.*

ces of it will be hereafter adduced as having occurred in different epidemics. “—— Febris quæ nunc tertiana simplex, nunc notha apparebat, cum et vera continua esset.”

Although bubonic plague continued still to occur during the former half of the seventeenth century, and not unfrequently raged to a great extent, yet no one can read the medical writers of those times without being struck by the increased prevalence of petechial fever. De Lamprière * notices that “La fièvre purpurée, maculeuse, ou lenticulaire, est une autre sorte du nombre des malignes, et que est d’ordinaire avantcourreuse de la pestilente.” He describes its symptoms shortly, and sums them up in some Latin verses which he quotes from one of his contemporaries. Impressed with the idea that plague proceeds from a specific cause, he laboured hard, though not very successfully, to establish the distinctions between plague and petechial fever, but allows that the two diseases are allied to each other, and that both are of a contagious nature.

During the continuance of the thirty years’ war, neither famine nor pestilence ceased in central Europe. The war was carried on in a manner which seemed designed to aggravate its horrors; for the troops lived by plunder; wherever they came they left a desert behind them, and never quitted a town or village without burning the houses or razing them to the ground. Thus deprived of all places of refuge, the luckless inhabitants were forced, with their wives and children, to join the train of the army. Disease attended their steps; and all who were attacked by illness, uncared for were left behind, and thus served to spread death around. Of the diseases of this time one specimen may suffice, and no better could be chosen than the sad tale which Claromontius† tells of the state of Lotharingia, and of the town of Nancy during this period. The enemy had placed a garrison in Nancy after laying waste the whole country round, and slaughtering the inhabitants or driving them into captivity. The ground was left untilled, and thence arose so dreadful a famine, that the people who remained fed upon roots, dogs, cats, or horses. To add to their thus unspeakable wretchedness, pestilence broke out in the town and neighbourhood, while the heat of the sun was so great that the ground was burnt up, and the very trees drooped their leaves. The disease became universal; in every house there lay some dead, and many died untended. The graves were choked, and the living were not sufficiently numerous to bury the dead, who were left exposed in the highways, or at most, were covered with a few spades-full of earth; and yet the wolves and birds of prey refused to feed upon their bodies. This distemper, although so dreadful,

* *Traité de la Peste*. Rouen, 1620. Première Partie, Chap. xx.

† *De aere, locis, et aquis, terræ, Angliæ*. Londini, 1672.

yet did not present quite the features of bubonic plague, and though occasionally so suddenly fatal that people fell down dead while seated at table, yet usually it ran a much more protracted course. It began with violent pain in the head, vomiting, and often with fainting. The body was bathed in a profuse sweat, attended with a sense of pungent heat; and the thirst was intense, and unrelieved by drink. In some patients buboes appeared on the seventh day, in others exanthemata showed themselves at that time, and these were usually looked upon as favourable symptoms;—for most persons, in whom they did not occur, suffered from incessant watchfulness, violent delirium, and profuse sweats; and ultimately died.

The evidence of Diemerbroeck* as to the transmutation of petechial fever into plague at Nimeguen in the year 1635 is particularly valuable. He informs us, that, during the spring of 1635, a pestilential epidemic fever was very prevalent through the whole province of Guelders. The summer was hot, the autumn still hotter, and during it putrid diseases increased; small-pox, measles, diarrhœa, and dysentery of the worst kind abounded. “Sed omnium maxime prædicta febris pestilens, quæ indies majora incrementa sumens, magis magisque in pejus mutabatur, et purpurata, (quam Petechialem vocant Itali) evadebat; donec tandem in apertissimam pestem transiret.”

It would not be very easy to find, even at the present day, a better treatise on typhous fever than that of Riverius,† who was an eye-witness to the pestilence which prevailed at Montpellier, after the siege of that city in the year 1623, and which carried off a third of its inhabitants. Riverius seems to have had a mind more independent and less shackled by names and systems than most of his predecessors, and, accordingly, having observed the great similarity between *febris pestilens*, or plague, and *febris maligna*, he treats of the two diseases together. He remarks that no single symptom can be set down as pathognomonic of these diseases, for in true plague bubo and carbuncle do not always appear, neither is the *febris purpurata* invariably characterized by the eruption of spots, nor are all the symptoms of these affections ever found assembled in one person. That which is distinctive of pestilential fevers is, that all the symptoms have a peculiar character which is not met with in other fevers, and that the different symptoms do not correspond with each other; thus, for instance, while the pulse is scarcely affected the patient suffers intense pain in the head, and is in a state of watchfulness or delirium. He likewise observes, that fevers attended with many symptoms of pestilence, even with

* Opera Omnia. Ultrajecti, 1685. Tractatus de Peste, Lib. i. Cap. iii.

† Lazari Riverii, Praxis Medica. Editio Nona, Hagæ Comitum, 1658. Tome ii. Lib. xvii. Sectio iii. pp. 437—488.

an eruption of purple spots, sometimes occur at a period when no pestilential epidemic prevails.

The epidemic which Riverius describes, differed from plague only in the non-appearance of bubo, and was attended by an eruption such as we have already frequently described. The difference between these spots and *petechiæ sine febre* did not escape his observation. He refers the latter to poorness and fluidity of the blood in persons prone to hemorrhages, while the spots in fevers result from an altered nature of the blood, and are sometimes critical, sometimes only symptomatic. Their appearance on the fourth, seventh, ninth, or some other critical day indicates a favourable crisis, but they likewise appear on other days. A copious eruption of the spots was a good sign; their retrocession a very unfavourable symptom.

Nearly a thousand years have passed since Rhazes wrote an account of the small-pox. To that treatise we still refer, and find in it a description of the disease just as it now exists. The symptoms are the same at the present day as they were then; the eruption presents the same character, the fever runs a similar course. But, with petechial fever the case is very different. We have seen it associated with bubo and carbuncle, and becoming transmuted into plague, and we have seen it unattended by any such symptom. The eruption has been found to be sometimes absent, sometimes it appeared on the third day, at others not till the tenth. Cases have been mentioned above, in which the fever was of the continued kind, others in which it assumed an intermittent type. Of this latter occurrence, Bartholinus has recorded a remarkable instance.* He informs us that, during the summer of 1652, which was unusually hot and dry, an intermittent tertian fever prevailed epidemically at Copenhagen, and affected many persons. Its type was various, sometimes occurring every day, at other times on alternate days. It was attended by various symptoms; severe pain of the head, especially at the occipital region, pain of the loins and back, together with burning heat of the skin, bilious vomiting, thirst, restlessness, and occasional delirium, were of the most frequent occurrence. Petechiæ likewise appeared on the surface, and, fading during the remissions, reappeared on the return of each paroxysm.

In the course of our inquiries we have now reached a period when the diseases of England obtained other chroniclers than the mere historian. We will accordingly select from Willis† the account of the typhous or camp-fever which occurred at or near Ox-

* T. Bartholini, *Historiarum Anatomicarum Rariorum*. Cent. I. et II. Hafniæ, 1654.—Cent. II. Hist. 56.

† *Diatribæ Duæ, Medico-Philos., quarum prior agit de Fermentatione altera de Febribus, &c.* Londini, 1659.—De Febribus, Cap. xiv. Pp. 171—174.

ford, in the year 1643, among the troops of the King and Parliament. This history will afford a good illustration of the fact, that typhous fever may appear, and run its course for some time without being attended with any eruption. The disease broke out in the spring of 1643, both in the royal garrison at Reading, as also among the troops of the Earl of Essex, who laid siege to that place, and soon became the worst enemy with which each army had to contend. So severely, indeed, did the army of the Earl of Essex suffer, that, though Reading surrendered in April, it was the middle of June before he approached Oxford, and then he pitched his camp ten miles distant from that place, at Thome. The royal troops were quartered partly in the town, partly in the surrounding villages; and the infantry, who were crowded together in small inns, and were dirty in their own habits, suffered most, falling sick by companies. The disease spread from the soldiery to those who lodged them, and by midsummer extended to a circuit of ten miles around Oxford, and was particularly fatal to the old. At first, the malady resembled putrid fever, though more irregular in its course; sweat or diarrhœa being the most usual forms of crisis; while in many cases, after the sixth or seventh day, head affection came on, and the patients died either in a state of raging delirium or of coma. About midsummer the disease increased in fatality, and the symptoms underwent a change, for the pulse became weak, irregular, and often intermittent, exhaustion occurred very suddenly, and there appeared an eruption of spots, some of which were small and of a bright-red colour, while others were larger, and of a more livid hue, and buboes formed in the groins of several patients. This fever bore so many points of resemblance to plague, that a tract* was written by royal command; one object of which was to point out the differences between the two diseases. It may suffice to mention this fact without entering into a detail of the author's arguments. One only we will mention, which is, that although in this sickness a great many were spotted, yet in comparison of those who recover, but few of them die, while in plague almost all die upon whom spots appear.

In the year 1658, an intermittent fever, attended with a measly rash, prevailed over the whole of England, and converted, as Morton † tells us, the whole island into one vast hospital. Morton observed the disease in London, Willis ‡ at Oxford, and the accounts given by the two nearly coincide. In some patients it appeared as a regular intermittent, in others, its course was irregu-

* *Morbus Epidemius anni 1643. Oxford, 1643.*

† *Opera Medica. Amstel. 1696. Tom. ii. Exercitatio Secunda, Appendix, pp. 234—236.*

‡ *Lib. cit. De Febris, Cap. xvii.*

lar, and in some it assumed the continued form. Morton observes, that in many patients after the sixth or seventh intermission, all traces of periodicity disappeared, and the disease changed into malignant continued fever, being accompanied by spasms and delirium, and proving fatal on the 17th or 21st day. In others, diarrhoea or vomiting came on, or inflammation of the lungs or pleura, and death followed on the 7th, 9th, or 11th day. The intermittent type seems to have been the more usual in the neighbourhood of Oxford, and the fever was either tertian or quotidian, but usually the former. In all cases the head symptoms were very severe, there being either violent headach or singing in the ears, stupor, or incessant watching. "Observavi," says Willis, "in nonnullis, quod primo aut secundo ægrotationis die maculæ latæ et rubicundæ morbillis similes in toto corpore sensim eruperint, quibus brevi postea evanidis febris statim intensior et præcipue affectiones capitis longe graviores evaserunt." At first the pulse was full and regular, but afterwards it became weak, unequal, and often intermittent. The occurrence of subsultus was a very unfavourable sign, most who died fell into a state of stupor, from which they never recovered. The disease was contagious, and proved particularly fatal to those who were previously sickly. When recovery took place, it did not follow any well marked crisis, but the patients proceeded slowly, and with many vacillations towards convalescence.

Sydenham* noticed that a fever of a peculiar character preceded the plague of 1665, and was associated with it; and Dr Hodges, † who remained in London during the whole time that the plague prevailed, mentions that they who took the contagion likewise had a fever, which was of the worst kind, sometimes imitating a quotidian, at others a tertian, sometimes seeming to retreat, and at others attacking again with redoubled fury. Morton ‡ likewise informs us that they who were not affected by the contagion of the plague, were nevertheless attacked by an intermittent fever, and continued for days to experience febrile exacerbations and remissions. In addition to the plague tokens, real petechiæ, § and other eruptions, there also appeared a rash similar to that which has been supposed to be characteristic of typhus. This eruption,

* Works translated by Dr Swan. London, 1794. Section ii.

† *Loimologia, or an Historical Account of the Plague in London in 1665*. London, 1721. P. 50.

‡ *Op. cit.* p. 236.

§ The restriction of the term petechiæ to spots not disappearing under pressure, and produced by ecchymosed blood, is quite of recent date. In a dissertation by one Braun, (*Febris Maligna Petechialis, &c.* Tubingæ, 1665,) we find him saying (Cap. vi.) "Maculæ ipsæ petechiales diversitatem ostendunt ab aliis v. g. culicum aut pulicum, quod harum punctulo medio ceu morsus vestigio careant, compressæ subito evanescent subito redeant."

which was generally symptomatic, very rarely critical, differed in colour from a red to a purple hue. It was not persistent, but slight causes would occasion its temporary disappearance. "The spots," says Hodges,* "were sometimes few, but mostly very numerous; in some they were so thick as to cover in a manner the whole skin. I saw a little girl that was all over full with them, but upon a large sweat arising they all disappeared, and she recovered; yet sometimes the distemper was so delusory, that these spots would arise, and disappear, and come out again several times; that is, when nature gave its utmost efforts to expel the poison they might be seen upon the surface, but when the spirits languished, or upon any external cold, they would go in again."

Abundant evidence exists to prove that London was subjected almost every year to fever. We find this circumstance regretted by Erasmus in one of his letters, and alluded to by Dr Caius, while the synocha of London is minutely described by Morton. This was the disease which, having prevailed all over England in 1658, ceased just before the appearance of the plague, but showed itself again, combined with dysentery, after that disease had subsided. This fever and dysentery reappeared every autumn, and prevailed epidemically in London till the year 1672, when they gave place to measles, which raged with great violence for six months. After the declension of the measles, the fever lost its dysenteric character, and reappeared as before the plague, though usually with milder symptoms. Sometimes, however, the disease was attended with unfavourable complications, as diarrhœa, colic, or rheumatism; or if badly managed, it displayed signs of malignity, as petechiæ, and measly rash, and in some instances bubo or carbuncle.

Morton assures us that, between 1672 and 1692, synocha in some shape or other was the only form of epidemic fever. But Sydenham † has described a "new fever" which prevailed in the years 1684 and 1685, and differed from the fevers of preceding years. If, however, any one will study attentively Morton's treatise on fever, and then compare Sydenham's "Febris nova" with the epidemic of 1658, as described by Morton and Willis, he will, we think, arrive at the conclusion that the two diseases were closely allied to each other, while both were but aggravated forms of the ordinary fever of the country. Both had somewhat of an intermittent type; in both the pulse was at first but little different from the pulse of health; in both, head symptoms were extremely severe; or, as Sydenham said of the fever of 1684, "There is so great a tendency to a phrensy that it frequently comes on spontaneously of a sudden;" and in both coma often supervened. Lastly, in both

* Op. cit. p. 129.

† Lib. cit. Pp. 495—522. An Essay on the Rise of a New Fever.

eruptions appeared, which Sydenham divided into two classes, namely, petechiæ and miliary eruptions. "Sometimes," he says, "such spots as are termed miliary eruptions come out all over the surface of the body, appearing much like the measles, only they are redder, and when they go off, do not leave branny scales behind them, as in that disease.

It would go far towards proving the truth of the notion which it has been the aim of this paper to establish, if it could be shown that in any epidemic the rash disappeared while the other symptoms continued unchanged. Of this occurrence Ramazzini* has recorded a remarkable instance, presented by the fever which prevailed at Modena and the neighbourhood in 1692, and the two following years. The disease began about the vernal equinox of 1692; and gradually increasing in severity during the spring and until the dog days; "Sub peticulari larvâ sævitiem suam exercuit." When, however, the heat of summer set in, "Febris hæc purpuram deposuit, nec illam resumpsit," until the heat of summer declined. The same change was observed in the disease during the two following years, "Vestem quidem, sed mores ac genium haudquaquam mutans," for the absence of the eruption was attended by no diminution in the violence of the symptoms. The similarity of this disease, both in the symptoms which it presented and the circumstances under which it occurred, to that described by Fracastorius, is noticed by Ramazzini. It was more fatal in the city than in the country, was characterized by great and early prostration of strength, and severe head affection. There was considerable pain at the epigastrium, and disturbance of the bowels, and when to these symptoms hiccough was associated, the case was sure to have a bad termination. Suppression of urine was by no means uncommon. The very early appearance of the eruption was a bad sign, for the most part the spots showed themselves between the fourth and seventh day, being detected first on the neck, back, and chest, and appearing on the lower extremities in proportion as they faded on the upper parts of the body. Many husbandmen recovered perfectly without medical help, the eruption appearing on the seventh day. The spots are thus described: "Variæ autem ac diversi coloris erant prout varii ac diversi erant ægotantium habitus; aliæ erant rubræ, aliæ pallidæ, aliæ fuscæ coloris; aliæ parvæ, aliæ latæ, aliæ in summo, aliæ in profundo, et quas non nisi oculis transverse tuentibus liceret inspicere: quod genus peticularum fuit valdè ominosum."

Want of attention to the comforts of the soldiery was probably one reason of the frequency and fatality of camp fever at the end of the seventeenth and in the early part of the eighteenth century.

* Opera Omnia Medica et Physiologica. Londini, 1718. Constitutiones Epidemicæ Mutinenses Annorum quinque, pp. 109—121.

Hoffmann* and Stahl† have furnished us with accounts of fevers prevailing among the German troops after their return to winter quarters. The fever described by Hoffmann occurred in the year 1683 at Minden, after the troops of Frederick William of Brandenburg had returned from Hungary, where they had been fighting the Turks. Stahl describes the fever which took place in 1689, likewise after the return of troops from Hungary, and the two diseases bore a close resemblance to each other. They were attended by great prostration of strength, severe head affection, and delirium. The early appearance of spots was a bad sign. Stahl says that they were of a pale rose colour, and usually showed themselves about the seventh day; sometimes they were accompanied by a miliary eruption. Gangrene of the extremities occasionally occurred; of which two instances are mentioned by Hoffmann.‡ The same writer has detailed the particulars of other two epidemic fevers, one of which occurred in the year 1699, the other in 1728. Both fevers were attended by an eruption of petechial spots, which appeared, in the former, from the seventh to the ninth, in the latter, about the fourth day.

The epidemic spotted fever, which prevailed at Rome in the year 1695, affords a striking illustration of how slight a cause may suffice to modify the character and course of the disease. Lancisi§ informs us, that in the middle of May and beginning of June tertian fevers prevailed in the suburbs of St Angelo. They did not bear bleeding, and ushered in pestilential fevers, some of which observed a tertian, others a continued type. The tertian form prevailed among those persons who lived near the fosses, while the disease ran a continued course in all who were removed from the hurtful influence of their exhalations. The tertians had a great tendency to assume the continued form, and about the fifth day intermissions usually ceased, and the eruption then appeared. Eruptions of spots, some red, others livid, likewise appeared in the continued fever, and both varieties of the affection were accompanied by severe head symptoms, and tended to a rapid termination, often proving fatal before the twelfth day.

The history of our own wars in the eighteenth century would furnish us with many instances of the varied forms under which camp and ship fever occur; but we must content ourselves with adducing but very few more facts in illustration of the position we have advanced. Sir John Pringle regarded camp and jail fever as but one disease, and, when enumerating their symptoms, does not omit to describe the spots very exactly, and to notice the great ir-

* Opera Omnia. Genevæ, 1740, Tome ii. Sect. Prima, Cap. xi. p. 88.

† Collegium Causale, &c. Suidnitii, 1734, Casus 93.

‡ Lib. cit. Tome ii. Cap. x. pp. 80—84.

§ J. M. Lancisi, Opera Omnia. Romæ, 1745. Tom. iii. Lib. ii. Cap. v.

regularity in the time of their appearance.* “There are,” says he, “certain spots which are the frequent but not inseparable attendant of the fever in its worst state. These are less usual on the first breaking out in the hospitals; but when the air becomes more corrupted the spots are common. They are of the petechial kind, of an obscure red colour, paler than the measles, not raised above the skin, of no regular shape, but confluent. At some distance, the skin looks only a little redder than ordinary, as if the colour was uniform; but upon a nearer inspection the interstices are seen. For the most part they are little conspicuous, and, unless looked for attentively, may escape notice. These petechiæ are very irregular, sometimes appearing as early as the fourth or fifth day, and at other times as late as the fourteenth. They are not at all critical, nor are they reckoned among the mortal signs, as they only concur with other circumstances to argue more danger. The nearer these spots approach to a purple colour the more ominous they are, though not absolutely mortal.” Huxham† notices the frequent appearance of spots, and of an efflorescence like the measles, which showed itself principally on the breast. The eruption generally appears on the fourth or fifth day, though sometimes not before the eleventh day. Huxham’s words are, “We frequently meet with an efflorescence like the measles in malignant fevers, but of a more dull and livid hue, in which the skin, especially on the breast, appears as it were marbled or variegated.”

The fever which prevailed at Vienna in 1757‡ presented greater regularity in the appearance of the eruption, and a more unvarying character than has been shown by most epidemics of typhus. Even in that, however, it is not difficult to discover many points in which it differed from the specific exanthemata. Thus, for instance, the period during which the eruption lasted was very uncertain, and two crops of it sometimes appeared. The disease commenced with catarrhal symptoms, pain in the head, lassitude, loss of appetite, and sickness. Frequently these symptoms were severe, even at an early period, and the prostration of strength was extreme. When the disease ran its course regularly, on the fourth, or at latest on the seventh day, “in superficie cutis emergabant stigmata rubra, læti admodum coloris cum levamine omnium symptomatum modo punctula sat parva æmulantia, modo late magis patentia, in collo, pectore, et cordis scrobiculo apprime

* Observations on the Nature and Cure of Hospital and Jail Fevers; in a Letter to Dr Mead, by J. Pringle, M. D. London, 1750, p. 20. See also Observations on the Diseases of the Army, by J. Pringle. Part iii. Chap. vii. and *passim*.

† An Essay on Fevers, &c. 2d edit. London, 1750, Chap. viii.

‡ *Historia Medica Morbi Epidemici sive Febris Petechialis quæ ab anno 1757, fere finiente, usque ad annum 1759. Viennæ grassata est, &c. Auctore J. G. Haenöhl, Vindobonæ. 1760. Apud Sandifort, Thesaurum, Vol. i.*

conspicienda : mox per reliquum corpus et extremitates diffusa apparebant." Such was not, however, the invariable course of the disease, for the spots are said to have appeared in some cases on the seventh or ninth day. Hasenöhl likewise gives the particulars of a case in which petechiæ appeared on the fourth day, and, at the same time, the patient complained of pain in the axilla; on the ninth day a second crop of petechiæ appeared; and in a day or two afterwards, an abscess which had formed in the axilla was punctured. The patient eventually did well.

A still more striking irregularity in the date of the appearance of the eruption was observed in the petechial fever epidemic at Mayence in 1760. Reuss,* one of the modern advocates of the opinion that typhous fever ought to be classed among the exanthemata, quotes from his instructor, Strack, an account of the disease, from which it would seem to have run much the same course as that just described. The different times, however, at which the rash showed itself were very singular. "On the ninth day of the disease," says Strack, "sometimes even later, there appear upon the skin spots which resemble flea-bites, but without any defined margin. These spots often come out on the seventh day; sometimes on the second day, immediately after the onset of the disease, sometimes they are visible from the very beginning of the affection."

The last epidemic to which we shall advert, is one which prevailed at Leipsic in the year 1799,† after an unusually cold and damp winter. Before the outbreak of typhus, all diseases had been observed to be characterized by uncommon prostration of strength; and, in May, catarrhal and rheumatic fevers, diarrhœa, and dysentery assumed many typhoid symptoms. The disease was ushered in by the ordinary symptoms of fever; but the pain in the head was extremely severe, delirium came on early, and the patients lay in a state of watching, unrelieved by sleep. Pain in the chest or abdomen often came on between the fifth and ninth day, and when the disease took an unfavourable turn the delirium became furious and incessant, subsultus occurred, sordes collected about the teeth, the tongue became dry and black, and the face, neck, and chest assumed a livid hue. Every symptom increased in severity, and the patient died in the second or third week from the outbreak of the disease. Eisfeld observes, that not only did eruptions of various kinds appear, but even in the same individual different sorts of spots were observed. Petechiæ, ecchymoses, miliary vesicles, and a rash, like that of measles or of scarlatina, are all noticed as having occurred in the course of the disease.

* *Wesen der Exantheme, Erster Theil, das Fleckenfieber oder die Kriegsppest, von Dr J. J. Reus. Aschaffenburg, 1814, p. 37, note.*

† See the description by J. Eisfeld, M. D., in Vol. vi. of *Brera's Sylloge Opusculorum Selectorum. Ticini, 1806.*