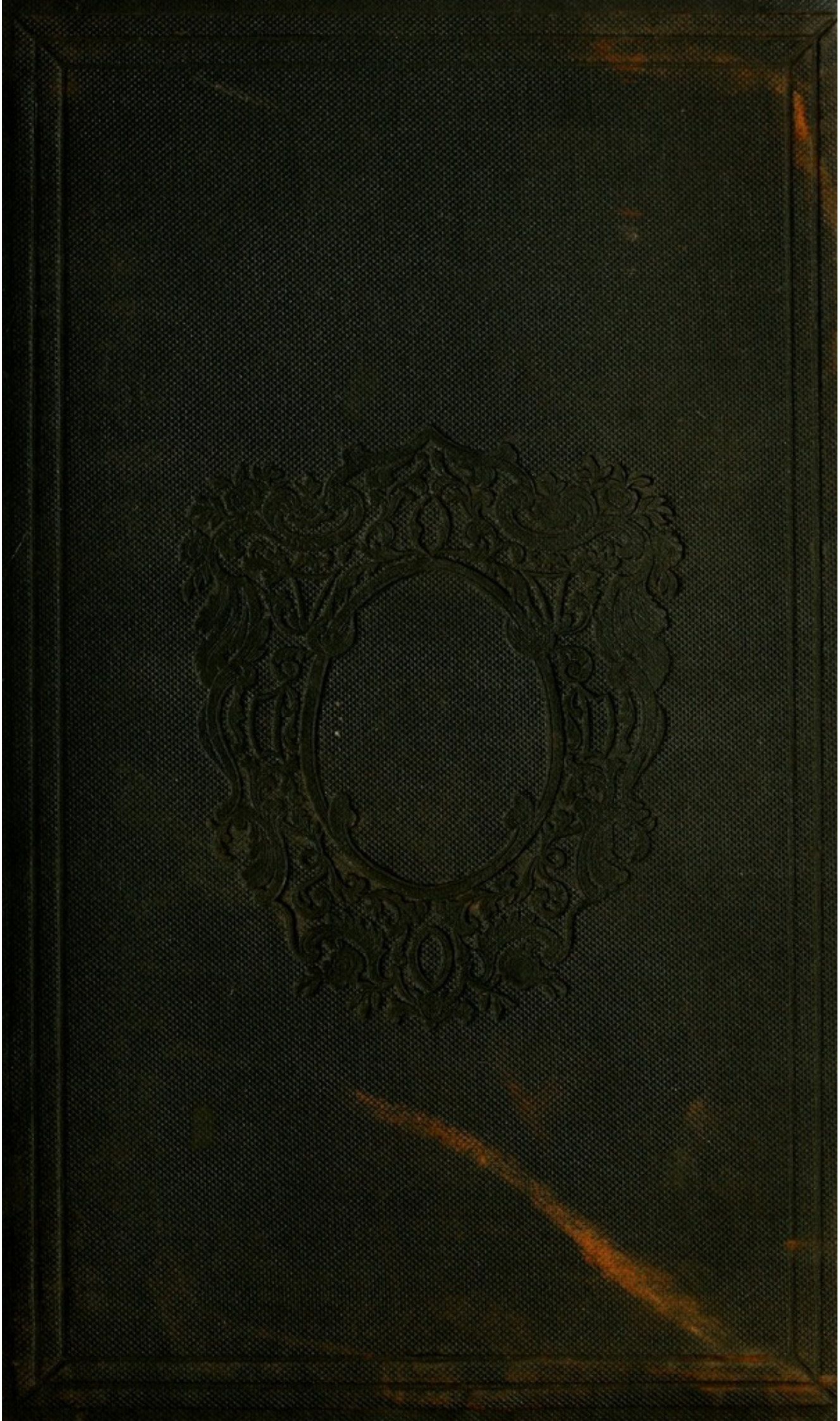
A treatise on the nature, causes, and treatment, of erysipelas / by Thomas Nunneley.



ON ERYSIPELAS.

"He who, whether by original observation, or by legitimate deduction drawn from the observations of others, shows the identity of, or points out analogy between, disorders hitherto commonly thought to be distinct and dissimilar complaints, by so far as he accomplishes this, does he assist in simplifying medicine, and, consequently, contribute towards its advancement, theoretically as well as practically."

A TREATISE

ON THE

NATURE, CAUSES, AND TREATMENT,

OF

ERYSIPELAS.

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PREFACE.

THROUGHOUT the following pages, to the word Erysipelas a more extended signification is attached than frequently is assigned to it. Instead of being restricted to an affection of the skin alone, or even of the skin and subcutaneous cellular membrane, it is rather used as a divisional term, comprising several species. By some, this may be thought too vague and indefinite; perhaps it may be so, but the Author hopes that his meaning will be sufficiently apparent; and as he is by no means wedded to the expression thus employed, or thinks it faultless, when a better is suggested he will be happy to adopt it. No one can be more impressed than himself with the propriety and advantage of accurately defining terms, and constantly using them as defined; this being observed, the exact signification attached to a word is not likely to give rise to confusion and obscurity. What he wishes is, to show that many complaints which have received distinct names, and the effects of which are principally manifested in different tissues, are, in reality, of the same nature, and, consequently, are but modifications of each other. The word phlegmon has for long been generally employed as applicable to inflammations of various textures; and, in the same manner, the

word erysipelas is now employed, as indicating a contrary condition or type, from phlegmon. If the term phlegmonous inflammation be allowed, he sees no reason why that of erysipelatous should not also be permitted. Indeed, it has already, by more than one writer, been so employed.

Numerous quotations and references will be found; others might have been added, especially from foreign authors, but just now some of the works were not within his reach, and he has not felt justified in introducing many second-hand extracts, particularly as he thinks the authorities he has referred to are sufficiently numerous and respectable to render the omission of less importance; indeed, his fear is, lest it be thought that he has erred by introducing too many quotations. This, however, has not been done for the purpose of swelling the size of the volume; or to bear down conviction by the mere force of names, but in points which are still so much disputed, and where equally good authorities are decidedly opposed to each other, testimony to facts is of the utmost importance. This is especially the case with subjects like the present, where, from the many circumstances which are liable to escape observation, but which may, nevertheless, exercise much influence, it is well to bring evidence from distant and unconnected sources, in order that if there be error on the part of one observer, it may be corrected by another; for, if the facts upon which our deductions rest are not valid, however good and legitimate the inferences in themselves may be, they must necessarily be valueless. Even when the evidence relates rather to opinions than strictly to facts, as, for instance, to the effects of some particular modes of treatment, the statements of those who differ ought to be carefully weighed, as,

by so doing, we shall often be enabled to arrive at a more accurate conclusion, not only upon the disputed point, but also upon the nature and treatment of the complaint.

If decided opinions are expressed as to the intimate connection and relationship between the several affections mentioned, and that in nature they are the same as that spreading inflammation of the dermis, which is commonly denominated erysipelas, the Author hopes the facts and arguments advanced in support of such opinions, will be thought, if not as convincing to others as to himself, at least sufficient to prevent the charge of advancing an unsupported hypothesis. It cannot be denied, that enough has been produced to show the manifest inconsistency and incorrectness of many of the prevalent opinions regarding the nature of erysipelas, as well as the contradictory and opposite treatment so confidently recommended for the cure of even the more ordinary forms of the complaint.

About ten years since, the first of two prizes which had been offered for Essays on Erysipelas and Vaccination, the best essay on either subject to receive the first prize, by a Society with which the Author was then connected, was awarded to a short dissertation on erysipelas sent in by him. Many of the statements and opinions which are contained in the present treatise, are founded upon what was then advanced, and may be regarded as an amplification and extension of the views then brought forward. At that time he was urged by several of his friends to publish the essay, and although he thought it better to wait until time and experience had enabled him more maturely to consider the subject, and to see if what he has regarded as a

deficiency in the Medical Literature of the day, viz. a separate treatise in this important disease, would not be filled up by an abler hand, the intention was not entirely abandoned, when, last year, circumstances arose which induced him to put his observations into the form in which they are now presented to the Profession.

Leeds, September, 1841.

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ERRATA.

Page 30, line 8, from bottom, for *shown* read *thrown*.
63, „ 3, „ „ for *in* read *on*.
71, Note, for *Walker* read *Waller*.
153, line 7, from bottom, for *attached* read *attacked*.

ON ERYSIPELAS.

INTRODUCTION.

It cannot but have been remarked as a singular circumstance, that, in the present day, when distinct and even voluminous works have appeared on almost every disease to which the human body is liable, many of them comparatively unimportant, no separate treatise should have been devoted to a consideration of the Nature, Causes, and Treatment, of Erysipelas. Whatever this may have arisen from, it certainly has not been occasioned by the trivial character of the complaint, nor from the profession having generally overlooked its importance. Recognised as Erysipelas was in the earlier eras of Medical Science, its existence has never been forgotten, nor its danger under-estimated. But, as if to make amends for the want of a distinct monograph on Erysipelas, perhaps no subject has occupied a larger share of notice in the various Periodical Publications, in the Proceedings and Transactions of different Societies, and in the pages of systematic writers, both domestic and foreign. Erysipelas being one of those diseases which stands upon the debatable ground, between medical and surgical cases, it has, perhaps, as often

come under the notice of the Physician as of the Surgeon; accordingly, both classes of practitioners have claimed it, and introduced it into their lectures and writings.

Some of the essays are of considerable length, and are very able productions of men celebrated for their extensive learning and sound practical skill; yet, it must be admitted, they by no means embrace the whole subject. Most of them have been written for the purpose of enforcing some particular method of treatment, or for directing attention to one or other of the different forms which the disease assumes, rather than with the design of examining in what Erysipelas essentially consists; what the constitutional and local symptoms of this disease as a whole are; to what particular collection of phenomena the term should be restricted, and in what these differ from those other phenomena to which the term is not applied; or whether there really be any peculiar and characteristic tendencies, either structural or functional, general or local, of such a nature as to exercise a controlling and modifying power over the progress and termination of the disease, and our treatment of it; whether the general disturbance is caused by the local disease, or the local by the general affection, and if the former, whether this necessarily arises from the peculiar structure of the part attacked; and if the latter, from something specific in the nature of the complaint. That a work, in which these points are set at rest, would be beneficial and useful to the medical student, cannot be doubted,—but it is by no means of very easy accomplishment; the questions involved are confessedly of considerable importance, and respecting which the cleverest men disagree. The widely different and contradictory opinions of well-informed men who have paid attention to Erysipelas, as well to its nature as to its treatment, add much to the difficulty, which is by no means lessened by their observations being spread over so many distinct publications. For proof of this we need not go back to the

ancients; if we only refer to those who, in more recent times, or even in our own day, have given definitions and classifications of Erysipelas, it will at once be apparent, that scarcely any two have agreed as to the precise signification or extent of the word, or what diseases should be included under the term.

Before entering upon the consideration of the nature of Erysipelas, I shall take the liberty of placing before the reader, some of the definitions and subdivisions of nosologists, and of those who have written upon the subject. It is not here attempted to give every definition which has been propounded, which would occupy too much time and be altogether unnecessary, but such only as may be sufficient to show the various opinions entertained on the subject.[1]

By Sauvages, Erysipelas is placed between Purpura and Scarlatina, forming Genus VII. of Order Exanthematicæ, Class Phlegmasiæ.

"*Class Phlegmasiæ*—Pyrexia continua vel remittens cum interna inflammatione, vel cum exanthematis. *Order Exanthematicæ*—Eruptiones cutaneæ cum pyrexia sæpius maligna, quandoque lenta. *Genus Erysipelas*—Eruptio erythematis cum synocha febre."

[1] Celsus has spoken of a disease under the denomination of Ignis Sacer, which is by many supposed to be the disease now generally known as erysipelas, or St. Anthony's Fire.—(Vide Celsus de Medicina, Lib. v. chap. 28. par. 4th.) He classes it among the ulcers, and speaks of two species. It must, however, be confessed, that the descriptions rather agree with the symptoms of Herpes of Willan and Bateman, than with those to which the term erysipelas is now applied. I am the more inclined to this opinion from what Celsus has said in chap. 26. par. 33rd. of the same book, where he gives a short but definite account of the treatment of erysipelas; by which it appears, from the little said, that he applied the term to what might be regarded as our most characteristic variety of the disease—phlegmonoid erysipelas; as well as from the knowledge that, at least, three or four distinct diseases were, up to the eighteenth century, confounded under the common term, Ignis Sacer.—Vide Rees's Cyclopædia, words Ergot and Ignis Sacer.

Linnæus chose Erysipelas as a prototype of eruptive fevers, separating it, however, from those of a contagious character.

"*Class Exanthematici* — Febris cum efflorescentia cutis maculata. *Order Solitarii*, *Genus Erysipelas*—Macula rubens, urens, pressione dissimulanda, tumidiuscula, superficialis, dilatabilis, desquamatione finienda. Febris synocha initio acuta, cum inquitudine."

Vogel has separated the constitutional fever from the local affection; the first he has placed among the inflammatory fevers, between Hysteritis and Podagrica,—the latter among the inflammations, dividing it into two genera according as there are vesicles or not—Erysipelas and Hieropyr. The latter includes our Shingles, which he regards as differing from Erysipelas only in being seated upon the abdomen.

"*Class Febres*, *Order Inflammatoriæ*, *Genus Erysipelacea*—Ephemera, erysipelatis expulsionem efficiens. *Class Vitia*, *Order Inflammationes*, *Genus Erysipelas* — Inflammatio lata cutis, quæ splendet et leviter ac æqualiter tumet. *Genus Hyeropyr* — Erysipelas cum eminentibus ardentibus pustulis. *Zoster* dicitur si abdominis cutem occupat."

Sagar, like Linnæus, has placed Erysipelas among the non-contagious exanthemata.

"*Class Exanthemata*, *Order Non-contagiosa*, *Genus Erysipelas*—Est eruptio erythematis cum febre continua, vel amphimerina potius dicenda, tumiduli, superficialis, dilatabilis, desquamabilis; sistit nimirum maculas latas, amplas, subtumidulas, non suppurabiles; sanguis emissus crusta inflammatoria non est tectus, sed pelle alba, tenui, et sat tenaci; dolor erythematis est calens, rodens. Tria stadia observantur erysipelatis: *Primum* absolvit gravedo, horror, inappetentia, lassitudo, cum febricula amphimerina; die 2. 3. vel 4. incipit secundum stadium, eruptio, nemphe, erythematis, quod ordinario in 4 usque diem augetur; in tertio stadio collabitur, successive tumor, calor, et dolor erythematis, et

epidermis desquamatur, quod opus plerumque 4 diebus natura absolvit."

Cullen has carried out the idea of Vogel, and has separated erysipelatous affections into two distinct classes; according as the constitutional affection is symtomatical of the external inflammation,—*Erythema:* or, as the external inflammation is dependent upon the general constitutional disturbance, — *Erysipelas.* The former he has placed among the Phlegmasiæ, the latter among the Exanthemata.

"*Class Pyrexiæ, Order Phlegmasiæ, Genus Phlogosis*—Pyrexia, partis externæ rubor, calor et tensio dolens. *Species Erythema*—Colore rubicundo, pressione evanescente; ambitu inæquali, serpente; tumore vix evidente, in cuticulæ squamulas, in phlyctænas vel vesiculas abeunte; dolore urente. 1. Variat vehementiâ; 2. Variat causâ remota; 3. Variat complicata;"[2] which include several varieties.

"*Class Pyrexiæ, Order Exanthemata*—Morbi contagiosi, semel tantum in decursu vitæ aliquem afficientes; cum febre incipientes; definito tempore apparent phlogoses, sæpe plures exiguæ per cutem sparsæ. *Genus Erysipelas*—Synocha duorum vel trium dierum, plerumque cum somnolentia, sæpe cum delirio. In aliqua cutis parte, sæpius in facie, phlogosis erythema. Species sunt 1. *Erysipelas Vesiculosum* erythemate, rubedine serpente, latum spatium occupante, et locis ejus quibusdam in vesiculas magnas abeunte. 2. *Erysipelas Phlyctænodes* erythemate ex papulis pluribus, trunci corporis partes præcipue occupantibus, et protinus in phlyctænas, sive vesiculas parvas, abeuntibus."[3]

Willan and Bateman, like Cullen, have distinguished between erythema and erysipelas; but their terms are by no means synonymous with his.

"*Order Exanthemata*—Superficial red patches, variously figured, and diffused irregularly over the body, leaving inter-

[2] Cullen's Synopsis Nosologiæ Methodicæ.—Vol. i. pp. 31, 89, 161, 201, 327, and Vol. ii. p. 85, 1780.

[3] Page 131.

stices of a natural colour, and terminating in cuticular exfoliations. *Genus Erythema*—A red smooth fulness of the integuments; accompanied with burning pain; terminating generally in scales; occasionally, but rarely, in gangrene; not contagious. According to Willan there are six species—to Bateman, seven; 1. E. fugax, 2. E. læve, 3. E. marginatum, 4. E. papulatum, 5. E. tuberculatum, 6. E. nodosum, 7. E. intertrigo.

"*Order Bullæ*—A portion of the cuticle detached from the skin by the interposition of a transparent watery fluid. *Genus Erysipelas*—A febrile disease, in which some part of the body is affected externally with heat, redness, swelling, and sometimes vesications. There are four species of erysipelas; 1. E. phlegmonodes, 2. E. œdematodes, 3. E. gangrenosum, 4. E. erraticum."[4]

"Erysipelas is often a contagious disease."

In the later editions of Bateman, the editor, Dr. A. Thomson, has removed erysipelas from the Bullæ to the Exanthemata.

The following is Dr. Parr's classification.[5]

"*Order Eruptiones, Genus Exanthema* — Eruptions generally depending upon specific contagion, often epidemic, usually with fever. *Species Erysipelas*—After a fever of three or four days, phlogosis in the face, occasionally in other parts, accompanied, more often succeeded, by delirium, terminating in branny scales. Var. *Intermittans*—Erysipelas irregularly returning at different intervals, chronic, with little fever.

"*Order Phlegmasiæ*—Local fixed pains with a lesion of the functions of the diseased organ, an increased discharge from its vessels, usually attended with fever. When external, the parts affected are floridly red, generally swollen, the tumour often circumscribed, ending in effusion, suppuration, or gan-

[4] Bateman's Synopsis of Cutaneous Diseases.—Pp. 167–177.

[5] Parr's Medical Dictionary.—Art. Nosology.

grene. *Genus Phlogosis* — Inflammation; pain less violent, tumour inconsiderable, redness less florid, irregular, extending; with debility, often with typhus; terminating generally and rapidly in gangrene. *Species* 1. *Erythema*—External phlogosis of a pink colour, disappearing on pressure; pain burning; terminating generally in branny scales, often in phlyctenæ or vesicles, at last in gangrene. *Var.* 1. *Mitis*—Pernio, from cold;—Combustio, from violent heat. *Var.* 2. *Maligna*—Anthrax."

Dr. M. Good has also made a distinction between the local and general affection, but he has used the word erythema as the generic term, and has classed under it those forms of disease which, by many preceding nosologists, were regarded as well-marked specimens of erysipelas.[6]

"*Class Hæmatica, Order Phlogotica*—Fixed heat and pain or soreness; increased secretion; lesion of a particular part or organ, mostly accompanied with fever. *Genus Erythema*—Red, glabrous, tumid fulness of the integuments; disappearing on pressure; pain burning; inflammation ulcerative; terminating in cuticular scales, or vesicles; occasionally in gangrene. There are seven species—1. E. œdematosum, 2. E. erysipelatosum, 3. E. gangrænosum, 4. E. vesicularum, 5. E. anatomicum, 6. E. pernio, 7. E. intertrigo.

"*Class* 3. *Hæmatica, Order Exanthematica*—Cutaneous eruption, essentially accompanied with fever. *Genus Emphlysis*[7] —Eruption of vesicular pimples, filled progressively with an acrid or colourless, or nearly colourless fluid; terminating in scurf, or laminated scales. *Species E. erysipelas* —Vesication diffuse; irregularly circumscribed; appearing in a particular part of the body, chiefly in the face, about the third day; with tumefaction and erythematic blush; fever usually accompanied with sleepiness, often with delirium. *Var. a. E. locale. Var. b. E. erraticum.*"

[6] Good's Study of Medicine, by Cooper.—3d. Edit. Vol. ii. p. 364.

[7] Vol. iii. p. 69.

Erysipelas makes one of six species into which Emphlysis is divided; the Thrush, Cow-Pox, and Water-Pox, being included with it.

Rayer, like Willan and Bateman, whom he very closely follows in their subdivision of these diseases, has made distinct genera of erythema and erysipelas; both of which, however, he places under the order exanthemata. He defines erythema thus:[8]

"*Erythema* is a non-contagious exanthem, with or without fever, characterised by one or more red spots, varying from some lines to many inches in diameter, and spread over one or many parts of the body; the ordinary duration of which, in an acute case, is from one to two weeks." His seven varieties correspond with those of Bateman. Of erysipelas he says,—"*Erysipelas* is an extensive and non-contagious exanthematous inflammation, characterised by a red colour of the skin, with swelling of the subcutaneous cellular membrane, terminating commonly by resolution and desquamation, sometimes by suppuration, and rarely by gangrene."

Alibert, unlike Rayer, has not placed erysipelas with the exanthemata, but with vesicular affections, under the denomination of Dermatoses Eczémateuses. He also distinguishes between erythema and erysipelas, making of each a genus; his descriptions and subdivisions are as follow:—

"*Erythema*—Eczema shows itself upon one or many parts of the integument by elevations which are red, inflamed, circumscribed, more or less extended, more or less superficial: commonly it terminates by desquamation, or branny exfoliations of the epidermis. Sometimes there happens excoriations or even ulcerations of the skin. Erythema comprehends many species, which it is important to distinguish: E. spontaneum, E. epidemicum, E. endemicum, E. intertrigo, E. paratrima, E. pernio, E. per adustionem.

[8] Traité des Maladies de la Peau, 1836.—See Art. Erythème et Erysipèle.

"*Erysipelas*—Eczema shows itself upon the surface of the integument, principally upon the face, arms, thighs, or other parts of the body, by eruptions of a yellow red colour, but very rarely of a deep red; by pressure of the finger this redness disappears for the moment. There is heat with an itching or burning pain. The fever is primitive or secondary. The disease terminates on the twelfth or fourteenth day by desquamation or furfuration, sometimes by more serious results. Erysipelas is divided into three species: E. exquisitum, E. phlegmonodes, E. œdematodes.[9]

Were it necessary, definitions of erysipelas might be farther multiplied, both from the older and more recent writers, as Callisan, Frank, Richter, &c.: their works may be consulted by those who wish to go further into this enquiry. Surgical writers have for the most part been content with a more simple classification of this disease; and, although their divisions have not been identical, they have approached much nearer to each other than have those of more systematic nosologists. Thus Desault[10] has divided erysipelas into phlegmonous, bilious, and local: Pearson[11] into acute, œdematous, and malignant or gangrenous, which is followed by S. Cooper in his First Lines of Surgery;[12] while Mr. Lawrence, in his very able paper in the fourteenth volume of the Medico-Chirurgical Transactions, seems to consider erythema as the mildest form of erysipelas, "which may be called spreading inflammation of a considerable portion of the skin, with diffused redness and swelling, sometimes preceded and generally accompanied by fever." He thinks three species are sufficient:—1. E. simplex, 2. E. œdematodes, 3. E. phleg-

[9] Alibert's Traitè Complet des Maladies de la Peau.—Pp. 5, 15., folio, Paris, 1833.

[10] Œuvres de Desault, par Bichat.

[11] Pearson's Principles of Surgery.—P. 197.

[12] Cooper's First Lines.—4th. Edit. Vol. i. p. 72.

monosum."[13] Mr. James also divides erysipelas into three species, but separates them from erythema, of which he makes a genus, including several species. His three species of erysipelas are, 1. E. superficiale, 2. E. phlegmonodes, 3. E. œdematodes.[14]

In the subsequent pages it will probably be necessary to refer to the definitions and divisions of others, but a glance at the above descriptions will at once reveal the very different ideas these authors have entertained of the disease, and explain the reason of its treatment being still so unsettled. It will also show that, while with one hand dissimilar affections have been grouped together under the same name, thus giving rise to much confusion; on the other, separations and distinctions have been made where none naturally exist; and farther, that the descriptions of the disease, in some of the definitions, by no means correspond with its daily manifestations.

It is not my intention in this place to criticise these definitions; remarks will arise in the progress of the work. They have been here placed in order to show the position which has been assigned to erysipelas, and the opinions which have been entertained of its nature. At the same time it presents the additional advantage, as we proceed, of rendering so frequent reference to the works unnecessary.

[13] Med.-Chirg. Trans.—Vol. xiv. p. 35.

[14] James on Inflammation.—P. 370.—1832.

NATURE OF ERYSIPELAS.

It has more than once been maintained, by well-informed persons, that nosological classifications neither have, nor ever can, confer any benefit upon practical medicine. Were this opinion true, it would go far to prove that practical medicine never can assume a place among the more exact sciences, since correct definitions and classifications form the basis of true scientific deductions. It must be confessed that the important disease, or class of diseases, now under consideration, forms no exception to the general objection which has been made against nosology, as a reference to the preceding pages will prove, since scarcely any two writers agree as to the nature, causes, or treatment of the affection, or the position which it should occupy in an arrangement. How far the objections against classification generally may be true, this is not the place for enquiring; it may not, however, be improper to remark, that the objections apply rather to the manner of what has been done, than are proofs of the existence of any insuperable obstacle in the thing itself. While with one set of classifiers theory has too often been allowed to usurp the place of observation; with another, in imitation of the classifications of naturalists, external appearances have too often been seized upon as diagnostic, to the exclusion of the more important, if less prominent constitutional signs. Thus, some have supposed that erysipelas is a specific disease, having clearly defined characters, and that the cutaneous affection is merely the effect of a salutary effort of nature to relieve herself of

some morbific matter; others, on the contrary, have disregarded the constitutional symptoms, or supposed them to be dependent upon the inflamed condition of the skin.

The term erysipelas is perhaps one of the oldest, and also one of those which are most frequently employed in medical language; yet it would be difficult to find another where so little agreement exists as to its precise signification. In the pages of medical writers we find the word by some restricted to almost a single affection of only one tissue—the skin; while by others, diseases evidently having not the least, or but a very slight, connection with each other, are included under the term.

Vogel appears to have been among the first to discriminate between the local affection and the constitutional disorder, a distinction which probably suggested to Cullen his farther separation between erythema and erysipelas; the former of which he places, as we have seen, among the phlegmasiæ; the latter among the exanthemata. The distinction made by Cullen between the two, he has explained at length in his First Lines: "Cutaneous inflammations are of two kinds, commonly distinguished by the names of *Phlegmon* and *Erysipelas*. Of the latter there are two cases which ought to be distinguished by different appellations. When the disease is an affection of the skin alone, and very little of the whole system, or when the affection of the system is only symptomatical of the external inflammation, I shall give the disease the name of *Erythema;* but when the external inflammation is an exanthema, and symptomatical of an affection of the whole system, I shall then name the disease *Erysipelas*."[1] It should be observed that he makes the terms "Erythema, Rose, and St. Anthony's Fire," synonymous, while nearly all other writers apply the two latter terms to erysipelas, as defined by him. This separation Willan and Bateman carried so far as to place erythema and erysipelas under very different

[1] First Lines of the Practice of Physic.—Vol. i. chap. 2. p. 295.

orders, and they also adopted different subdivisions, as well as included different affections under the terms. Rayer, though he adopts the specific divisions of Willan and Bateman, has so far differed from them and also from Cullen, as to place erythema and erysipelas as adjoining genera under the exanthemata; and, to add to the confusion, Mason Good, while he adopts the distinction laid down by Cullen, yet includes very different diseases under the terms, and gives definitions which by no means agree with his.

How far the distinctions which have been made between erythema and erysipelas are well founded, is, to say the least, doubtful. If by erythema were meant a mere redness of the skin, there might probably be no objection to the use of the term; but it cannot, I apprehend, be denied, that the separation of the two, with the various definitions given to them, has been productive of obscurity: indeed, there is scarcely any point in which the definition of one writer is not contradicted by that of another, and not unfrequently the definitions are manifestly at variance with facts, or with the author's own descriptions of the disease. Take, for instance, Cullen's description of erysipelas: he has placed it among the exanthemata, which he defines to be "Morbi contagiosi semel tantum in decursu vitæ aliquem afficientes; cum febre incipientes; definite tempore apparent phlogoses; sæpe plures exiguæ per cutem sparsæ." A description which, as Mr. Lawrence has remarked, is clearly not applicable to erysipelas; nor, indeed, does it agree with Cullen's own account of the disease. "This disease," (erysipelas) he says, "is not commonly contagious; but as it may arise from an acrid matter externally applied, so it is possible that the disease may sometimes be communicated from one person to another. Persons who have once laboured under the disease are liable to returns of it."[2] How far he was aware of the contradiction does not appear; but it is evident he felt some

[2] First Lines.—Vol. ii. chap. 6. p. 263.—(Edinbugh, 1791).

difficulty on the subject, since, in the same chapter, he says, "I suppose the erysipelas to depend upon a matter generated within the body, and which, analogous to the other cases of exanthemata, is in consequence of fever thrown out upon the surface of the body. I own it may be difficult to apply this to every case of erysipelas." And farther on, "it seems doubtful if this disease be properly in Nosology separated from the Phlegmasiæ."

Similar objections might be made to show the difficulty which besets the nosologist when he attempts to make erysipelas a specific disease, strictly resembling the exanthemata, from which it differs in so many respects. By most authors an inflamed condition of the tegumentary system is considered essential to the existence of the disease; indeed, as has already been stated, some regard the individuality of the complaint as resulting from, and solely depending upon, the peculiar texture of the skin inflamed, as Dr. C. Smyth,[3] and Dr. Duncan.[4] Even those who, like Cullen, suppose that the cutaneous affection is dependent upon the constitutional, still consider the external inflammation essential to the existence of erysipelas, as all their descriptions show. Yet every practitioner must have observed, that in many cases the constitutional and cutaneous symptoms are by no means commensurate with each other, which they ought to be were this the correct view of the case. Whether we represent the cutaneous inflammation as always giving rise to a peculiar constitutional affection, or a specific febrile disorder invariably occasioning a peculiar vesicular eruption of the skin, we shall find it not agreeable to what may constantly be observed in practice.

So, also, if we take the symptoms mentioned as characteristic of erythema,[5] and compare them with those of erysi-

[3] Medical Communications.—Vol. i. p. 177.

[4] Trans. of Med.-Chirg. Society of Edinburgh.—Vol. i. p. 470.

[5] Vide definitions of the disorder in Introduction, and also the works of Willan, Bateman, Parr, Good, and Rayer.

pelas, we shall find them so merging into each other, that the impropriety of the artificial distinction becomes strikingly apparent. Possibly an exception should be made so far as regards the erythema nodosum of Willan and Bateman, inasmuch as it appears doubtful if it bears any relation to their other varieties of erythema, or whether it be not in reality, as I am inclined to think, an affection of the periosteum; the redness of the integuments being merely symptomatic of the deeper disease; the skin itself being only secondarily involved. That it is not a primary affection of the integuments is shown by the fact of the disease being always placed along one of the superficial long bones, as the tibia or those of the fore-arm, and the extent of the redness being always in proportion to that of the swelling underneath; at any rate, it differs essentially from the other species of erythema of the same authors.

No writers in their descriptions have clearly marked out the distinctions between erythema and erysipelas, unless it be those who have limited the former term to the local affection alone, which should have been done, were the two as distinct as the exanthemata, among which they have found no difficulty in discriminating; and in many cases the same disorder, which by one author has been treated of as erythema, by another has been considered to be erysipelas.[6] This discrepancy would in itself be sufficient to excite strong suspicion of the two being identical; and accordingly we find that some few writers have not only maintained the sameness of the two, but have also included disorders of many other parts under the same head. How far this may be correct I now proceed to enquire.

That there exists an original difference in the constitutions of different persons, by which they are more or less prone to particular diseases, or to disorders of particular organs or tissues; and, moreover, that when two persons, who are thus

[6] As by Willan and Good.

constitutionally different, are affected with the same kind of disease, this difference in temperament will induce considerable modifications in the symptoms, and render variation in the treatment necessary, I suppose to be an admitted fact. Whether this difference arise from an original conformation, or be acquired by habit, upon what particular arrangement of the minute organization it depends, in the present state of our knowledge it is impossible to say. Though there may have been by some physiologists, as Richerand,[7] an attempt at overstrained minuteness in the distinction of these differences in temperament; and by many of the older practitioners, undue importance attached to theoretical speculations founded upon them, by which the treatment of disease was much influenced; yet, I think no true observer of disease will deny that such a thing as diversity of temperament really does exist, and also that it does exercise an influence over the whole system, both in health and disease: a consideration which, while not allowed to usurp the place of actual observation in each case of illness, ought not, in our management of it, to be altogether overlooked.

It will also, I presume, be generally acknowledged by those who are accustomed rather to rely upon facts than to be governed exclusively by speculations, that there are such things as idiopathic and irritative or sympathetic fever; as well as inflammation and irritation: for, although it may be very difficult to find terms to describe all or any of these states which shall be perfectly free from objection, and to name symptoms which shall invariably be present, or even clearly to point out in what each *essentially* consists, and in what it differs from the others; and although the existence of such conditions as positive entities,[8] or as distinct from each other, has been denied by high authorities; yet, that there are such things, daily observation at the bed-side shows. That there

[7] Richerand's Nouveaux Eléments de Physiologie.—Chap. xiii. par. 228.

[8] Andral's Precis d'Anatomie Pathologique.—Tome i.

are certain morbid phenomena, to which the term inflammation is applied, which usually lead to certain results, and that these results are different from those conditions which are caused by what is called irritation, I cannot doubt. Notwithstanding many objections have been made to the use of the word irritation, as denoting a substantive condition of parts[9] distinct from inflammation, I think almost all observers will agree as to the existence of such a state, in which both the local and constitutional signs are different from those accompanying inflammation, and which also lead to different results and require different treatment. That these two states of irritation and inflammation often merge into each other cannot be denied; that the former is often, so to speak, only a preliminary to the latter, is certain; and that it sometimes succeeds to the latter is also true. Which of the two conditions shall be established may be determined by a variety of circumstances; such as the condition of the body at the time of the attack; the temperament of the person seized; the nature of the ailment; the organ affected; the structure or seat of the tissue involved; peculiarity in the epidemic, and many other circumstances, such as the mode of life, diet, temperature, and condition of climate or season, as well as the treatment adopted. Some of these modifying causes may be permanent, others only temporary; in the former case they will influence the whole course of the affection, in the latter they may be removed, when the type of the disease will assume corresponding modifications. These two conditions of constitution are, when clearly exhibited, widely different from each other, and may be regarded as the two extremes of a graduated scale between which there is every conceivable grade. In the one case we shall have much vascular excitement, with corresponding power in the nervous energy, and if the disturbance be occasioned by an external injury, there will be a great tendency to limit the mischief by the effusion of coagulable lymph, by

[9] James on Inflammation.—P. 55.

which the wound is at once healed, or surrounded by a barrier within which the suppurative action is confined; or if the disturbance depend upon some more general cause, and the action be exhibited upon one of the continuous membranes, it is also marked by the effusion of plastic lymph, which has not lost its vitality, or which is capable of becoming organised, and thus forming a part of the living body. This may be regarded as exhibiting the effect of an unnatural excitement in a vigorous and sound constitution, the local action of which, at least in the first instance, is not unhealthy, if any unusual action may be said not to be unhealthy, whatever it may eventually become by too much excitement. In this state of things the pulse is always frequent, but seldom excessively so, and full or hard, giving to the touch a sensation as if the blood were circulating with increased force.[10]

In the opposite condition, whether the effect be from external injury or constitutional cause, there is no such effort made to limit the action by the effusion of plastic lymph; on the contrary, there is considerable tendency for the mischief to spread extensively, and if lymph be effused it is not of that organisable kind, it has already lost, or nearly so, its vitality, and is not capable of becoming a part of the living body; it is always accompanied by much serum, which not unfrequently is of a turbid appearance. There is great vascular excitement without corresponding nervous energy; here the pulse is always very quick, seldom full or hard, but often jerking and easily compressed. As before said, these two conditions are not to be regarded as specifically and essentially distinct from each other; they are very distinct when extreme instances are selected, but there is no defined boundary which separates them, and though in practice we meet with both

[10] I here speak only of physical signs, and am not entering into the doctrine of inflammation; whether the blood circulate in increased quantity and with increased force; or whether the course of its progress be actually suspended or impeded.

forms well displayed, much oftener cases are intermediate between the two. To the one the epithet phlegmonoid diathesis, to the other erysipeloid diathesis, may properly be applied.

John Hunter was the first who seems clearly to have understood and pointed out this important distinction by his terms adhesive and spreading inflammation, and the explanation he gives of them. "Strength and weakness," says he, "are the opposites of each other, and therefore must have very different effects in disease. They have very different powers in resisting disease, in their mode of action, and also their readiness to terminate that action. Strength probably under every circumstance produces good effects, or at least it is always more in the power of management by art than weakness; I can conceive, however, that too much strength might act with too much power, becoming unmanageable under disease that excites action."[11] "Weakness produces a consciousness of its own want of powers, or incapacity, which produces increased action that even proceeds the length of unnatural actions called nervous. These effects are no less visible in acute diseases in such constitutions, which include accidents or violence of all kinds; for they run into too violent action, which is not of a salutary kind, and therefore may be called unnatural diseased action."[12] "It is probable that the blood of people of weak habits is weak in its living principle, which it therefore very soon loses upon extravasation so as to become unfit for a bond of union, by which it degenerates into an extraneous body, and therefore the suppurative inflammation must take place if there be strength to produce it."[12] "I suspect that the erysipelatous inflammation has very little of the adhesive in its nature."[13]

This disposition to act, with the differences in power which different constitutions possess to do so, and the influ-

[11] Hunter on the Blood, &c. 4to., p. 228.—1794.

[12] P. 231. [13] P. 253.

ence thereby exercised over the result of injuries, has, since Hunter's time, at least in this country, been recognised by all surgeons, and has often been referred to by writers. No one has, however, entered so fully into the subject as Mr. Travers, in his valuable work on Constitutional Irritation, where he has discussed the causes, both local and general, upon which these different effects depend. If it should be objected, that no distinct line of demarcation is shown between purely irritative and inflammatory action, or that it is not clearly pointed out upon what changes in any particular organ, or in the system, the one or the other depends; it may be replied, that we are not to expect the same precise and mathematical demonstrations in physiological and pathological deductions as may fairly be demanded in some other enquiries; the nature of the subject does not admit of it. All the parts of the animal œconomy are so intimately connected and mutually subservient, the one to the other, that we never see the functions of one organ much deranged without all being more or less affected. Indeed, the great desire which has been evinced by nosologists, to clearly and sharply define different diseases, has been one of the greatest barriers to the success of the young practitioner; because, at the bedside, he is often at a loss to discover those distinctive characters which he has been taught to regard as essential to, and characteristic of, certain affections. On the contrary, he frequently finds one disease, as it were, gradually merging into another, and that the well-marked diagnostic indications are often not to be met with.[14]

[14] Let me not be understood as decrying classification of diseases: on the contrary, I believe arrangement is necessary to, as well as indicative of, an advanced state of any science. All I oppose is, the making disease more defined in works, than it is found to be in nature. Medicine is as yet in but a very imperfect state. The philosophy of diseased action is very little known; facts are accumulating, and the time may not be very far distant, when some comprehensive mind may unfold some general and universal principles.

I know not if my meaning be sufficiently explained in the foregoing statement; but what is meant is, that any injuries of precisely the same nature, and in the same situation, which in one person shall induce a limited local action —phlegmon, either without much constitutional disturbance, or, if attended by general symptoms, they will be such as are indicative of power, in which depletants are not only borne, but are highly necessary; shall in another person, or even in the same at another time, induce a local action in which there is considerable tendency to spread far and wide—diffuse inflammation, or erysipelas, in which the constitutional symptoms are those of great action with little power, and where depletants are not only not indicated but are positively injurious. Farther, that these different states may arise without external injury, in which the local action may be exhibited upon the surface of the body, or be thrown upon an internal membrane, according as there may be some peculiar determinating cause in the part itself, or elsewhere. Thus, what in one person would take the form of ordinary acute peritonitis, in which the inflammation is limited by the effusion of coagulating lymph and the agglutination of contiguous parts to each other, would, in another, as a puerperal woman, assume the character of diffuse inflammation not limited by the adhesion of neighbouring parts, and in which the effusion is more copious, consisting principally of serum with portions of soft lymph floating in it. It is not necessary that the appearances presented should be exclusively those of the limited adhesive form of inflammation, or those of the diffused non-adhesive; the affection may partake in every degree of one or the other, but as the limited adhesive type prevails it will be phlegmonoid, as the diffuse non-adhesive type, erysipeloid.

If this view of the nature of erysipelas be correct, it would evidently not only remove it from the exanthemata, as defined by Cullen and others, but would also deprive it of

any specific character whatever, at least in the sense the word specific is ordinarily employed in medicine; and it will become necessary to include under the term many diseases which by most are regarded as having no connection with it, though some few authors have advanced opinions and statements in favour of the view I have taken.[15]

That under all circumstances precisely the same phenomena will invariably be exhibited is not to be expected; even though the nature of the affection be the same, and the state of the constitution at the commencement be identical, these will to a greater or less extent be modified by the structure and functions of the part locally involved, and the extent to which they are affected. For as each part possesses something different in its organization from other parts, and doubtless in its healthy condition exercises a peculiar influence in the compound action of the whole animal machine, so we must also suppose that it will exercise an influence in a state of disease, impressing the constitutional signs with a greater or less particularity according to that with which it is endowed, and in proportion to the extent to which its functions are involved. Thus, if it be a portion of the tegumentary or the cellular tissue; of the mucous or the serous membranes, which is the seat of the local disease, the general symptoms may be somewhat diversified, and the treatment require some modification, although the disease itself may in its nature be identically the same, and under certain circumstances capable of exciting an erysipeloid inflammation in two different textures in two other persons. Besides this influence, which arises from the peculiarity of function, the local affection, in whatever part it be placed, becomes

[15] Especially the Franks. I have not their works to refer to, but this is stated by Dr. Copeland in his Dictionary of Practical Medicine (article Erysipelas), and also by Lawrence in the fourteenth volume of the Medico-Chirurgical Transactions, who gives a quotation from J. P. Frank, in which it is distinctly stated, that erysipelas attacks the internal membranes.

a secondary cause of disease, aggravating and tending to keep up the original constitutional disturbance; and hence, as we have every reason to suppose, cæteris paribus, that this is in direct proportion to the extent of the tissue affected, arises one very strong reason why we should endeavour to limit the local action. This it is often of the greatest importance to effect, as far as may be, in the outset,[16] not only because we then remove one important cause of general disorder, but as the local mischief is usually so much the worse, and more unmanageable, as the constitutional derangement is the greater; by removing this secondary cause of general disturbance we thus lessen the liability to serious and permanent local injury.

Into the question of the contagious or non-contagious nature of erysipelas, I do not just now propose to enter, but if it be contagious, it might be supposed to militate against the doctrine above laid down; this, however, I do not think is so, because it appears to be a general law with all those diseases where great action with little power is exhibited, (or, as was formerly termed, had a tendency to putridity) to assume more or less of this property of inducing a corresponding action in other persons, whose bodies may be pre-disposed to be so affected; another circumstance by which the class of asthenic disorders are distinguished from those of a sthenic character, which do not appear to possess, at least generally, any such disposition.

[16] This, it is evident, requires much care, and should not be done without consideration; for even though we may not allow with some that the local affection is to be regarded as beneficial, by throwing off from the system some injurious matter, which it might be dangerous to suppress, lest, to find an outlet, it be thrown upon some more important part; still we should endeavour to guard against metastasis, either by endeavouring to concentrate the local action upon the part first attacked, if it be the skin; or to induce this change in situation, by calling it to the surface, if it be seated upon a more important part; but above all, by restoring a natural state of the secretions.

The denial of the specific nature of erysipelas, or of any other disorder, must of course be taken with some limitation. No one would assert that where there is some diffused redness and heat, with a quick weak pulse, that there erysipelas is present, any more than he would declare, if these happened to be more circumscribed, and the pulse at the same time stronger, that there exists phlegmon; both may be mere temporary alterations, depending upon some changing emotion; in both there is something wanting to constitute the disease, which we recognise by the usual accompanying phenomena, but upon what immediate and proximate state of the system and part they depend, we know not. Porrigo, scabes, and rubeola, are specific diseases, because they always affect the same tissues, and invariably excite the same effects in a second party who may be infected by them. In this sense erysipelas is not a specific disease, for it does not always affect the same tissue, nor does it invariably produce the same effects in the same tissue; thus, though when the skin is affected vesications very commonly form, this is by no means invariably the case; and we have the strongest evidence for believing, that erysipeloid inflammation of one tissue in one person may induce it in a different tissue in a second person.

How far the humoral pathologists were correct, in attributing every disease to a morbid condition of the blood, is perhaps more doubtful than that latterly it has been too much the fashion to discard the probability of alterations in the nature of the blood, as forming an important element in pathological as well as in physiological enquiries; and certainly if the humorists erred on the one hand, the solidists have erred, to *at least* an equal extent, on the other. To me it seems impossible that the condition of a fluid like the blood, from which all the solids of the body are derived, and which in every act of life plays so important and essential a part, should not also have very considerable influence over the ingress, progress,

and egress of disease. That the blood under many circumstances undergoes great changes is certain, and when we consider how readily its composition may be affected, and the relative proportion of its components altered, it does seem impossible to exclude the idea of its influencing the course and character of disease, and even of supposing in some cases that these changes in the blood essentially constitute the diseased action. The older practitioners appear to have been in error, in taking it for granted that in certain affections there was too great a spissitude, or lentor; in other affections the contrary condition; in one disease there was too much acidity;[17] in another, an alkaline tendency; and in treating the disease according to these notions, rather than by observing facts, and being governed by them in their treatment. To what extent these changes in the blood may proceed before disease be established, or if in each disease there is some peculiar change in the blood is not known; but that there may be many changes which cannot be detected by the blood's appearance to the eye, by which its vitality may be impaired, is probable; and that changes of a very perceptible character do often occur in erysipelas, is shown in post mortem examiations, as well as in those slighter alterations in its physical appearance when drawn from the body in the course of the complaint.

That the local affection is of an inflammatory character most, if not all, (Pearson does not) seem agreed upon; and, indeed, if we are to take the four signs of redness, swelling, pain, and increased heat, as proofs of the presence of inflammation, it must at once be admitted. Most writers, however, maintain that the peculiarity in erysipelas arises from the skin being the seat of the inflammation. Not to burden ourselves with all the statements on this point,[18] we

[17] At the present day Sir A. Carlisle has maintained that erysipelas is caused by an acid state of the blood.—Medical Gazette, vol. i. p. 400.

[18] Vide Nosological descriptions in introductory chapter.

may refer to some of them: Dr. C. Smyth has stated this as strongly as any one can do, "That the skin is the true seat of the erysipelas must be universally admitted; but I have gone a step further, and maintained, that the phenomena of this inflammation, and the peculiarity of the symptoms, are entirely owing to the nature or texture of the skin."[19] Dr. Duncan[20] limits erysipelas to cutaneous inflammation. Mr. Earle[21] and Mr. Arnott would limit the word to denote inflammation of the skin alone; the latter even restricting the term erysipelas to that febrile affection which accompanies inflammation of the skin of the face only.[22] Mr. James[23] and Mr. Lawrence, while they consider it essential that the skin be affected, both include, under the term erysipelas, inflammation of the cellular membrane as well as of the skin; the former gentleman considering the cutaneous the primary affection; the latter thinking the inflammation attacks both the skin and cellular texture at the same time. "By erysipelas," says Mr. Lawrence, "I understand inflammation of the skin, either alone or in conjunction with that of the adipous and cellular tissue."[24] With most of these writers then erysipelas is essentially a specific disease, affecting one tissue alone, characterised by the local disorder, which forms the chief symptom, and upon which the constitutional disturbance depends. A view evidently quite opposed to that which I have endeavoured to establish, in which the character of the local changes are supposed to depend upon the constitutional peculiarity, rather than upon the organization of the part.

[19] Of the different Kinds and Species of Inflammation, and the Causes to which these Differences may be ascribed, by Dr. J. C. Smyth, in Medical Communications, Vol. ii. p. 169.

[20] Edinburgh Med.-Chirg. Trans.—Vol. i. p. 615.

[21] London Medical and Physical Journal.—Vol. lvii. p. 1.

[22] Same vol. p. 193.

[23] James on Inflammation, p. 371.

[24] Med.-Chirg. Trans.—Vol. xiv. p. 2.

Of later writers no one has more strenuously supported the idea of erysipelas being an inflammation of the skin, or of this and the subjacent cellular membrane, than Mr. Lawrence; it is therefore to his valuable paper that I shall principally refer, in endeavouring to refute this opinion, both because he may be presumed to have adduced all that can be advanced in support of this view, and if in criticising these opinions the error of thus limiting erysipelas be shown, it will afford a fair opportunity of establishing the contrary doctrine, without again going over the same ground.[25]

The following quotation from Mr. Lawrence's paper, in the fourteenth volume of the Transactions of the Royal Medico-Chirurgical Society, will show how decided an advocate he is for the inflammatory *(phlegmonous)* nature of erysipelas; "A consideration of the origin, development, and effects of erysipelas, of all its phenomena, whether local or general, leads us irresistibly to the conclusion that the nature of the affection is inflammatory. In its four leading characters of redness, swelling, heat, and pain; and in its effects of effusion, suppuration, and sloughing, it agrees with what is called phlegmonous inflammation, while the general disturbance preceding and accompanying the local affection, is often exactly alike in the two cases. Erysipelas is then merely a particular modification of cutaneous or cutaneous and cellular inflammation."[26] "I am quite at a loss to discover in this affection those marks of debility which some have so much insisted upon. Erysipelas, like any other inflammation, may occur in old and feeble persons, and the effects of disease, when aggravated by injudicious treatment, or protracted from any cause, will soon weaken the most robust; but however weak the patient, the

[25] In thus selecting the essay of Mr. Lawrence, let it not be supposed that the slightest disrespect is intended to him; all must agree that his known learning and talents command that deference be paid to whatever he writes. Had a more able paper on the same side been known, the writer would have taken it.

[26] Med.-Chirg. Trans., vol. xiv. p. 17.

local disturbance is one of excitement; there is increased activity in the circulation of the part, clearly marked by all the symptoms."[27] "In attempting to establish the distinction between erysipelas and phlegmon, we perceive a fresh proof that they are not different in their essential nature."[28] "The exanthemata are confined to the skin, erysipelas affects both the skin and cellular structure; while phlegmon has its original seat in the latter, the skin being secondarily involved. The difference between erysipelas and phlegmon, however, is not merely in the original seat or degree of the disturbance; there is also a difference in kind. We may indeed say, generally, that phlegmon is a more violent inflammation than erysipelas; but sloughing of the cellular substance is more frequent in the latter than in the former."[29]

"We must therefore admit, what even superficial observation will teach us, that erysipelas is a peculiar modification of inflammation in the skin and cellular texture. I can however by no means agree with those who regard it as a distinct species of inflammation, and as capable in that character of affecting various parts of the body as well as the skin. Some writers have referred to erysipelas certain inflammations of the conjunctiva, mouth, and fauces, of the respiratory and alimentary mucous surfaces, of the serous membranes in the head, chest, and abdomen, and of the brain, abdominal, and thoracic viscera. The proof of such an opinion would consist in showing that the same peculiarities which distinguish erysipelas from other inflammations of the skin, are found in certain inflammations of the parts just enumerated, and that such affections may hence be distinguished from ordinary inflammations of the same organs. No attempt of the kind has been made.....Since the distinguishing characters of erysipelas are clearly referable to the peculiarities of the cutaneous and cellular structures in which it occurs, we could not

[27] Med.-Chirg. Trans., vol. xiv. p. 28. [28] Page 29.
[29] Page 18.

expect to meet with the same affection in parts so differently organised as serous membranes and the viscera. The texture of the mucous membranes presents indeed some traits of analogy to that of the skin, and there is a corresponding conformity in some of their morbid phenomena. Thus so far as organization is concerned, we might suppose that mucous membranes would be susceptible of erysipelatous inflammations, but we see nothing that is clearly referable to this head, either during life or in examinations after death, although these membranes and the skin exert over each other a powerful sympathetic influence."[30] "Erysipelas of the face does not usually extend into the mouth, although it is not unfrequently preceded or accompanied by inflammation of the mucous membranes of the fauces; and those affections of the fauces which have been called erysipelatous have only one character in common with erysipelas, namely, redness. The swelling and vesications of erysipelas are not found in these inflammations, which, on the other hand are frequently attended with ulceration, with the formation of an ash-coloured or tawny substance, adhering to the surface, and with superficial sloughing; occurrences either very unusual or not belonging at all to erysipelas. Who has ever seen the changes that erysipelatous inflammation would produce in the mucous lining of the air passages, of the œsophagus, stomach, or intestinal canal? As nothing like proof has been offered of such inflammation occurring in the serous membranes or the viscera, it is not necessary to refute the notion."[31]

The inconsistency of these statements with each other must be at once apparent. Thus we are told that not only is there no essential difference in the nature of erysipelas and phlegmon, but that the phenomena, both local and general, are precisely the same, which, if it mean any thing, must be that the two diseases are identical—that, in fact, there is but one disease under two names. But immediately we are told

[30] Med.-Chirg. Trans., vol. xiv. p. 19. [31] Page 22.

"that erysipelas is a peculiar modification of inflammation in the skin and cellular texture;"[32] and also that "the difference between erysipelas and phlegmon is not merely in the original seat or degree of the disturbance; there is also a difference in kind."[33] Here the point which is generally so much insisted upon by Mr. Lawrence, and others, of the distinguishing phenomena of erysipelas, essentially depending upon the peculiar texture of the part locally affected, as well as the absolute identity of erysipelas with phlegmon, is given up, because if the inflammatory action in the two be modified and different in kind they can no longer be essentially the same; now if this peculiarity does not depend solely and exclusively upon the organization of the tissue inflamed, it must either depend upon something specific in the nature of the exciting cause, which impresses upon the disorder throughout its course its individuality, or upon the peculiar state of the constitution, which determines the erysipeloid form to be developed rather than the phlegmonoid. The former supposition Mr. Lawrence distinctly denies, so that only the latter remains. If then the essential characters of the disease depend upon the constitution, why may not these characters be manifested upon other tissues than the skin or subcutaneous cellular membrane, as some accidental cause shall determine? In a person predisposed to this form of inflammation it may become developed wherever the immediate excitement may be shown. Thus if there be a strangulated hernia, or a recent delivery, diffuse inflammation of the peritoneum will occur; if a wound or compound fracture of the lower extremity, erysipelas will be seen.

But we are asked, how it is possible for the "same affection to occur in parts so differently organised as the serous membranes and the viscera,"[34] and also to show that "the same peculiarities which distinguish erysipelas from other

[32] Med.-Chirg. Trans., vol xiv. p. 19. [33] Page 18.
[34] Page 21.

inflammations of the skin are found in certain inflammations of the parts just enumerated;"[35] that is, in the mucous and serous membranes and viscera. To this it may be replied, that we have yet to learn that there is any strict identity between the organization and functions of the skin and those of the cellular tissue. Now if there is not such identity, the onus probandi ought to lie with those who, while they assert that these two dissimilar textures are similarly affected, yet deny that others may be so. The resemblance in organization and in function, between the cellular tissue and the serous membranes, and between the skin and the mucous membranes, is much closer than it is between the skin and the cellular tissue; so that, according to the doctrine of similarity of organization producing liability to to sameness of diseased action, the serous or mucous membranes are more likely to be affected, as the cellular or the dermoid tissue may be the peculiar seat of erysipelas, than that the two latter should be diseased, the one from the other. So that, whether we adopt Mr. Lawrence's view of erysipelas attacking simultaneously the skin and cellular membrane; that of Dr. Duncan, of the disease spreading from the cellular membrane to the skin;[36] or that of Mr. James,[37] of the skin being primarily involved, and the disease from thence affecting the cellular tissue; the difficulty is not overcome. Moreover, as there is no difference in the organization of the subcutaneous cellular membrane, and in that which is so universally diffused on the exterior surface of all membranes, both mucous and serous, and which also enters so largely into the composition of the abdominal and thoracic viscera; there can be no reasonable objection to the assumption that, if in one situation it is obnoxious to any form of diseased action, so it may be in the other.

[35] Med.-Chirg. Trans., vol. xiv. p. 22.

[36] Edin. Med.-Chirg. Trans., vol. i. p. 616.

[37] James on Inflammation, p. 372.

As to the identity of the peculiar signs of erysipelas, during life or after death, in the part affected, which Mr. Lawrence would admit as proof of the existence of it; as far the nature of the case will allow, they certainly are manifested. With regard to the four predominent signs of heat, pain, redness, and swelling; the increase of heat is of itself so uncertain that no one would think of relying upon it alone; it depends upon the natural temperature of the part, and the distance of this from the centre of circulation; the lower the temperature usually is, the greater is the increase during an inflamed condition; so that in every species of inflammation, there is always less change in the temperature where an internal part is affected, than when the surface or an extremity is attacked. The degree of pain, taken alone, is a very uncertain sign, and depends upon many circumstances; but it will, without hesitation, be admitted, that there is at least as much tenderness in most cases of diffused peritonitis as there is in external erysipelas. That there is increased redness, with preternatural injection of the blood vessels of a membrane diffusely inflamed, is undeniable. As to the last sign, swelling, it must be borne in mind, that when the skin alone is affected there is very little swelling, and that when the cellular membrane is affected, the swollen condition does not so much depend upon engorgement of the vessels of the part, or actual thickening of the tissue itself, as upon the effusion of serum into its cells where it is confined, and thus the swelling is mechanically produced. If the part affected be an expanded membrane, which does not contain these cells but presents a free surface, we should, à priori, expect that the effusion would be thrown off and escape, accordingly we find it so; one characteristic of erysipeloid inflammation of the membranes is the quantity of effused fluid.

The objection, that the vesications of erysipelas are not found in these inflammations, is valueless, or worse, for it

proves too much; because, if vesications are essential to erysipelas, there are many cases which are, both by Mr. Lawrence and every body else, allowed to be decided cases of the complaint, but which must no longer be considered so, for they want the passport of vesication. In a great number of cases of phlegmonous erysipelas of an extremity, there are no vesications; they are not essential to the disease; they are mechanical products, and can only exist when the inflamed tissue is covered by an epithelium or cuticle, which is raised by the fluid effused under it. When the cutis is the part principally affected, vesications are commonly present, because there the effusion takes place from the surface of the skin, but if the disease is more confined to the cellular membrane, they are not present; their presence or absence in nowise alters the nature of the complaint.

The post mortem appearances are, as near as may be expected, the same. We are not to expect that in diffused inflammation of an important organ, life can be maintained for the same length of time that it is when the disease is confined to a part not essential to life; and accordingly we find that gangrene and sloughs are much more commonly found in the latter cases than in the former; but if we take analogous instances, where death has occurred before this stage has come on, (and it must be remembered that sloughing of the skin is in most cases of erysipelas caused by the destruction of its vessels and nerves, and consequently more a physical than a vital act,) there is a remarkable resemblance in the appearances. "The most striking and important distinction between phlegmon and erysipelas is, that the inflammation is confined to one spot in phlegmon, and is distinctly circumscribed in its seat, while it is diffused in erysipelas, and spreads without limit. This difference seems to depend upon the adhesive character of the inflammatory process in the former; the substance called coagulating, coagulable, or organizable lymph, effused round the inflamed part, forms a boundary between

it and the sound portion, which is altogether wanting in erysipelas. In the latter the effusion is serous, hence, when matter is formed, it is not confined to one spot, but becomes extensively diffused in the cellular tissue."[38] Who does not in this paragraph recognise the different appearances which result from circumscribed and diffused peritonitis, as revealed by post mortem examination? The extent of the inflammation and the nature of the effusion are clearly indicated. It may be added, that the effused matter is capable of exciting external erysipelas, if applied to an abraded surface, as we shall hereafter show; and farther, the condition of the blood is similar in the two forms of the complaint.

Though the diseases which appear to me to be so far similar in their phenomena, as properly to be included under the term erysipelas, vary considerably in their importance, from some which are of no great moment, as a mild attack of erythema, to affections of the most serious character; the greater number of these complaints must be regarded as amongst the most dangerous disorders mankind is liable to. Before enumerating the diseases which I think are thus connected together, the constitutional symptoms of all which are, in well-marked cases, decidedly of an asthenic type; and the local characterised by a disposition to spread, there being no barrier of coagulable lymph, but an effusion of serous, or semi-purulent matter; it may be well again to state that they are not separated by any well-marked and defined boundary, from those disorders where the constitutional symptoms are of a sthenic type, and the local concentrated to a limited spot, with an effusion, at first, of coagulable lymph, subsequently "laudable pus." The extremes are widely separated in symptoms, effects, and treatment, but between them there is every intermediate grade, hence the unavoidable confusion of those who have attempted too minutely to distinguish them from each other, and to find diagnostic traits

[38] Lawrence, Med.-Chirg. Trans. vol. xiv. p. 18.

which are peculiar to each extreme, and which shall always be present.[39]

[39] Since this Treatise was written, and while passing through the press, it has afforded me much gratification to find the view which I have taken of the nature of erysipelas, in most respects so completely confirmed, by so able and philosophical a writer as Dr. Alison. I beg attention to the following extract from his Essay on Inflammation: "The *erythematic* inflammation is another well-marked modification of the process which has been described as simple or healthy inflammation. The peculiarities of this form are, 1. The tendency to spread much more rapidly and extensively along the surface in which it commences; and 2. The much less tendency to effusion of coagulable lymph, and the total absence of the plastic quality, or power of becoming organised in the effusions. On the skin the matter effused is in general serum only, but in the subcutaneous cellular membrane, and in serous membranes, (which are unquestionably liable to this form of inflammation,) a fluid more or less distinctly purulent, although never bounded by deposits of concrete lymph, is often poured out in very large quantity.

"This form of inflammation often occurs in the subacute degree, attended with little fever; and the term erythema is then properly applied. But in the more violent cases there is much fever, attended with two striking peculiarities, 1. That it begins sometime before the inflammation shows itself—sometimes three days sooner: and 2. That it may be intense and dangerous when the inflammation is slight, and has very frequently more of the *typhoid* character than that which attends the healthy inflammation of the same parts, i. e. the pulse is softer, or more easily reduced in strength by evacuations, the tongue is drier, and there is more evidence of deficiency of secretions, the voluntary muscles are more enfeebled, and there is more delirium or tendency to stupor. To such cases of erythematic inflammation the term erysipelas is properly applied; and they evidently belong to the same class of diseases as the contagious exanthemata.

"In such cases the erysipelatous inflammation often tends to sloughing or gangrene, particularly in the cellular substance, where it may exist independently of any erythema on the skin, and has been described under the name of *diffuse* inflammation. This tendency of the inflammation is obviously given by the typhoid nature of the fever attending it, and which often implies great danger, altogether independent of the extent, or of any effects of the local inflammation.

"The tendency to erythematic inflammation exists in some individuals more than others; but in many cases it is obviously given, not by internal constitution, but by some hitherto imperfectly understood external cause, which is obviously of local and temporary operation; because at certain times, and in certain districts, it prevails much more extensively than at others. The disease is certainly capable of being transmitted from one person to another by inocula-

How far it may be proper to use the word erysipelas in this enlarged meaning as a generic, or even divisional term; or whether it should be restricted to one form of the disease, as for instance, as it affects the head and face, which Mr. Arnott proposed, may be doubtful. But as it has already been so generally applied, and is in such common use, I shall thus employ it, being ready at any time to adopt a better when it is proposed, and shown to be so. As I consider the changing of long used terms, even though they are employed with some latitude, is always to be avoided, unless some decided advantage is to be gained, and the new term is unobjectionable, I prefer to continue the old word, especially

tion, and is certainly propagated in many cases by contagion, which is, in fact, as to it, nearly the same thing as inoculation, because it is almost exclusively in those persons in whom there has been some wound, or irritation of the surface, that the contagious effluvia apparently arising from others affected with the disease take effect. But in this, as in other cases of disease which become epidemic, although we are sure of contagion (i. e. of intercourse with persons already affected) being one cause of the extension, we have reason to believe that it cannot be the sole cause.

"The erysipelatous inflammation and accompanying fever is certainly more apt to occur in confined and ill-aired situations than in others; and its specific cause is certainly often developed in hospitals, or attaches itself peculiarly to them.

"The same form of inflammation is often seen at the same time, and in the same persons, to affect the mucous membranes of the nose, mouth, throat, and larynx, or even to spread from the face inwards to these parts, or *vice versâ*. It not only affects, as already stated, the cellular membrane frequently and extensively, but occasionally the fibrous membranes, as the pericranium. From the frequency of inflammation of the veins in connection with diffuse inflammation of the cellular membrane, it may be presumed that their lining membrane is liable to the same form of inflammation. And there is good evidence that the peritoneum frequently, and the serous membranes of the thorax occasionally, take on inflammation presenting very nearly the same characters as erysipelas of the skin, tending to the effusion of a bloody serum, mixed with a little purulent matter, of a whitish milky fluid, or of a more perfect pus, but with little or no exhudation of plastic lymph; that such cases are occasionally epidemic; that they may be observed to be in connection with external erysipelas; that they are attended with great depression of the circulation; and are

as at present there seems to be no likelihood of any single word expressive of the nature of any disease being universally adopted.

The principal diseases which I think are thus naturally grouped together are—

I.—ERYTHEMA, with its various species according to the classifications of Willan, Bateman, and Rayer; except the erythema intertrigo, fret, or erosion of the skin, which certainly has no relation to their other species of erythema. It is purely a local affection, produced solely by local irritants, wholly unconnected with constitutional symptoms, and not

little under the power of depleting remedies; and that the danger of the disease in the worst cases of the kind, is so little dependent on the extent or intensity of the inflammation, that in the cases most rapidly fatal, the least amount of inflammatory exudation is found on dissection.

"The most remarkable case of this kind is the Puerperal fever, which is certainly often communicated by the medical attendant of lying-in-women, but a precisely similar form of peritoneal inflammation certainly exists, and even spreads epidemically in some instances independently of parturition.

"Again, the animal poison which is frequently developed in dead human bodies, before putrefaction has made any progress, excites inflammation of the same diffuse or erythematic character, and fever which is often typhoid, and so completely independent of the local inflammation as its cause, that it has been known to be fatal when no inflammation was perceptible; and is very generally most dangerous when the inflammation at the puncture, where the poison has been introduced, is slight, and when the diffuse inflammation commences at a distant point, i. e. at the axilla, in the case of a puncture of a finger.

"As to all these forms of erythematic inflammation, it is to be observed, that there is a great difference in individual cases; the inflammation is sometimes intense, the fever attending is high, the pulse firm, evacuations well borne, and the local effects of the inflammation, if not controlled by remedies, dangerous; but in other cases the inflammation is comparatively slight, its local effects inconsiderable, and the fever attending it typhoid, and evidently aggravated by much evacuation. And in this, as in other instances of epidemic febrile diseases, these differences are seen, not only in individual cases, but in the prevailing or average character of the cases occurring in different places, or at different times."—Dr. Alison on Inflammation, in the Library of Practical Medicine, vol. i. p. 85, 1840.

requiring constitutional remedies. It is also doubtful if erythema nodosum should be included: the local affection appears to be inflammation of the periosteum, the skin being only secondarily involved. How far the constitutional tendency and symptoms may approach to those attending erysipeloid affections is not quite certain.

II.—ERYSIPELAS; in the forms commonly described under the term, whether of the head and face, trunk or extremities, idiopathic or sympathetic.

III.—DIFFUSE INFLAMMATION OF THE CELLULAR MEMBRANE; as the term is used by Dr. Duncan, Jun.,[40] who first most distinctly called attention to this form of complaint.

IV.—PUERPERAL FEVER.

V.—DIFFUSE INFLAMMATION OF THE SEROUS MEMBRANES; which is perhaps more frequently seen in the peritoneum; especially after wounds of it or in its neighbourhood, as after the operation for strangulated hernia or stone.

VI.—DIFFUSE INFLAMMATION OF THE MUCOUS MEMBRANES; this form is more frequently seen about the fauces, as in some forms of angina pharyngea vel laryngea.

VII.—Very possibly some forms of ARACHNITIS belong to this class.

VIII.—DIFFUSE PHLEBITIS, and also this form of inflammation of the ABSORBENTS.

In a work like the present, professing principally to treat of erysipelas, as the term is popularly understood, it would evidently be improper, as well as unnecessary, to enter into a detail of the various symptoms of these disorders; they must be sought for in the different works devoted to them, and under the respective words in the admirable Cyclopædias and Dictionaries lately published. All that is necessary on the present occasion is to prove their identity. If it can be shown that the causes which produce them are the same; that by one

[40] Edinburgh Med.-Chirg. Trans. vol. i.

form of affection another may be induced; that two or more forms of the complaint exist together, not only as epidemics, but at the same time, or in some instances, interchangeably in the same individual; that some of them run so much one into another, that those who are most anxious to separate them are unable to do so; that the constitutional symptoms are for the most part the same; that, allowing for the variety in the organization and functions of the different textures, the local changes are the same; and that one general plan of treatment is adapted for all: it may, I think, be fairly assumed as proved, that the affections are identical in their nature; at least, according to all rules of philosophy, which forbid us to admit separations and distinctions where phenomena are the same.

ERYTHEMA.

If the term erythema were limited to designate the local change, independent of the constitutional symptoms, there could be no objection to the use of the word, since it is often useful to have words by which we briefly distinguish between local and general affections, but the application of the term erythema to a decided and distinct constitutional complaint, appears to be improper: the disorders which are so called are merely milder forms of erysipelas, differing from other cases in degree, it is true, but not in kind. A distinction has been drawn between erythema and erysipelas; in the former it is said there is very little swelling and no vesications, but surely these cannot be relied upon as sufficient to authorise a separation. The extent of swelling in erysipelas is very varying; even in its most decided forms, the extent of swelling depends much upon the texture of the skin and subcutaneous cellular membrane and the degree to which this latter is involved; in one of the worst and most dangerous varieties of erysipelas—the erratic, there is commonly but

very little tumefaction, often a mere redness or blush, and seldom vesications. Even in ordinary cases of erysipelas of the head and face, where vesications are most frequent, they do not occupy the whole surface affected; usually they are only seen in those parts where the inflammation is most intense, as in the portions earliest affected, and about the middle of the inflamed skin; as the disease spreads, towards the boundaries of the inflammation vesications are seldom induced, serum is not there effused, and the cuticle, as the disease subsides, falls off in scales as in erythema. Who has not seen, in those who are liable to repeated attacks of erysipelas, every shade of the complaint, from a mere erythematic blush about the eyes and nose, to the most severe form the disease is capable of assuming; the symptoms in the outset being alike in both cases, it depending upon the promptness in the treatment, the condition of the patient, or the immediate exciting cause, which form shall be displayed? As to difference in the exciting causes, whether they be external irritants, or improper ingesta, which has been insisted upon as distinctive of the two forms, it is of no importance, because a mild or severe attack will follow wounds, bites, or stings, of precisely the same description, in different persons, or in the same person, at different times. In many cases, when a wound begins to look irritable, no one can positively pronounce whether it will be confined to a mere blush or end in phlegmonous erysipelas; an active purgative, cleansing the sore, or a soothing application, adopted or neglected, may determine which of the two forms shall be developed. Neither can any dependence be placed upon the distinction in the two, as to the priority of local or constitutional disorder, which Cullen[41] made the basis of his distinction between erythema and erysipelas, but which later nosologists have altogether abandoned as untenable. Very often in erythema the constitutional disturbance pre-

[41] First Lines of the Practice of Physic, vol. i. p. 295.

cedes the local; this is seen so frequently that Bateman expressly says, erythema is commonly sympathetic; and who does not know, that although in the majority of cases of erysipelas the local appearances are preceded by the systematic, yet it does happen to us to see the local indications of phlegmonous erysipelas supervening upon a wound before any general change is perceptible? Indeed Mr. Travers has asserted as one of the peculiarities of erysipelas, "that the inflammation of erysipelas precedes the fever."[42] Though this is a doctrine that I can by no means subscribe to, because I believe it is contradicted by facts, yet I am ready to admit that sometimes it may occur. Within the last few months, in a case I had, the local and general affections were perceived at the same moment. The patient, a middle-aged female, who had for some time been out of health, went to bed as well as usual, after having been during the day exposed to the wet and cold; she awoke in the night, and found that the left eye was closed; and the face was hot and painful; at the time she had much head-ache; felt very sick; and was very chilly and uncomfortable. In order to prove the difference between the two complaints, there should be some decided and characteristic difference shown between them: instead of which scarcely any two authors are quite agreed as to what is erythema, and what erysipelas. take, for instance, Willan and Mason Good.

That erysipelas, in the sense the term is used by many writers, as for example Bateman and Lawrence, whether the local disease be seated upon the head and face, or the trunk and extremities, and whether it be of that more superficial kind which has been called simple[43] or superficial,[44] or of that more severe description in which the deeper parts are involved—the phlegmonoid erysipelas[45] or diffused phlegmon[46]

[42] Travers on Constitutional Irritation, vol. ii. p. 131.

[43] Lawrence. [44] James. [45] By most since the time of Galen.

[46] Dupuytren's Leçons Orales, tome ii.

are of the same nature, is commonly allowed. Nor should I now refer to it, had not Mr. Arnott attempted to limit the word erysipelas to that "febrile affection of the system accompanied with inflammation of the integuments of the face."[47] This distinction appears to be of the most artificial and arbitrary character, since erysipelas is constantly seen not to be limited to the part it first seizes upon, as this would imply. It is of very common occurrence for the inflammation to spread from the head to the trunk or upper extremities, and sometimes from the latter to the former. Besides which, it is quite impossible to point out any difference in the local affection, whether it appear on the head, trunk, or extremities: in either case it is observed to present every degree of severity, from the most superficial to the most aggravated form of the complaint; the local changes being the same, and the general symptoms identical, allowance being made for the neighbourhood of the brain, and its consequent greater liability to become involved when the scalp is affected than when a limb is concerned. The multiplication of generic or specific terms in medicine, as in every science, without there really be something distinct in the things so designated, is highly improper; and on a careful examination of Mr. Arnott's paper, I cannot think he has shown this distinction. That erysipelas of the scalp and face is more frequently an idiopathic affection than that of the extremities, may be true, but when the complaint is fully established, whether as an idiopathic or sympathetic complaint, the phenomena are precisely the same; and nothing is more common than to see erysipelas supervening upon a wound of the integuments of the face and head, which shall run its course as though the local exciting cause had not been a wound, and produce the same effects as when seated upon the limbs or trunk.

[47] London Medical and Physical Journal, March 1827, p. 210.

DIFFUSE INFLAMMATION OF THE CELLULAR MEMBRANE.

For much of what is known respecting those very serious cases of illness, to which the term "Diffuse Inflammation of the Cellular Texture" has been applied, the profession is indebted to Dr. Duncan, Jun.; not but that the phenomena of the disease were well known previous to his valuable communication in the first volume of the Edinburgh Medico-Chirurgical Transactions, as more than one writer had referred to them; the cause of the symptoms, and the condition of the facts were, however, not understood. By one the effects were considered to arise from an inflamed state of a vein, produced by some injury, or punctured by a foul lancet; by another they were attributed to a nerve having been wounded in the act of venesection; by a third to the tendon having been hurt; by a fourth to the fascia having been pricked; and by many to inflamed absorbents. To Dr. Duncan must be awarded the merit of having first given a comprehensive account of the affection, and of having detailed the pathological condition of the parts as revealed by post mortem examinations.

Although the term "diffuse inflammation of the cellular texture" has been proposed by Dr. Duncan, and is now often employed as though this formed the chief characteristic of the affection, it is quite certain that in many cases, even where the constitutional symptoms are the same, the local changes do not appear to be connected primarily with the condition of the cellular membrane: diffuse inflammation of other tissues, as the adipose, and veins or lymphatics, are attended with similar symptoms.[48] That the disease depends upon the

[48] See Dr. Craigie's most able and excellent work, Elements of the Practice of Physic, vol. ii., 1840, page 254, where he enters into a lengthened argument to show that the diseases which have been described by Dr. Duncan, as cases of diffuse cellular inflammation, and by Mr. C. Hutchinson and others, as

state of the constitution, rather than upon any unvarying specific local action or any peculiar exciting cause, (except in one instance, the bite of poisonous serpents) is evident by the fact, that in every case the topical affection is accompanied, and not unfrequently preceded, by excessive constitutional irritation, and a high degree of typhoid fever, with much prostration; while the exciting causes are exceedingly various, and often are not evident; at least, those of a local nature. They are mechanical and chemical irritants. A bruise, a sprain, and the application of adhesive plaster, trivial as they are, have often been sufficient to excite the disease in a severe form. Wounds of every degree; vegetable and animal matter; and the bites of venomous creatures, are amongst the most frequent exciting causes; but above all, there seems reason to suppose that the inoculation with morbid animal matter, is not only one of the most common and dangerous causes, but also that the matter poured out during the course of diffused inflammatory complaints, is more likely to excite this formidable complaint than any other kind of matter.

The two causes, which by far the most frequently are found to produce this form of disease, are injuries to veins, either by ligature or incision, and wounds received in the dissection of dead bodies *before* putrefaction has taken place.

of phlegmonous erysipelas, are, in reality, not so, but consist of inflammation of the adipose membrane. That this tissue may be, and undoubtedly is often, if not always, involved, and that to a considerable extent, is certainly true. I am, however, by no means disposed to think that the peculiar features of the disorder are dependent upon the organization of the adipose membrane alone. That as a tissue which possesses but a low degree of vitality, when inflamed, it is more apt to slough and be destroyed, is perfectly true; but this does not explain why the inflammation should spread so extensively; it merely shows that the spot which is inflamed is disposed to die, and not that the inflammation should necessarily be propagated far and wide, the cause of which depends, I apprehend, upon the constitutional disposition, which I have endeavoured to point out. Indeed the inflammation and consequent destruction of the adipose tissue appears much more frequently to be an effect than a cause, even of the local mischief.

From the fact of such serious consequences so much more frequently following wounds received in the examination of fresh bodies, than of those where putrefaction has already occurred, it might be supposed to depend upon some peculiar poison, generated during the course of the disease which has destroyed the person, did we not sometimes see the same effects follow clean flesh wounds, punctures, fractures, or bruises, and even occurring spontaneously.[49] While, however, this prevents us from at once adopting the idea of any such specific poison as will always induce the same disease as that by which the poison itself was originally produced, and which disease can only be so generated; there are a great number of facts to show that the serous or semi-purulent matter thrown out during erysipelatous inflammation, and especially of the peritoneum, as shown in puerperal fever, has a much greater tendency to induce diffuse cellular inflammation, than any other kind of matter. But even this will not at all times, and under all circumstances, act in this manner. Much depends upon the state of health and constitution of the person inoculated; for, beyond all doubt, scores of anatomists are wounded in precisely the same manner, under precisely analogous circumstances, so far as the dead body is concerned, and altogether escape ill effects; and the same person may escape with impunity for a long series of years, and yet ulti-

[49] The following quotation from Dr. Carswell's Article on Mortification affords a strong support to what is advanced in the text, "It is difficult to say how far wounds received in dissection, or in the inspection of dead bodies, and which are followed by diffuse erysipelatous and gangrenous inflammation, depend on the presence of a septic agent developed during the progress of disease, or after death; one thing is certain, that the frequency and severity of the disease which follows such wounds has, so far as we can perceive, no connection with the ordinary changes of the solids and fluids produced by putrefaction; for the results of our own experience are in accordance with the generally received opinion, that it most frequently occurs after wounds received in the examination of recent bodies, and also in the bodies of those who have died of inflammatory effusions into the serous cavities."—Cyclopædia of Practical Medicine, vol. iii. page 146.

mately fall a sacrifice, as the case of Mr. Dease illustrates;[50] moreover, two persons may be wounded at the same time, while examining the same body, the one shall escape altogether, or be but slightly affected, the other be destroyed. There appears to be nothing unphilosophical in the idea that various causes may be the immediate excitants of the same constitutional symptoms, provided the state of the body be favourable to the development of such symptoms; or that these causes may possess this excitant power in different degrees; and farther, that when these constitutional symptoms have been so excited, the disease so set up and the matter it generates, shall have a great tendency to produce the same train of symptoms in a second person who, perhaps, might with impunity have been exposed to the cause which induced the disease in the first person, on account of his requiring a more powerful developing cause to affect his system. Thus, of the causes which have a tendency to produce those constitutional symptoms which are indicative of diffuse cellular inflammation, we might place at one extremity of the list the bites of venomous serpents, which in all cases, and under all circumstances, and that often almost instantaneously, produce these effects; while at the other extremity would stand simple clean incised or punctured wounds, which can only induce such effects when there already exists the greatest predisposition, the slightest disturbance being sufficient to call them forth. These constitutional symptoms are so well known to every one that it may appear a work of supererogation to dwell upon such truisms; but what I wish to enforce is, that though in many cases the local affection may be immediately excited by various causes, and even be seated in different tissues, yet the constitutional symptoms being the same, the disorders ought to be considered as of one type and not as unconnected affections; a point which appears to me not to be sufficiently recognised.

[50] Dublin Hospital Reports, vol. i. p. 208.

All the general, and many of the local symptoms, of diffuse cellular inflammation, are clearly of the same kind as those presented to us in erysipelas: indeed so much so is this the case, that Mr. Earle denies that the affection which is so universally called phlegmonous erysipelas, is more or less than diffuse cellular inflammation. He says, "Under the title of diffuse cellular inflammation I wish to consider those cases which have been classed under the general names of phlegmonous and traumatic erysipelas,"[51] and he evidently considers the erysipeloid affections which sometimes follow or supervene upon fractures and ulcers of the leg, or lacerated wounds, the same as the cellular inflammation which so frequently follows venesection, and wounds received in dissection; a conclusion which I think any one who has seen much of the disease, or who has attentively examined the cases on record, will be compelled to admit. It is, however, only right to state that Mr. Earle does not view these disorders as identical with erysipelas, because he "considers erysipelas essentially as an affection of the skin, whereas the disease under consideration exerts its influence principally upon the subcutaneous tissue and fascia." Dr. Duncan would also refer to this head many cases of erysipelas phlegmonodes, and says that it is the same affection which Dr. Hutchinson treated so successfully by free incisions.[52] On the contrary, Dupuytren would refer these very cases of diffused cellular inflammation to erysipelas; for he says, that the application of a morbid poison to the skin or cellular membrance, an accident to which those who open or dissect dead bodies are especially liable, is one of the most frequent causes of phlegmonous erysipelas.[53] Dr. Watson, also, when speaking of diffuse cellular inflammation, says, "When the skin is also implicated in the inflammation,

[51] Medical and Physical Journal, Vol. lvii. p. 1. See also Cases 1 to 6, for what symptoms he regards as constituting the disease.

[52] Edinburgh Med.-Chirg. Trans., vol. i. p. 581.

[53] Leçons Orales, tome ii. p. 149.

the disease is usually called erysipelas phlegmonodes; when the skin is not involved, it is called diffuse inflammation of the cellular membrane. This diffused form of inflammation frequently follows the introduction of animal poisons into the system, and accompanies the inflammation of veins and of absorbent vessels. It is this disease which is so often fatal to members of our profession, when it results from wounds or punctures received in opening dead bodies."[54]

It would be out of place to enter upon any lengthened description of this disorder, as it would be improper to swell these pages by a transcript of second-hand cases; nor is it necessary to relate others which would only be a repetition of the same appearances which many authors have already described.[55]

The principal reasons which induce me to suppose that the affection is identical with erysipelas, may, for the sake of conciseness, be arranged under the following heads:

I. The constitutional symptoms are of the same character; the commencement of the ailment in both forms is marked by the same general disturbance. It is true that when the cellular membrane is the part affected, the general symptoms are often more severe and sudden in their appearance, particularly when resulting from a poisoned wound; when, however, the affection arises spontaneously this is not the case, and when it is so it is a difference in degree and not in kind. It is probably occasioned by the virulent power of the exciting cause, in the

[54] Dr. Watson's Lectures on the Principles and Practice of Physic, Medical Gazette, December 4th, 1840.

[55] See Duncan in Edinburgh Med.-Chirg. Trans., vol i. Colles in Dublin Hospital Reports, vols. iii. and iv. Lawrence in Med.-Chirg. Trans., vol. xiv., particularly cases 30 and 34. Travers on Constitutional Irritation, vol. i. p. 198. Earle in Medical and Physical Journal, vol. lvii. p. 1. Case of Mr. Newby, by Dr. Nelson, in same, vol. l. p. 177. Dr. Thomson, in same work, vol. liii. p. 438. Good's Study of Medicine, by Cooper, vol. ii., art. Erythema Anatomicum; Copeland's Dictionary; and the Cyclopædia of Practical Medicine.

case of a poisoned wound suddenly inducing a diseased condition in a body previously in a state of comparative health; while, when the disease arises spontaneously, there has been a more gradual progression towards the condition where the disorder is openly declared.[56]

II. The changes which are locally produced by erysipelas and diffuse cellular inflammation, are very similar to each other, allowance being made for the disorder being more superficial in the one case than in the other. Indeed so nearly alike are the effects of the disease in the part attacked, that it would, I think, be difficult to say for which form the descriptions are intended, were there not some pre-conceived notions on the subject. Thus, let us take the account given by Mr. Lawrence of the appearance of the part in phlegmonoid erysipelas, and then that given by Dr. Duncan, of what occurs in "diffuse inflammation of the cellular tissue." I prefer taking their words to giving any comparison of my own, because their accounts must be unexceptionable, even to those who consider the two complaints different: "The tumefaction is considerable, the whole depth of the adipous and cellular textures being loaded with effusion, so that an arm or leg appears of twice the natural size; the sensation of heat and pain, at first slight, is aggravated to a very severe degree, and may be accompanied with throbbing. The swollen part at first yields slightly to the pressure of the finger, but subsequently becomes tense and firm. Vesications form on the surface, often minute and miliary, with purulent contents; frequently, however, the skin does not vesicate. Suppuration and sloughing of the cellular membrane soon come on, the skin becoming livid and covered with phlyctænæ, and the febrile symptoms are aggravated. These changes are not attended with increased swelling, elevation, and pointing, as in phlegmon; on the contrary, there is rather a diminution of tension,

[56] See note 39, at page 35, for Dr. Alison's opinion of the identity of erysipelas and diffuse cellular inflammation.

a subsidence, and a feel of softness in the part. At first the cellular texture contains a whey-like or whitish serum, which I have sometimes seen in the eye-lids almost of milky whiteness. The fluid gradually becomes yellow and purulent, and we often find it presenting all the characters of good pus, and very thick. The serum is diffused through the cells at an early period, and a mixture of serum and pus often fills a considerable portion of the cellular texture without any distinct boundary. Frequently matter is deposited in small separate portions, forming a kind of little abscesses, which often run irregularly in the cellular texture. Such small collections are sometimes found where lividity or phlyctænæ have not preceded, and where no external change nor any aggravation of the other symptoms have announced suppuration. During this process of suppuration the cellular texture turns grey, yellowish, or tawny; and sometimes appears like a dirty, spongy substance, filled with turbid fluid; then losing its vitality altogether, it is converted into more or less considerable fibrous shreds, of various size and figure, which come away soaked with matter like a sponge. The integuments over a large slough of this kind, being deprived of their vascular supply, become livid, and often lose their vitality. The suppurating and sloughing processes go on to a great extent when an entire limb is affected, sometimes completely detaching the skin, and often separating it through a large space; occasionally penetrating deeper, passing between the muscles, causing inflammation of them, suppuration between them, and often sloughing of the tendons. When the substance of a limb is thus generally inflamed, the joints situated in the affected part do not escape. Inflammation of the synovial membrane, effusion of matter into the joint, and ulceration of the cartilages take place. An inflammation of such extent and violence cannot fail to excite the most serious sympathetic affections, among which may be mentioned disturbance of the nervous system, causing symptoms of a

typhoid character, inflammation of the lungs or pleura, of the intestinal mucous membrane, producing diarrhœa, or of the peritoneum, and inflammation or suppuration of other organs."[57]

Let us now turn to what Dr. Duncan says of the appearances of diffuse cellular inflammation. "As this disease is progressive, first affecting one part, and then others in succession, we find it after death existing in different parts, in all its stages. Accordingly, in the part most recently affected, which was often the space between the twelfth rib and the os ilium, we find the cellular substance merely œdematous, with increased vascularity; the serum is still fluid and limpid, or tinged with red, and readily flows from the divided tissue. In a more advanced stage the effused matter is less fluid, often higher coloured, and has not yet acquired the whiteness and opacity of purulent matter. We next find the cellular membrane gorged with a white semi-fluid matter, which does not flow from the incision, but greatly augments its thickness, and separates the particles of fat to an unusual distance from each other. In the subsequent stage it continues opaque, whitish, or reddish, or greenish, but becomes more fluid, so that now purulent matter flows from the incision. But the pus is still contained in the cells of the tissue; and it is only in the last stage of the disease, and after the tissue is entirely broken down, that we meet with collections of purulent fluid, with sloughy membrane; even then, however, the pus is not contained in a cyst or circumscribed cavity, but is gradually lost in cellular substance in the preceding stage of the change, without any line of demarcation. When fluid pus is formed, I have already spoken of it as if it were broken down cellular substance; but it is perhaps rather a secretion, which is in such abundance as to rupture the cells, and break down the cellular membrane, so that the portions thus disjointed from

[57] Lawrence on the Nature and Treatment of Erysipelas.—Med.-Chirg. Trans., vol. xiv. p. 10.

their necessary attachments become dead, or in common language sphacelous. In this way we may account for the masses, like skeins of thread, drawn out of Mr. Blyth's side; and the sloughs of cellular membrane, described by Sir E. Home as resembling wet tow, and by Mr. James as looking like large wads of wet shamoy leather. Next to the cellular tissue, the muscular substance is that which is most constantly affected, although it might be doubted whether the interfibrous cellular texture alone was diseased, or whether the true muscular fibre itself was likewise inflamed.....The *skin* is frequently severely affected but not essentially or primarily."[58] "When the inflammation, in consequence of its spreading, affects the cellular tissue, which forms the attached surface of a serous membrane, the whole serous membrane becomes affected, and then the disease sometimes spreads rapidly and independently in this membrane, producing all the common phenomena of inflammation of a serous membrane.....The transition of the disease to the mucous membrane, has not been so distinctly observed, perhaps because they are less intimately connected with that portion of the cellular substance which is the ordinary seat of the disease. Yet I may mention that during Mr. Blyth's convalescence, an aphthous inflammation of the fauces was the most distressing circumstance, and required special treatment. Even the bone does not escape the ravages of this very extensive disease."[59]

Would any one believe that these two authors were, in the foregoing passages, describing different diseases? Do not they on the contrary express the same things as nearly as can be expected, if two persons unconnected with each other were to attempt to describe the same appearances; and would not the descriptions, if transposed, be applicable? It is

[58] Cases of Diffuse Cellular Inflammation, by Dr. Duncan, in Edinburgh Med.-Chirg. Trans., vol. i. p. 609–613.

[59] P. 606.

quite evident that in both forms the principal features are caused by the disposition to spread, occasioned, or at least accompanied, by the want of the effusion of a barrier of coagulable lymph. In both forms the skin and cellular membrane are almost invariably affected together, the difference being in the extent to which each is relatively involved. In whichever tissue the disease is first developed, there is the greater tendency for it to extend along that tissue, by what Hunter called continuous sympathy, than to be propagated to the adjoining tissues by contiguous sympathy, although they never altogether escape. Thus, in almost every case of inflammation of the cellular membrane, an "erysipelatous blush" of the skin is noticed, and in erysipelas the cellular texture is attacked. We have seen that Mr. Earle considers phlegmonous erysipelas and diffuse cellular inflammation as the same thing. And Dr. Duncan himself, in speaking of one of his cases, says, "I found him in bed, with his left hand very much swollen, red, and painful, as if affected with erysipelas phlegmonodes."[60] "Nor was the affection entitled to be considered as erysipelas phlegmonodes, or inflammation of the cellular texture simply, although this was my opinion until dissection proved the contrary."[61] Also in the case of Dr. Dill, given by Lawrence, Dr. Tweedie, who attended the patient, "considered the affection to be decidedly erysipelatous."[62]

III. The results are the same, if resolution does not occur;—viz. suppuration and sloughing of the parts; and in case the patient recovers, the permanent effects of both complaints are the same: "If, however, the patient should recover after tedious suppurations and discharge of sloughs, the parts which have been inflamed, are so changed in structure, and skin, fascia, muscles, tendons, and bones are so unnaturally agglutinated and fixed, after the extensive destruction of the

[60] Edinburgh Med.-Chirg Trans., vol. i. p. 439. [61] P. 451.
[62] Med.-Chirg. Trans., vol. xiv. p. 167.

connecting cellular texture, that the motions of the part are permanently and seriously impaired."[63] So says Mr. Lawrence of erysipelas: and thus says Dr. Duncan of diffuse cellular inflammation, "In some cases, however, Nature seems to be inadequate to the reproduction, or rather the state of the neighbouring parts necessary for the reproduction has been permanently affected; and we find adhesion of the skin to the subjacent muscles, or deeper seated adhesions remaining, giving rise to permanent contraction of the limbs or rigidity of the muscles."[64]

IV. Diffuse cellular inflammation is met with in puerperal fever. "I have met with some instances of diffuse inflammation of the cellular tissue as a complication and termination of several severe or fatal states of disease in the puerperal state, both with and without affection of the skin, but only in the wards of a lying-in hospital. They have appeared in two forms; 1st. In the advanced progress of asthenic inflammation of the uterus, attended with an excoriating and fœtid discharge, which has first irritated the skin about the nates—the cellular tissue underneath becoming diffusely inflamed to a great extent and destroyed. 2nd. After cases of inflammation of uterine veins, evidently in consequence of the irritation of the circulating fluid."[65]

If the law, that no two diseases can occupy the same place at the same time be in any measure correct, and there is no reason to doubt its general applicability, it would go far towards showing the identity of these conditions; and that puerperal fever and diffuse inflammation of the veins are closely allied to erysipelas, I shall presently take occasion to show.

V. The predisposing causes are the same, and the disorders are developed in precisely the same sort of constitu-

[63] Med.-Chirg. Trans., vol. xiv. p. 13.

[64] Edinburgh Med.-Chirg. Trans., vol. i. p. 605.

[65] Copeland's Dictionary, p. 303.

tions; as in those who habitually live at the highest point of excitement, and whose chylopoietic organs are constantly bordering upon, if not actually in, a diseased condition, and in those whose constitutions are broken down or debilitated from any cause, as anxiety, either mental or bodily, close confinement, too free living, &c.

VI. The existence of diffuse inflammation of the cellular membrane and erysipelas, is favoured by the same condition of the atmosphere, and both forms of complaint prevail epidemically at the same time. Thus, at the time the cases related by Dr. Duncan occurred in Edinburgh, there was noticed a remarkable disposition to erysipelas, both in the hospital and city.[66] The cases of diffuse cellular inflammation which were so fatal at Plymouth Dock, (Irritative Fever as they are called by Dr. Butter) occurred when erysipelas was prevalent in the dock-yard, and also in the town of Devonport in 1824. Carbuncle and *pustule maligne* are often epidemic together in various parts of the continent; and puerperal fever was raging with dreadful fatality in Dublin, when Dr. Colles's cases of diffuse cellular inflammation occurred.[67]

VII. Both forms of the disease (independently of inoculation) occur principally in the same situations, and under the same circumstances, as in large towns, and in crowded, ill-ventilated, or impure hospitals,—especially lying-in hospitals.

VIII. In both forms there is the same tendency for parts at a distance from the original seat of the inflammatory action to become involved, and also to the deposition of pus in parts where no inflammatory action has been exhibited; in both, pus is found after death in situations where, during life, no symptom would have led us to suspect its presence.

IX. The treatment, both local and general, is the same.

X. One form of the disorder is exceedingly liable to pro-

[66] Edinburgh Med.-Chirg. Trans., vol. i. p. 586.

[67] Douglas in Dublin Hospital Reports, vol. iii.

duce the other in a second person. Thus, by far the most frequent exciting cause of diffuse cellular inflammation, is wounds received in the examination of those recently dead from inflammation following injuries to veins, or from erysipeloid inflammation of the mucous or serous membranes, or at least when the effused matters are characterised by an absence of adhesive lymph, and the symptoms during life have been of a typhoid or adynamic type. This fact is so remarkable, that I must beg to be allowed, as briefly as possible, to refer to some of the recorded cases. Another fact, also of great importance, is, that in several instances two or more persons have been affected in the same manner, from wounds received while examining the same body. Among the diseases which are likely to excite this scourge of anatomists, none possesses a more unfortunate pre-eminence than puerperal fever, or that diffuse inflammation which sometimes follows injuries to the peritoneum. I recollect some years since, when many persons were present at the examination of the body of a man, who had died after an operation for strangulated hernia; when the abdomen was opened, and the effused fluid seen, hearing my friend, Dr. Hodgkin, who is one of the most profound and indefatigable pathologists in England, exclaim, "Take care, gentlemen, of any wound, however slight, for I should expect it to be followed by the most serious consequences." So far as my experience goes, in no instance has much mischief resulted from a cut or prick in post mortem examinations, except the disease had exhibited evidences of the diffusive character. Mr. Shaw appears to have been similarly impressed. He says, "All who have been in the habit of attending to morbid anatomy, must admit that there is more danger from a wound received during the examination of the body of a person who has died from any form of inflammation of the peritoneum, than of any other disease. So convinced am I of this, that I have for many years

inculcated the necessity of being particularly careful when examining the body, even though it is not putrid, when death has been caused by puerperal fever, the operation for hernia, or any form of peritonitis, or I may add even of pleuritis."[68]

Of the three cases of diffuse cellular inflammation related by Dr. Colles: Mr. Hutchinson received a slight scratch of the thumb when opening the body of a man who had died of cynanche laryngea, in Dr. Stevens's Hospital. The cellular membrane on the external surface of the larynx and pharynx contained that amber-coloured fluid, resembling melted jelly, which is so often met with in such as have been carried off by this disease. The other two, Mr. Dease and Mr. Egan, had been employed in dissecting the fresh body of a female who had died of a chronic pulmonary affection, and whose pericardium contained a thick brown fluid.—*Dublin Hospital Reports, vol.* iii. *pp.* 203, 208.

Of Dr. Duncan's cases: Mr. Young and Mr. Blyth had examined the same body in December, 1821; the disease of which the woman died is not stated, but the thorax was found to be nearly filled with a serous fluid, slightly tinged with blood, and without any admixture of purulent matter. —*Edinburgh Medico-Chirurgical Transactions, vol.* i. *p.* 494.

[68] London Medical and Physical Journal, vol. lvii. p. 145. It will be noticed that the causes of death mentioned by Mr. Shaw are just those in which diffused inflammation of the peritoneum is best exhibited. With regard to the body being putrid or not, it will, I apprehend, be found that when the body is so, there is less danger to be feared from a puncture, than there is when it is fresh. At least, in by far the great majority of instances, where mischief has ensued, the body has been but recently dead. This is to be explained by the fact that if decomposition has occurred, the peculiar nature of the secretions is also lost; for these, as well as the solids, (and perhaps sooner) are decomposed, and consequently there remains only the irritation, which any putrid animal matter is capable of exciting, and not on the supposition that putrid animal tissue is in itself more harmless than fresh flesh. Indeed it cannot but be readily granted that per se putrid matter is much the more likely to cause irritation.

Mr. Whitelaw was engaged, November 10, 1821, in Mr. Lizars's room, dissecting a body which had been long kept and was very much decayed.—*Idem*, *p.* 502.

Mr. Hercy and Dr. Hennen, in August, 1821, were both punctured when examining the body of a dropsical subject, within twenty-four hours after the death of the patient.—*Idem*, *p.* 511.

Dr. Dewar slightly wounded a finger of the left hand, in February, 1823, when examining the body of an enteritic patient.—*Idem*, *p.* 515.

Mr. Cumming, in September, 1821, was present at the examination of the body of a young woman who died from puerperal fever. He took no part in the dissection, but merely introduced a fresh thread into the needle employed in sewing up the body; he was, however, unaware of having pricked himself, or of having an abrasion of the skin. In the examination a towel was used to absorb the matter, instead of a sponge, in this a pin was left; the same evening Mrs. Edie washed the towel, and scratched her finger with the pin, by which she was affected.—*Idem*, *pp.* 516, 518.

Mr. W. D. and Mr. A. B. while dissecting different bodies, in November, 1822, pricked their fingers. It is not stated of what disease the persons had died. In both gentlemen the symptoms were slight.—*Idem*, *p.* 519.

Mr. Burton, from examining the unburied body of a person who had died from aneurism, January, 1821.—*Idem*, *p.* 522.

Mr. S. pricked his finger while dissecting a puerperal case.—*Idem*, *p.* 523.

Mr. M. pricked his finger, in the Spring of 1822, when opening the head of a sheep which had been well washed.

These are all the cases related by Dr. Duncan, as occuring after wounds received in dissection. Others are mentioned as supervening upon a punctured wound from a meat hook, a bruise, a sprain, six from venesection, and several where the

external cause, if any, was not palpable. It is remarkable that they all occurred so nearly at the same time.

In the case related by Mr. Shaw, "the gentleman grazed his finger with the eye of the needle, while sewing up the body of a person who died of peritonitis."—*Medical and Physical Journal, vol.* lvii. *p.* 143.

Dr. Dill was affected after having inspected the body of a female who had died of puerperal peritonitis.—*Medico-Chirurgical Transactions, vol.* xiv. *p.* 165.

Mr. James B. after examining the body of a patient who had died of phthisis pulmonalis.—*Idem, p.* 180.

Mr. Higgenbottom punctured his finger when examining a puerperal case.—*Higgenbottom on Nitrate of Silver, p.* 82.

Dr. A. T. Thomson scratched his finger with the needle while sewing up the body of a lady who died of an illness, in the course of which she was bled; the arm had become painful, much swelled, and displayed all the symptoms of inflammation of the vein. On opening the chest, its left cavity was found to contain about a quart of bloody serum, both the pleuræ pulmonalis and costalis "were covered with a reticulated veil of coagulable lymph, *but in no place did they adhere.—Medical and Physical Journal, vol.* liii. *p.* 438, *and also Medical Repository, vol.* xxiii. *p.* 280.

"On May 18th, 1824, Mr. Shekelton was engaged in examining the body of a man who had died of peritoneal inflammation consequent upon the operation for lithotomy. The examination took place in a very few hours after death, the body still retaining its heat. It was observed that, soon after the abdomen was opened, Mr. Shekelton pricked himself with the point of the knife.—*Dr. Colles in Dublin Hospital Reports, vol.* iv. *p.* 240.

Dr. Petts's death occurred after he had examined the body of a lady who had died of puerperal inflammation, after her confinement.—*Travers on Constitutional Irritation, vol.* i. *p.* 223.

A man named Heginbottam, who had a recent scratch upon the left thumb, while moving the corpse of a woman who had died of typhus fever, observed that his left hand was besmeared with a moisture, which had oozed from the shell as he was placing it in the coffin. He died on the tenth day from the inoculation.—*Idem*, *p.* 247.

Mr. C. pricked his finger, and received from a fellow student a caution: about a week afterwards he disordered his stomach from some intemperance in diet at a dinner party, two days before which he had been dissecting ligaments. What he was dissecting at the time of pricking his finger is not stated.—*Idem*, *p.* 250.

Mr. Greaves, a native of Barbadoes, slightly punctured his finger in examining the body of a man who had died from fracture of the skull.—*Idem*, *p.* 253.

Mr. Archer punctured the finger with the needle, while examining the body of a man who had died the preceding day of an inflamed vein after bloodletting.—*Idem*, *p.* 259.

While engaged in examining the chest and abdomen of a woman, who had died the same morning of very extensive visceral inflammation of a diffused character, the body being yet warm, Mr. Delph pricked or scratched his left hand several times, and Mr. Smartt wounded his right hand with the needle. Both gentlemen were very seriously ill, and only recovered after some months. "The woman who nursed the person from whom the poison was received, and who also washed her linen, was seized with fever and considered in great danger."—*Idem*, *p.* 263.

Mr. Elcock slightly punctured his finger in opening the body of an hospital patient recently dead.—*Idem*, *p.* 203.

Mr. Clifton scratched his thumb with a needle whilst examining the body of a female who had died of peritoneal disease.—*Idem*, *p.* 294.

Mr. N. R. Brayne, when in an impaired state of health and spending most of his time in the dissecting room, pricked

his finger with a common pair of forceps, whilst examining the body of a man who had died the day before from extensive psoas abscess and diseased dorsal vertebræ, which succeeded an accident.—*Idem*, *p.* 303.

Mr. Slight, while dissecting the body of a negro, wounded the finger with the point of the knife. Nitric acid was applied to the wound, and he continued the dissection. Symptoms set in on the fifth day.—*Idem*, *p.* 310.

Mr. Persivall, in January, 1820, pricked both hands in sewing up the body of a woman who had died of peritonitis. —*Travers*, *p.* 318.

Mr. Wansbrough, on June 22, 1822, examined the body of a female who had died from diseased ovaria. Putrefaction had commenced. He had the same evening pricked his finger with a rose thorn.—*Medical Repository*, *for May*, 1823.

Mr. Newby died after having opened the body of a child who died of enteritis, with erysipelas of the abdomen.—*Medical and Physical Journal*, *vol.* l. *p.* 177.

Dr. James Bell, Æt. 58, scratched the right fore-finger on September 19, 1824, when sewing up the body of Gregory Nichols, who had died eight hours before of the erysipeloid fever then raging in the dock-yard at Devonport. In the body there was evident marks of diffused peritonitis; "the mesentery and meso-colon were vascular, with red patches, the whole being amassed in sero-purulent fluid." The symptoms showed themselves in Dr. Bell the following morning, and he died on the 24th.—*Remarks on Irritative Fever*, *by Dr. Butter*, *p.* 60.

Mr. C. E. B. Æt. 22, of a sanguine temperament, and a free liver, pricked the middle finger of his right hand with a small spicula of bone, whilst opening the cranium of a man who died of gangrenous erysipelas, after injury to the head.—*Earle in Medical and Physical Journal*, *vol.* lvii. *p.* 8.

In the year 1821, Mr. James was engaged in the examination of the body of a diabetic patient, who after being bled

had erysipelatous inflammation of the arm. He removed a portion of the vein, and laid it across the fingers of the left hand, in order to examine it more closely; on the middle finger of that hand there happened to be a nail spring. Symptoms began on the following evening.—*James on Inflammation, p.* 427.

In November, 1840, I was requested to visit a respectable medical man, who resides about seven miles from Leeds. I found him suffering from diffuse inflammation of the whole right upper extremity, extending over the pectoral muscle and whole side. There was matter both in the subcutaneous cellular membrane, and also under the fascia of the upper arm. This extensive mischief resulted from a prick which he received in the second finger, while sewing up, with a common lady's needle, the body of a young lady who had died from softening, and consequent sudden rupture of the stomach. There was sero-purulent effusion into the peritoneal cavity. At the time of receiving the puncture this gentleman was much harassed and overworked, and attending several cases of typhus fever.

Other cases might doubtless be found, but these I apprehend will be thought sufficient. They are not selected in order to support the particular opinions now advanced, but are fairly taken, and therefore may be considered as truly showing the kind of bodies, in the dissection of which a puncture is most likely to induce this diffuse inflammation. It will be remarked, 1st. that Dr. Duncan's cases occurred within two or three years, during which erysipelas in its various forms was remarkably prevalent in the neighbourhood. Those of Dr. Colles nearly at the same time, when puerperal fever was exceedingly fatal in Dublin. That of Dr. Bell, when erysipelas was epidemic in the dock-yard and town of Devonport. And in the cases related by Mr. Travers, and others in London, where the dates are mentioned, they are very near together; and where not given, from the context there is every

reason to infer it was about the same time. Since this period, the complaint has been comparatively rare, as have the congenerous disorders in the same situations. 2ndly. In nearly every case where the cause of death in the body examined is stated, we find evidence of the existence of diffuse inflammation of the membranes, skin, veins, or cellular tissue; and this occurs so frequently, that it must, I think, be admitted, to say the least, there is a much greater tendency in matter effused under this action, to induce a corresponding form of disease, than there is in matter formed under a more phlegmonous action. 3rdly. The fact of two or more persons being so often inoculated by the same matter, is also of importance, taken in connection with the extent to which they each were affected. It is to be observed that in many of these cases one died, and the other after more or less mischief recovered; in the latter the disease was more limited, attended with a more circumscribed action, and altogether more like phlegmon; on the contrary, in the fatal cases, the disease sometimes affected almost half the body,—a proof, were all others wanting, that the severity of the disease very much depends upon the state of the system, and the diathesis of the person receiving the virus; since in these cases, the exciting cause must, of course, have been the same, and yet the effects varied from a thecal abscess (as in Mrs. Edie) to the most extensive destruction of the muscles, cellular membrane, and skin.

How far the disease, in all these cases, originated in inoculation, it would, perhaps, be difficult to say; that it did so in many there can be no reasonable doubt, but it appears probable, that in some there was no actual absorbtion of any virus, and that the mischief was rather the result of the accidental irritation acting upon a system already disordered, and, so to speak, ready to take in this excessive irritative action.

XI. The two forms of disease are reciprocally capable

of exciting each other. Thus, diffuse cellular inflammation, excited in the first instance by inoculation with erysipeloid matter, has the power of exciting true phlegmonous erysipelas in another person; and, on the other hand, erysipelas has the power of exciting diffuse cellular inflammation. In proof of the first, we have the interesting case of Mr. Newby as related by Dr. Nelson; and of the second, the cases related by Mr. Gibson in his account of epidemic erysipelas, which prevailed at Montrose in 1822, (the same time, be it observed, that Dr. Duncan's cases of "Diffused Inflammation of the Cellular Membrane" occurred in Edinburgh.) To these I request the attention of the reader.

"On Saturday, the 31st of May, Mr. Newby was exposed to a heavy rain: on the following day he opened the body of a child which died of enteritis, having also, as I was informed, erysipelas of the abdomen. On Monday and Tuesday, he was as usual occupied with his profession, but complained of great languor and depression. On Wednesday evening I was requested to see him. At that time he complained of head-ache, general pains of his limbs, heat, nausea, and constipated bowels. His pulse was frequent, but neither hard nor full: the tongue was white. He showed me a pustule on the back of the left thumb, exactly resembling the small pox, but did not in any way account for its appearance, nor even mention the circumstance of having opened the body of the child on the preceding Sunday. He had slight pain in the axilla, without tumour, or any appearance of inflamed lymphatics on the arm. He had taken a purgative and diaphoretics, by the advice of his friend Mr. Barry, which we directed to be continued. The evacuations from the bowels were very offensive. On Thursday he seemed somewhat better, and continued so until the evening of Friday. The thumb gave very little uneasiness, and the pain in the axilla was diminished. During the day he took more nourishment, and a little wine and water.

"Saturday. He had passed a restless night, and complained of a deep-seated pain in the left breast, which assumed a light pink tinge, and the axilla and arm became more uneasy; the thumb being nearly well. I requested that Mr. Copeland might be sent for, to give us his advice and assistance in the management of the diseased part. The pulse increased in frequency. He took very little nourishment or medicine during the day, but had an opiate at bedtime.

"Sunday. He had some sleep in the early part of the night, but afterwards excessive irritability, with slight delirium. The inflammation of the breast had extended, and was surrounded with a deeper red margin of about one eighth of an inch in breadth; the pulse was about 108, more feeble: the tongue had become dry and brown. He had during this day Infus. Cuspariæ, c. Acid. Muriat. et Opium, given in considerable doses every four hours, wine, &c. In the evening he was visited by Dr. Hooper.

"Monday. He passed a very restless night, though the opium had considerably lessened the irritability. The pain in the head was greater, and that of the left breast much increased; the tumor had extended from the sternum to the scapula, and from the clavicle to the left hypochondrium; the heat of the skin was much greater; the tongue was dry and brown; pulse 110. He had two fœtid stools. The medicines were continued. He was very restless during the day.

"Tuesday. The arm had swelled during the night, and the tumor of the breast appeared to contain a considerable quantity of effused serum, and was of a brownish yellow colour; the symptoms nearly as on Monday. Decoct. Cinchon. c. Acid. Sulph. Dil. Opium, and wine were directed to be given.

"Wednesday. Had passed a restless night; all the symptoms were aggravated; and he died about twelve.

"It is worthy of remark that, during Mr. Newby's illness, Mr. Jackson, his assistant, had an inflammation of the fauces, of an erysipelatous appearance, which terminated in suppuration of the tonsil. His pupil had an attack of low fever, which continued about a week. The housemaid was severely affected with cynanche tonsillaris, which terminated by resolution. The nurse had a slight attack of pyrexia, with pain and stiffness of the back of the neck; on account of which she went home for a day or two: but returning to the house, she was attacked with erysipelas phlegmonodes, which proved fatal. Another woman, who assisted in the room after Mr. Newby's death, had also erysipelas phlegmonodes, but recovered.

"Was the disease which destroyed Mr. N. erysipelas produced by inoculation, affecting the cellular substance of the breast, and parts adjoining? Did the five cases which occurred during his disease and after his death, arise from erysipelatous contagion?"[69]

"It, (i. e. erysipelas,) was followed in almost every case by extensive diffuse suppurations in the cellular substance, particularly when other parts than the head were attacked, and sometimes by sloughing of the parts affected. It frequently supervened on wounds, particularly if they were situated upon the head or face, sometimes on ulcers, occasionally the disease seemed to be confined to the cellular membrane, as extensive suppurations would occur with little or no apparent disease of the skin, or even without any redness.

"On the 6th current James Craig, a healthy young peasant, was brought to his father's house in the village of St. Cyrus, from his former residence at a distance of some miles, affected with erysipelas of the face. It was reported that his master had died a few days before of a febrile disease. In Craig the disease became very severe, spread to

[69] London Medical and Physical Journal, vol. l., p. 177.

the chest and abdomen, and was attended by violent fever and delirium. These symptoms were succeeded by very extensive suppuration, extending from the neck to the lower part of the abdomen. At both these points vent was given to the purulent matter, and he subsequently recovered. His father was now attacked in both hands and arms. The disease spread to the neck and face, and he died in a few days. It was only after death that it was discovered that the most extensive suppurations had taken place along the back and loins, from the neck to the sacrum."[70]

I may be told that, although the foregoing facts and arguments are strong, they do not amount to demonstrative proof; true, they may not do so, but in how many cases do we obtain this proof in medical enquiries, or in most affairs of life, upon which we nevertheless build with security, and the inferences drawn are unquestioned? In few questions do we obtain such convincing presumptive proofs. If it be said they are not sufficient to establish the identity of erysipelas and diffuse cellular inflammation, and that the existence of the two forms coëtaneously, or immediately after each other, was a mere accidental coincidence, I should ask for the proofs of this assertion; because, with such strong evidence in favour of the affirmative, it requires something in the shape of demonstrative proof to contradict it. The cases of Mr. Newby and Craig appear to me to complete the chain of evidence, in showing that the two forms will mutually excite each other; and, in fact, that they are but one disease; the local action of the one, being, from accidental causes, which I shall afterwards point out, principally developed in the subcutaneous cellular membrane, and in the other in the skin.

[70] Gibson in Edinburgh Med.-Chirg. Trans., vol. iii. p. 96.

PUERPERAL FEVER.

The accounts given of the nature and treatment of puerperal fever are of the most contradictory kind. While one observer has maintained that it is strictly an inflammatory complaint, another has denied this in toto; one declares that the accompanying fever is of a synochial type, another asserts that it is decidedly typhoid; while one tells us that the safety of the patient depends upon energetic blood-letting, another says bleed and you destroy the woman; one maintains that the disease is at all times, and under all circumstances, contagious, another informs us that it is never in the least so. These discrepancies can only have arisen from the opinion that there is something specific in the disease, and, consequently, that it must in all cases be of precisely the same character and require the same treatment. But whoever will examine the many accounts which have been published of this complaint must, I think, arrive at the conviction, that those who have adopted any one of these exclusive views, have done so on very limited evidence, and have overlooked many circumstances which ought to be taken into the account.

For the history of puerperal fever, I must refer to works on Midwifery, and to the separate treatises or essays which have been published upon the subject by Kirkland, White, Hulme, Leak, Gordon, Clarke, Mackintosh, Campbell, Hey, Lee, Moore, Baudelocque, Dance, Tonellè, and others. All that is necessary at present is, to state so much of its nature as will make intelligible the argument as to its identity in nature with external erysipelas. The facts upon which this is founded are so strong, that I cannot conceive of their not being admitted, except by those who, rejecting every other consideration, maintain the distinctness of every disease where the tissues locally affected are different. The

idea of the sameness of puerperal fever and erysipelas is by no means new, though it is not generally adopted. Pouteau many years since maintained, that the inflammation of the uterus is of an erysipelatous nature; an opinion which Drs. Young, Home, and Lowder have supported, and which is decidedly entertained by Dr. Whiting of London, who, in his Lectures, and also at the Medical Society, has declared his belief of the erysipeloid character of puerperal fever.

However authors may have differed upon every other question connected with this disease, they seem almost unanimous in declaring that the symptoms during life, and the appearances after death, clearly point out inflammatory action; and although all are not agreed as to its precise nature or situation, so frequently is the peritoneum seen to be affected, that many regard it as the true seat of the complaint, and Dr. Gooch has proposed to substitute the term peritoneal fever, even though he does not admit that the affection of the peritoneum is always of an inflammatory kind; but the description which he himself has given goes strongly to corroborate the opinion of nearly all other observers on this point.[71]

In relating the appearances found on examining the bodies of the women who were destroyed by the epidemic which raged in the Hôtel Dieu at Paris in 1746, M. Malouin says, "On opening the bodies curdled milk was found upon the surface of the intestines, a milky serous fluid in the hypogastrium, a similar fluid was found in the thorax of certain women, and when the lungs were divided, they discharged a milky or putrid lymph. The stomach, the intestines, and the uterus, when carefully examined, appear to to have been inflamed."[72] Van Swieten speaks of similar appearances, and supposes the fluid actually to have been

[71] An Account of some of the most Important Diseases peculiar to Women.

[72] Memoires de l' Acadamie des Sciences, 1740.

milk by a morbid action thus diverted from the breasts.[73] M. Tenon describes the post mortem appearances of those who died in the epidemic of 1774-5. "On opening the abdomen," he says, "the stomach, the intestines, particularly the small intestines, were inflamed, adhering to each other, distended, filled with air, and a yellow fluid matter. The uterus was contracted to its ordinary dimensions, and was seldom found inflamed. An infiltration of a milky fluid or whey-like fluid existed in certain women in the cellular membrane which surrounds the kidney. Sometimes also a thick white cheesy matter was met with. When the lungs were gorged with blood, or inflamed, or emphysematous, an effusion of serum was also found on each side of the chest."[74] Pinel, Bichat, Andral, and many other French pathologists, have considered puerperal fever essentially to depend upon inflammation of the peritoneum. In the account of the malignant puerperal fever in Vienna, 1819, it is stated that "in the cavity of the thorax and pericardium there was invariably more than the usual quantity of bloody serum..... In the abdomen there were only two cases in which there was no unnatural fluid, i. e. in those cases which had been delivered a considerable time before death. In all the rest there was found from one to two quarts of turbid very fœtid fluid, mixed with portions of coagulated lymph and sometimes purulent matter. The latter appearance was observed in those cases where powerful anti-phlogistic means had been employed, and which had survived longer after delivery."[75]

Dr. Kirkland says, "I believe it is a certain fact, whatever be the cause of puerperal fever, that within a limited time the whole abdomen is more or less inflamed."[76] Such is also the evidence of nearly every British writer. By all there

[73] Comment., vol. iv., par. 1329.

[74] Memoires sur les Hôpiteax de Paris.

[75] Edinburgh Medical and Surgical Journal, vol. xxii. p. 83.

[76] Kirkland on Child-bed Fever, p. 55.

are described marks of an inflamed peritoneum, with more or less, often very considerable, effusion of sero-purulent fluid into the peritoneal sac.

Dr. Clarke says, "In all our dissections the peritoneum appeared every where unusually vascular and inflamed; next to the omentum, the broad ligament of the uterus, the cæcum and the sigmoid flexure of the colon seemed to suffer most by inflammation. We always met with more or less of a turbid yellow, and sometimes fœtid fluid, floating among the intestines, coagulated purulent-like masses, adhesive inflammation, gluing the intestines to each other, &c. In no instance did the appearance of inflammation seem to penetrate deeper than the peritoneal coat, or any of the viscera of the abdomen or pelvis."[77] Not only is there effusion into the peritoneal cavity, but frequently there is also into the pleuræ; indeed, in some well-marked cases of puerperal fever the effusion has been principally found in the pleuræ.[78] Even Dr. R. Lee, who has pointed out the frequency of phlebitis in puerperal fever, is obliged to confess, that in almost every instance the peritoneum is inflamed; even when there exists no evidence of the veins being so affected. The last named gentleman has proposed to banish altogether the term puerperal fever; he says, "as the constitutional symptoms appear invariably to derive their origin from a local cause, it would be more philosophical and more consistent with correct principles of nosological arrangements, to banish entirely from medical nomenclature the terms puerperal and child-bed fever, and to substitute in their place that of uterine inflammation, or inflammation of the uterus and its appendages in puerperal women."[79]

[77] Dr. Clarke on Puerperal Fever, &c. as observed in the Dublin Lying-in Hospital; Medical Commentaries of Edinburgh, vol. v. p. 310. See also a similar account in Denman's Midwifery, 7th edition, p. 488.

[78] Dr. Walker, in Lancet, Oct. 5th, 1833.

[79] Cyclopædia of Practical Medicine; art. Puerperal Fever.

This, however, would, I conceive, be falling into a very serious error; most assuredly inflammation exists, but we must rather attribute the kind and degree of inflammation to the constitutional state than this to the local action, since observation teaches us that we have the same constitutional symptoms present when different tissues are inflamed, or even where no uterus exists, as in the male. Indeed, Dr. Lee himself has proposed to distinguish four principal varieties of puerperal fever, according to the tissue most affected; and, at the same time tells us, there is no difference in their nature, because the one variety will excite a second variety in another person. That the tissues locally involved do produce some secondary effect upon the character of the disease is doubtless true, as in a previous page I have stated, but that they play the important part of altogether altering the nature of a disease, which some, since Carmichael's Smyth's Essay[80] have been inclined to attribute to them, I do not believe or admit. It is highly probable, if not certain, that there is some change produced in the state of the blood, which change may depend upon alterations we are unable at present to appreciate, but which it is likely occur in many tissues, and may thus affect the mass of blood more or less quickly, and to a greater or less extent, according to the influence they have upon, and the connection they have with, the blood in a state of health. Thus it is, I imagine, that diffuse inflammation of the veins produces so rapidly such alarming symptoms, because no change can take place in these vessels, without the blood being immediately influenced by it. This much however is certain, that puerperal fever is not specifically distinguished by, nor solely dependent upon, an inflamed condition of the uterine veins. That diffuse inflammation of the peritoneum is more generally present than any other particular symptom is quite clear; and that the veins are often found inflamed and containing purulent matter, is also evident, and forms one of the

[80] Medical Communications, vol. ii., London, 1790.

connecting links in showing the resemblance between puerperal fever and erysipelas; because it is well known that so frequently is pus found in the veins of an erysipelatous part, that Ribes and others have supposed the disease to depend upon an inflamed condition of the cutaneous veins. Into the truth of this opinion, and whether the pus be formed in the veins, or be conveyed into them by absorption, we shall not just now enter, as it will come under consideration hereafter.

When we consider the altered and weakened condition of a woman just delivered, and what a great change has taken place in the peritoneum, we might, à priori, suppose, that were inflammation, from any cause, to become developed, the organs, which are already in an unusual and irritable state, would be most prone to the attack. The uterus and other organs of generation are often involved, but it is upon the peritoneum that the disease is principally shown; probably on account of the greater tendency that serous membranes at all times have to inflammatory attacks. That the local action should be of the diffused kind, and the constitutional symptoms of the typhoid type, is manifestly more probable than the contrary condition.

I shall, as before, arrange under distinct heads, the principal facts and arguments which may be advanced to prove the identity of puerperal fever and erysipelas.

I. Puerperal fever resembles erysipelas in the nature of the constitutional symptoms shown throughout the course of the disorder, and also generally in the mode of its onset, as by rigor, sickness, &c. The indications are those of irritation without corresponding power, the pulse is characterised rather by excessive frequency, than by either fulness or hardness. The statement of Dr. Lee, that puerperal fever cannot resemble erysipelas, because it may be cut short, while erysipelas cannot be, is of no value;[81] since few, I presume, will be disposed to deny that, if seen early, attacks which, from

[81] Cyclopædia of Practical Medicine; art. Puerperal Fever.

the symptoms we have every reason to suppose are erysipelas, may often by prompt treatment be cut short.

II. The local symptoms during life and the appearances after death are, allowance being made for the different situation and textures of the parts attacked, identical, as a comparison of the post mortem appearances in puerperal fever and erysipelas will prove. Dr. Douglas distinctly states this, and he is certainly an authority on any subject connected with puerperal fever. "Now there appears," he says, "to be a striking analogy between the present malignant fever in Philadelphia, and the puerperal epidemic fevers of the Dublin Lying-in Hospital. 'These physicians (Drs. Hewson and Chapman) state that the character of the fever was of typhoid malignity, and that the stomach by examinations, post mortem, was found almost exclusively affected with a species of erysipelatous inflammation in various gradations of violence.' The contagious puerperal fever of Dublin is, I venture to pronounce, neither more nor less than a malignant fever of a typhoid character, accompanied with an erysipelatous inflammation of the peritoneal coverings of the stomach, intestines, and other abdominal viscera."[82]

III. The treatment in both forms of disease must be guided by the same indications; *as a rule*, in the most decided cases, in neither is it proper to employ active blood-letting: our measures must vary in their activity according as the disorders prevail sporadically or epidemically; whether they approach the form of circumscribed phlegmon with synochial fever, or diffuse inflammation with typhus.

IV. Both forms of complaint prevail at the same time epidemically. Of this we have the most abundant evidence. Thus, Dr. Gordon, in his account of the epidemic puerperal fever which occurred in Aberdeen, says, "These two epidemics" (erysipelas and puerperal fever) "began in Aberdeen at the same time and afterwards kept pace together; they

[82] Dublin Hospital Reports, vol. iii. p. 159.

both arrived at their acmé together and they both ceased at the same time."[83] Clarke tells us, "that if inflammatory fevers prevailed at all with the low fever of child-bed, they were principally of the erysipelatous kind."[84] Mr. Hey says, "in towns so large as Leeds there are never wanting cases of infectious fevers; but at the time alluded to no disease was so prevalent as to deserve the name of an epidemic, except erysipelatous inflammation, which prevailed during the whole period of the puerperal fever, insomuch that I do not recollect ever to have seen worse cases of erysipelas than at that time."[85] Ossander states, that infantile erysipelas is more prevalent when puerperal fevers are common.[86] Mr. West, in an account of puerperal fever which prevailed in the neighbourhood of Abingdon, says, that in no instance did puerperal fever occur in any village where there were not cases of erysipelas.[87] Mr. Ingleby informs us, that in the year 1833 puerperal fever re-appeared at Birmingham, at which time erysipelas prevailed generally, both in the town and its general hospital; and that he is fully authorised in saying almost every wound under treatment in the Institution assumed an erysipelatous character, and several of the cases proved fatal.[88] Dr. Ferguson declares that erysipelas and puerperal fever are generally co-existent in the General Lying-in Hospital.[89] Dr. Hutchinson declares that, in a recent epidemic at Nottingham, the co-incident prevalence of erysipelas and puerperal fever was most marked.[90] Dr. Lee states, "In the autumn of 1829, a short time before the

[83] Gordon on Puerperal Fever, p. 56.

[84] Clarke's Practical Essays in Midwifery.

[85] Hey on Puerperal Fever, p. 19.

[86] Parr's Medical Dictionary; art. Erysipelas.

[87] Medical Repository, vol. iii. p. 105.

[88] Edinburgh Medical and Surgical Journal, vol. xlix. p. 416.

[89] Essays on the most Important Diseases of Women, by Dr. Ferguson, part i. chap. 1.—Puerperal Fever, 1839.

[90] Medical Gazette for April 17th, 1840.

epidemic (puerperal fever) broke out in the British Lying-in Hospital, which led to its being closed for several months, two children died of erysipelas. A few days before the re-appearance of the disease in the Hospital in December, 1830, an infant died of erysipelas of the internal organs of generation and abdomen, and the same diseased state of the abdomen was observed. Another infant was attacked with gangrenous erysipelas of the right fore-finger on the 28th of December, whose mother had been cut off on the 24th by uterine phlebitis."[91] During the prevalence of puerperal fever, in the winter of 1831-32, two children died from inflammation and suppuration of the umbilical vein, and in both there were patches of erysipelatous inflammation in different parts of the body. Dr. Locock's evidence is to the same effect. He says, "The existence of *erysipelas* in hospitals, or among the infants where the mothers have puerperal fever, has long been noticed. Many such coincidences have happened in the General Lying-in Hospital, and servants and nurses even have often been attacked. This has led some to consider the inflammation which occurs in puerperal peritonitis, &c. to be of an erysipelatous character. In those instances in which the morbid appearances consist chiefly of a copious serous effusion, this may perhaps be the case; but we can hardly assent to this doctrine where firm lymph is deposited. The great resemblance between the effects of parturition on the cavity of the uterus, and what takes place after some important surgical operations, amputation for instance, as pointed out by Cruveilhier, would lead one to expect that erysipelas, so common in latter instances, would not be rare in the former."[92]

V. Both forms of disease arise under the same circumstances, and prevail most at the same seasons of the year,

[91] Cyclopædia of Practical Medicine; art. Puerperal Fever.

[92] Library of Practical Medicine, vol. i. p. 366.; art. Puerperal Fevers, by Dr. Locock, 1840.

and during the same kind of weather. It is well known that erysipelas prevails most in close humid weather, particularly if the temperature be changeable, such as is usual in this country in spring and autumn, but more especially the former. And also, it is well established, that a crowded ill-ventilated Hospital at these periods of the year is seldom without cases, more especially in the wards where many wounded are collected together; under such circumstances it is, without the greatest caution, almost impossible to prevent its appearance. So it is with puerperal fever. Dr. Douglas, after stating that puerperal fever prevails more at some seasons than at others, and giving some statistical details, which prove that puerperal fever has prevailed in the Dublin Lying-in Hospital in nearly exact proportion to its crowded state, adds, "from the foregoing and other statements I do firmly believe a crowded state of a Lying-in Hospital and a hurried succession of patients, highly conducive to puerperal fever."[93] The fact of so greatly increased a ratio of mortality from this cause in lying-in hospitals, as is shown by the returns from those of London, Paris, and Dublin, than occurs among women who are delivered at their own homes, is so important, that Dr. Lee thinks the loss of human life is at times so great as completely to defeat the objects of the charities. The physician at the Hôtel Dieu, M. Vesou, attributed the dreadful epidemic which occurred there among puerperal women in 1664, entirely to the fact of the lying-in wards being situated immediately over those where many wounded persons were collected together.

VI. Both complaints are characterised by the great disposition there is to the deposition of pus in various parts of the body: it has already been stated that deposits are found in the abdomen, pericardium, and pleuræ after puerperal fever. Dr. Lee tells us (evidence which is amply confirmed by the testimony of the best obstetric practitioners, as Dr. Ferguson

[93] Dublin Hospital Reports, vol. iii. p. 149.

and others,) that the presence of abscesses in any part of the body of a woman who has recently been delivered, is one of the strongest proofs which can be obtained of the previous existence of inflammation of the deeper seated textures of the uterine organs; and, "that deposits or infiltrations of pus, of enormous extent, also take place into the cellular membrane, between the muscles of the extremities and often in the neighbourhood of the joints; the cartilages of the joints themselves become ulcerated, and pus is formed within the capsular ligaments."[94] Now compare this with the appearances after erysipelas as related in other places in this essay, and also with the following passage from Dupuytren's Leçons Orales. "More than one half of those who die from phlegmonous erysipelas fall victims to affections of the pleura, liver, or other internal inflammations; so great is the disposition to the formation of pus that there exists among these patients 'une veritable puogénié.'"[95] That these purulent depositions depend upon a common cause in both affections, cannot, I think, be doubted, nor does it alter the relation between them, if we suppose it to arise from a true inflammation of the veins themselves, as Dr. Lee and M. Ribes would assert; if with M. Andral we imagine that the veins in passing through a depôt of pus absorb some of it, and subsequently this same pus is again separated from the mass of blood into the places where it is found lodged;[96] or if we with Mr. Arnott believe that, although these collections of pus are caused by purulent matter being introduced into the venous circulation, yet that the matter deposited is not that which has originally been introduced into the blood.[97] Which of these opinions may be preferred, will in no measure alter the case; the facts remain equally connected and applicable to

[94] Puerperal Fever in Cyclopædia of Practical Medicine, and Medico-Chirurgical Transactions, vol. xvi. p. 377.

[95] Leçons Orales, vol. ii.—Phlegmon Diffus.

[96] Préces d' Anatomie Pathologique, tome i. p. 405.—Paris, 1829.

[97] Med.-Chirg. Trans., vol. xv. p. 122.

the two forms of disease, whether we infer that the disease essentially depends upon the venous inflammation or not. To me, however, it appears highly probable that the two forms both depend upon some less palpable cause, which in each is the same, and which has hitherto, in the hunt after change in the solid textures, been forgotten or overlooked, viz. change in the circulating fluids, whose vitality is impaired. It is also remarkable that the blood, both in erysipelas and puerperal fever, is found to be similarly changed as though mixed with some foreign matter, and decomposition in both cases takes place earlier than usual.[98]

VII. The great danger attending inoculation with the effused fluids, in the examination of the bodies of those who have recently died of puerperal fever, with the almost immediate development of erysipelas in the member inoculated, has already been somewhat at length stated. Now, although from the fact of similar results succeeding other causes, as well as arising idiopathically, we are not justified in assuming this as a positive proof of identity in the two forms; it is not without its weight when taken in connection with other facts.

VIII. The two forms of the disease may exist at the same time in the same patient. I might here refer to the erythematic patches which so often accompany complaints of an adynamic type, as well as to the forms of erratic erysipelas, (which all admit to be genuine) in which, in many cases, the external affections constitute but a very unimportant part

[98] No one has more decidedly expressed the opinion that puerperal fever depends upon vitiation of the fluids, as expressed in the text, than Dr. Ferguson in his valuable work on Puerperal Fever, where he says, "the three following propositions embody my views of the source and nature of puerperal fever. 1st. The phenomena of puerperal fever originate in a vitiation of the fluids. 2nd, The causes which are capable of vitiating the fluids are particularly rife after child-birth. 3rd, The various forms of puerperal fever depend upon this one cause, and may readily be deduced from it."—Essays on the most Important Diseases of Women, by R. Ferguson, M.D., part i., Puerperal Fever, p. 53, 1839.

of the disease, did we not possess evidence of the most positive character, as to the coëtaneous existence of external erysipelas and puerperal fever. Thus, we are told of the sufferers in the puerperal epidemic at Vienna,[99] "That the greater number brought with them into the hospital erythematic spots in the hands and feet, chiefly upon the joints." Dr. Johnstone (of Birmingham) has not only adverted to the connection between erysipelas and puerperal fever, but has also related a case in which erysipelas appeared on the arms of a patient affected with this fever the day preceding her death.[100] So also Dr. Hutchinson, of Nottingham, has recently mentioned two cases. In one instance of puerperal peritonitis, erysipelas began in the left labium pudendi and extended over large surfaces of the body, accompanied with *vesications* and sloughing of the cellular membrane; in the second case there were *repeated* alternations of puerperal peritonitis, and erysipelas on the surface.[101] Dr. Copeland's evidence of the occurrence of puerperal fever and diffuse cellular inflammation, in lying-in hospitals, has already been referred to, and even though it should not be admitted, as proof of erysipelas and puerperal peritonitis, the instance of Dr. Hutchinson cannot be objected to, for there erysipelas appeared in its most orthodox form with vesications.[102]

[99] Documents relating to the Epidemic at Vienna, in 1819, in Edinburgh Medical and Surgical Journal, vol. xxii. p. 88.

[100] Ingleby on Puerperal Fever in Edinburgh Medical and Surgical Journal, vol. xlix. p. 417.

[101] In a paper read before the Medico-Chirurgical Society, April 7th, 1840, and reported in the Medical Gazette for April 17th, 1840.

[102] See also Mr. Ceely's paper, in Lancet for March 7th, 1835, in which a case of puerperal fever is related, where erysipelas of the vagina and pudenda supervened in the course of the illness.——My friend, Dr. Lightfoot, informs me that in December, 1839, he attended Mrs. R. of Nottingham, who was suffering from puerperal fever, in a severe form. As the disease was subsiding, erysipelas appeared upon the nates, and extended over the *whole trunk and extremities*. It was of the superficial variety; possessing all the characters of cutaneous erysipelas, and showed no disposition to affect the cellular tissue.

IX. That puerperal fever and erysipelas may, during life, mutually produce each other in a second person, there appears to be evidence of the most indubitable nature. This is evidently a question of facts, and as it is a most important one, I shall bring them from different quarters; because, although a very few instances, if well authenticated and correctly observed, would be sufficient; yet, in questions of this nature, where many circumstances may occur to interfere with accuracy, it is well to have evidence from various and distinct sources, inasmuch as we then cannot attribute the occurrences to mere accidental coincidences, nor to observations made through the strongly coloured medium of preconceived opinions and predilections. In more than one disorder, where there is much variation in the symptoms, the proof of propagation from one to another is always regarded as conclusive. Upon what other evidence does the identity of small-pox in its mildest and most confluent forms, or of scarlatina as often seen, and malignant sore throat, depend? If the evidence be sufficient in one case, why is it not in another?

I shall first mention, as instances of the probable inducement of puerperal fever from erysipelas, some facts related by Dr. Paley of Ripon, but formerly of Halifax, and which came under his own immediate observation. A man who resided near Halifax some years since was affected with a most severe attack of erysipelas, which rapidly terminated in gangrene. Whilst the surgeon was in the act of dressing the sloughing sore, he was called off to a female in labour, to whom he immediately went; this patient, and five others in succession, died of well marked puerperal fever, although the disease was not then known in the neighbourhood, had not been for many years, nor had any other practitioners any cases. Very recently a man in the neighbourhood of Ripon had a similar affection of the scrotum, and immediately afterwards puerperal fever occurred in the practice

of the medical man who had the care and dressing of this patient.[103]

Mr. Blagden has related the case of one of the midwives of the British Lying-in Hospital, who a few days after attending in labour, a woman who died of extensive peritoneal inflammation, was seized with a severe attack of erysipelas of the face.[104]

"On the 16th of March, 1831, a medical practitioner, who resides in a populous parish in the outskirts of London, examined the body of a woman who had died a few days after delivery from inflammation of the peritoneal coat of the uterus. On the morning of the 17th of March he was called to attend a private patient in labour, who was safely delivered on the same day. On the 19th she was attacked with the worst symptoms of uterine phlebitis, severe rigors, great disturbance of the cerebral functions, rapid feeble pulse, with acute pain in the hypogastrium, and peculiar sallow colour of the whole surface of the body. She died on the fourth day after the attack, the 22nd of March, and between this period and the 6th of April, this practitioner attended two other patients, both of whom were attacked with the same disease in a malignant form, and fell victims to it.

"On the 30th of March, it happened that the same gentleman was summoned to a patient, a robust young woman, seventeen years of age, affected with pleuritis, for which venesection was resorted to with immediate relief. On the 5th of April there was no appearance of inflammation round the puncture, which had been made in the median basilic vein, but there had been pain in the wound during the two preceding days. The inner surface of the arm, from the elbow, nearly to the axilla, was now affected with erysipelatous inflammation. Alarming constitutional symptoms had manifested themselves. The pulse 160, the tongue dry; delirium

[103] Medical Gazette, December 6th, 1839, p. 397.

[104] Dr. Lee in Medico-Chirurgical Transactions, vol. xvi. p. 444.

had been observed in the night. On the evening of this day the inflammation had spread into the axilla. The arm was exquisitely painful; but in the vicinity of the wound, which had a healthy appearance, the colour of the skin was natural, and no hardness or pain was felt in the vein above the puncture. On the 6th patches of erysipelatous inflammation had appeared in various parts of the body; on the upper and inner surface of the left arm, and in the sole of the left foot, all of which were acutely painful on pressure. The inflammation of the right arm had somewhat subsided. The pulse was 160, the tongue brown, dry, and furred. Restlessness, constant dozing, and incoherence. When roused, she was conscious. The countenance cold; the heat of the surface irregular. On the 7th, pulse rapid; countenance anxious; teeth and lips covered with sordes; somnolence and delirium. The left arm above the elbow was acutely painful, and very much swollen. The right was but little painful, and the erysipelas had made no farther progress. The patches of erysipelas on the forehead and sole of the foot had disappeared, but there was a slight blush of inflammation on the inner side of the calf of the left leg. The symptoms became aggravated, and she died on Saturday the 9th of April.

"The author of this article examined the body with Mr. Prout on the 11th, and the following morbid appearances were observed:—

"The wound in the median basilic vein was open, and its cavity was filled with purulent fluid. The coats of this vessel and of the basilic vein were thickened, so as to resemble the coats of an artery. The inner surface of these veins was redder than natural, and at the upper part had lost its usual smoothness, but there was no lymph deposited upon it. The mouths of the veins entering the basilic were all closed up with firm coagula of blood or lymph. The cellular membrane along the inner surface of the arm was unusually

vascular, and infiltrated with serum. This infiltration was to a much greater extent along the situation of the erysipelatous inflammation of the left arm; but the veins of this arm were perfectly healthy."[105]

In an important paper in the Lancet for March 7, 1835, to which I shall again have occasion to refer, Mr. Ceely, of Aylesbury, says, "That the two diseases had a common origin; that the puerperal disease, and the prevailing erysipelas, were identical, and each capable of producing the other, was soon beyond a doubt; every puerperal case giving rise to numerous cases of the common epidemic, in the persons of the nurse and attendants."[106]

The following evidence on the connection between erysipelas and puerperal fever, is given by Mr. Ingleby:—"In the year 1833, a medical friend was in attendance upon a lady affected with erysipelas. On one occasion, after making incisions into the inflamed structures, he went directly from this patient to a lady in labour, whom he delivered at six p. m. of Wednesday, 28th August. It is worthy of remark, that although this was a *primipara*, the patient continued to be harassed with pains like after-pains, from the time of her delivery, until the occurrence of the rigor on the afternoon of Friday.—*Result, fatal.*" Seven cases occurred up to the 7th of September, in six of them the result was fatal. "Several cases of a mild character followed the foregoing seven, and their nature being now most unequivocal, my friend declined visiting all midwifery cases for a time; and there was no recurrence of the disease.

"Second series.—Case 1. A practitioner, who had been engaged in dressing some extensive erysipelatous wounds of the arm, the result of long incisions which had been made in

[105] Lee on Puerperal Fever, in Cyclopædia of Practical Medicine.

[106] An Account of a Contagious and Epidemic Puerperal Fever, which prevailed in Aylesbury and its vicinity in the Autumn of 1831, by Robert Ceely, Esq.—Lancet, vol. xxvii. p. 813.

the parts, was called within half an hour afterwards to a case of midwifery. It was a placenta presentation, and he was assisted by a friend, by whom he had been assisted in dressing the erysipelatous wounds. The patient was delivered at midnight of Tuesday. *Early* the following morning she was feverish. The same day at noon the rigor took place, and death occurred on the following Saturday. The nurse became feverish and ill.

"Case 2. This patient was delivered late at night by one of the practitioners alluded to in the last mentioned case, six or seven hours after dressing the erysipelatous wounds. During the course of the night she became excessively feverish, and remained so the whole of the following day, on the even- of which the rigor took place, followed in five hours by a second. Both rigors were very severe. Fortunately the system was rapidly placed under the mercurial influence, and the patient recovered. The nurse was seized with a violent erysipelatous inflammation of the throat.

"The third series occurred in November, 1836. Having accidentally witnessed the post mortem examination of a young woman, who died in our town infirmary very soon after admission, and having recognised the same morbid appearances as characterised the first series of cases, I went immediately to the residence of the practitioner by whom she had been attended, and made enquiries respecting her illness, and whether he had seen other case or cases of a similar kind. His reply was rather inconclusive. I ascertained that he had delivered this poor woman shortly after he had opened several erysipelatous abscesses. On Tuesday mid-day, some hours after delivery, he found her extremely ill. The day following she was removed to the Infirmary, and died in the course of the night. I stated my suspicions, and requested him to be strictly on his guard in watching the patients he had delivered within the last few days." Six other cases, in which the patients were delivered by the same practitioner, occurred

within a few days, of which only one recovered. He then discontinued his practice for a time."

Mr. Ingleby having seen the cases, holds himself responsible for the accuracy of the report, and adds the following testimony:

"Case 1. Mrs. M. was seized with puerperal fever thirty hours after delivery, and died in forty hours afterwards. I saw the case two hours before death. The practitioner informed me that, for some days previous to the delivery, he had been engaged in dressing a severe erysipelatous sloughing wound.

"Case 2. This case in all essential particulars may be regarded as the counterpart of the last. A farmer residing in a village, fell from his horse, and received a severely lacerated wound of the scalp. Erysipelas and typhoid symptoms supervened, and the man died. The medical attendant had several midwifery cases in or near to the village. One of the patients had an attack of erysipelas, ending in premature labour and death. Others were attacked apparently with puerperal fever; of these some did well and others died. My friend remarks, 'I have no doubt of the connection of the whole of the cases with the case of external erysipelas, and of its being contagious.'

"During the prevalence of erysipelas in the Birmingham Hospital, several women in its immediate vicinity were affected with puerperal fever. Three of these died. The first was delivered by a dressing pupil of the hospital; the second was the wife of the brewer of the establishment. In both these cases the communication was almost direct. The circumstance of traumatic erysipelas having been observed to terminate in peritonitis, has an indirect bearing on this species of puerperal fever. At the period when these cases occurred, a girl in the hospital had some warty excrescences removed from the pudenda. Symptoms of peritonitis ensued, and proceeded to the fatal event; and on examination the morbid appearances

were found to correspond with those, by which the fatal cases of puerperal fever had been characterised."[107]

Mr. Sidey, in a paper read before the Medico-Chirurgical Society of Edinburgh, says, "In watching, with great anxiety in April last (1838) the progress of several cases of puerperal fever which occurred in my own practice, my attention was strongly called to the fact, that in several instances persons who had been in attendance upon, or otherwise in communication with, the sick, became themselves affected with some form or other of inflammatory disease, principally erysipelatous inflammation of the skin, the mucous membrane of the throat, and the peritoneum."

Mrs. C. was confined on the 16th of April, seized with puerperal fever on the 18th, and died on the fifth day of the attack. Her servant maid, who was delicate, on the fourth day was seized with bilious inflammatory fever, accompanied by severe abdominal symptoms like labour pains, erysipelas appeared on the right breast and shoulder, suppuration occurred, and the case ended fatally by effusion into the chest and peritoneum. Mr. C., the husband, was seized on the fourth day after his wife's death with smart fever and inflammatory sore throat, with a deep dusky redness all over the internal fauces, and small pustules on the uvula, with great tenderness of the larynx and much difficulty of deglutition.—He recovered.

Mrs. M. was confined on the 19th of April, and died of puerperal fever on the sixth day. Five cases of erysipelas among Mrs. M.'s friends happened during the week following her death. Her sister-in-law, who assisted and waited upon her, was within four days seized with bilious fever and great abdominal irritation, of which she died within eight days. Another sister-in-law was affected with smart fever and erysipelatous sore throat. The mother-in-law, who was

[107] Mr. Ingleby on Epidemic Puerperal Fever, in Edinburgh Medical and Surgical Journal, vol. xlix. p. 419.

in constant attendance, was seized with fever and erysipelatous inflammation of the face and head. Mrs. M.'s son, a boy aged five years, was seized with fever and erysipelatous inflammation of the face: and her daughter, aged seven years, was seized with sore throat of a dusky redness.

Mrs. J. was confined April 22nd and died from puerperal fever on the 28th. Her child, a fine healthy looking boy, when eight days old, was seized with erysipelatous inflammation of the umbilicus, which spread over the lower half of the body. The penis and scrotum became quite gangrenous, and he died in a few days.

Dr. Imlack, who assisted in the inspection of two of the bodies; was four days afterwards seized with considerable fever, and erysipelatous inflammation of the internal fauces and throat.[108]

Such cases might be multiplied, but I must content myself with relating two others. An out-patient of the Lying-in Hospital, (Edinburgh) was in the habit for some days of waiting upon a relation who was ill with an erysipelatous inflammation of the knee joint. Upon her return to the hospital she took charge of a new-born child. Two days afterwards the infant was seized with erysipelas of the abdomen, of which it died. On the third or fourth day after delivery, the mother was attacked with puerperal fever, and she with some others sunk under it. The hospital was quite free from the fever previous to the appearance of the erysipelas on the child.[109]

Dr. Hutchinson, in the communication before referred to, states that two practitioners residing ten miles apart, met half way from the residence of each other in attendance upon a patient suffering under extensive erysipelas of the legs with sloughing, which required incisions to be made, in which

[108] Extracted from a paper read before the Edinburgh Medico-Chirurgical Society, and reported in 51st volume of Medical and Surgical Journal, p. 91.

[109] Idem, p. 96.

both were engaged in handling the parts affected. One of them the same evening attended a patient previously healthy, who died from puerperal peritonitis. The other, during the two following days, attended three cases of midwifery, in all of which death followed from puerperal peritonitis."[110]

In addition to this long catalogue might be added the names of many others who have borne similar testimony, as of Collens, and of Abercrombie; but if the facts I have brought forward are not sufficient, a multiplication of them would not be, because they are so numerous as to prevent the possibility of mere coincidence, and the respectability and reputation of the narrators is a sufficient guarantee for their being accurately observed and truthfully reported. If this be admitted, and I cannot imagine that it will be rejected, I see not how we can avoid what appears to me to be the inevitable conclusion, namely, that puerperal fever is only one form of a diffused inflammatory action, which, when it is exhibited upon the surface of the body, is called erysipelas. This much at least I am sure of, that many questions in medicine, which by common consent are regarded as settled, do not rest upon stronger evidence, if so strong, as that which has been now adduced in favour of the identity of erysipelas and puerperal fever.[111]

[110] Medical Gazette, April 17th, 1840.

[111] I prefer, as I have said, at present retaining the old term puerperal fever to that of puerperal peritonitis, or that of uterine phlebitis, because it does not express any thing as to the nature of the disease, which both the latter do. For although it is certain that in the great majority of cases, the peritoneum is extensively affected, and also very frequently the case that the uterine veins are inflamed, it certainly does happen that the latter condition is not always evinced, and probably the former may occasionally not be present, the constitutional symptoms being the same. That one or the other of them is so I believe to be invariable, but that the two being nearly allied are either sufficient to account for the local symptoms, and so many of the general as depend upon them. The true proximate cause depends, in my opinion, on some more general cause. Waiting until this is more certainly known, I prefer a term which expresses nothing; I would rather our ignorance always stared us in the face, than that it should be hidden from us by a term which pretends to explain what it does not; more especially if that term be in some cases inapplicable.

DIFFUSE INFLAMMATION OF THE PERITONEUM, PLEURA, &c.

It will not be necessary to dwell so long on this part of our subject as we have done on the two preceding chapters, because much of what is there stated is applicable here, particularly in the latter, the subject of which and this are mutually dependent upon and illustrative of each other. All that is necessary at present to say may be comprised under two arguments :—

1st. That puerperal peritonitis is not a specific disease, and that it is not confined to the lying-in state, nor even to females; and that it cannot be distinguished either during life by the symptoms, or after death by the appearances, from diffuse peritonitis, which happens under other circumstances; and 2nd, That this form of inflammation of the serous membranes is intimately connected with external erysipelas.

I. That the inflammation of the peritoneum which occurs in the puerperal state is not peculiar to it, we have the strongest evidence for believing,—the testimony of the senses; the only means by which we originally gain information respecting disease, or any thing else. If it can be clearly demonstrated that any peculiar features, either in the symptoms during life, the appearances after death, or in the effects of remedies upon the course of the disease, distinguish the inflammation of the serous membranes in women in child-bed, then we are justified in continuing the present notions of its nature, and designating it by the term puerperal, or some corresponding word; but if, on the contrary, neither the symptoms during life, the post mortem appearances, nor the effects of remedies upon the course of the disease, differ in any essential particulars from complaints, as exhibited in other states than the puerperal, then we are not justified in speaking of it as a specific disease, being only developed in one

condition of the female system. Now although it is commonly assumed and spoken of as a disease peculiar to the puerperal state, I am not aware that it is any where on competent authority asserted that such is in reality the fact, or that any one has attempted to point out the distinctive marks, with the exception of Dr. Lee, who would regard inflammation of the uterine veins as pathognomonic; but even he does not attempt to show that the condition of the peritoneum is confined to puerperal fever; and as we have seen, this condition of the veins is not in reality necessary to the existence of the disorder. Also, if it were, it would not be sufficient to insulate the affections from all other morbid states, since equally good observers have regarded external erysipelas as depending upon the same inflamed condition of the veins. Indeed, so complete is the resemblance in every respect, from the commencement to the termination, as well as the effect of remedies upon them, that to me it appears evident that two persons, say, the one, a woman suffering from puerperal fever, the other, a man labouring under that form of peritoneal inflammation, in which the effusion is of the non-plastic kind, which is sometimes developed after an operation for strangulated hernia, or stone in the bladder, are both suffering from the same complaint. Moreover, that if we did not approach the bed-side of the female with the previous knowledge of her recent delivery, we should not discover it from her condition, unless from knowing that women are, under such circumstances, exposed to be so affected; or, to state the proposition conversely, if we were called to the bed-side of a perfectly strange female, of whose previous history or symptoms we knew nothing whatever, and who was suffering under this complaint idiopathically developed, should we not make the enquiry if she had recently been delivered? If answered in the affirmative, would not our diagnosis be puerperal fever; if in the negative, diffuse peritonitis? Yet the disease would be the same in its nature, and ought to receive

the same treatment. But are there not many who would be materially influenced in the means they considered proper to be used by the answer to this, in their minds, leading question?

Dr. Douglas, in speaking of the contagious character of puerperal fever, says, "I do, however, believe that a woman, either pregnant, or whilst nursing, or even a very delicate female, for several months after lying-in, although not nursing or pregnant, might be susceptible of this disease. I likewise think that any woman, whether married or single, at particular periods, might be liable to an attack of it, if much exposed to the influence of an hospital epidemic. Cases occurring under these different circumstances have happened within my own knowledge." And in answer to the query, Have you observed any connection between puerperal and common epidemic fever? he replies, "Although I am satisfied that puerperal fever, in all its variety of forms, may be generated in a lying-in hospital by local causes; I have no doubt of its being often excited by atmospherical influence, like common epidemic fever; and I am of opinion that the same exciting influence, which would at another period produce common fever in an individual, might, at the time of lying-in, produce puerperal fever."[112]

"To view," says Dr. Cusack, "the low forms of puerperal abdominal inflammation, or, as it has been termed, puerperal fever, in its true light, it seems proper to consider it as a disease, whose essential character consists in a local inflammation of a peculiar nature, accompanied by fever of the lowest typhoid description; as a disease not by any means exclusively confined to puerperal subjects, yet modified by the puerperal state; but, on the contrary, it may occur (and frequently does occur) in individuals of either sex, produced by the effects of bruises, wounds, surgical operations, &c. Nay,

[112] Douglas on Puerperal Fever, in Dublin Hospital Reports, vol. iii. p. 144.

it frequently may arise idiopathically, or at least from a cause not by any means manifest. I must further observe, that this disease, if not the same, is at least a modification of that known by the term Diffuse Cellular Inflammation."[113]

Dr. Underwood declares that, upon examining several bodies of children who had died of erysipelas, the contents of the belly have frequently been found glued together, and their surface covered with inflammatory exudation exactly similar to that found in women who have died of puerperal fever.[114]

"I have little doubt," says Dr. Abercrombie, "that women in the puerperal state are liable to two distinct forms of peritonitis, which, in the discussions on this subject, have probably not been sufficiently distinguished from each other. They are liable to the common acute peritonitis presenting the usual symptoms, yielding in a large proportion of cases to the usual treatment, and exhibiting in the fatal cases the usual morbid appearances of extensive pseuso-membranous deposition and adhesion. But they are likewise liable to another form of disease, in which the symptoms are more insidious, and accompanied from an early period by great prostration of strength, and fever of a typhoid character. This affection runs its course with great rapidity: it does not yield to, or does not bear the usual treatment, and it shows on dissection, chiefly extensive effusion of a sanious, milky, or puriform fluid, with much less adhesion than in the other case, often with none, and frequently without any sensible changes in the appearance or structure of the parts. There is little doubt that it is a contagious disease, or that it is capable of being conveyed from one woman who is affected with it to another who is in the puerperal state. It appears as an epidemic at particular times, being very frequent and

[113] Cusack on Puerperal Fever, in Edinburgh Medical and Surgical Journal, vol. xxxi. p. 41., et passim.

[114] Underwood on Diseases of Children, vol. i. p. 35.

very fatal while it prevails; and erysipelas, or other affections of an erysipelatous character, have often been observed to be prevalent at the same time."[115]

"I must now solicit your attention," says my learned friend, Dr. Hodgkin, in his valuable Lectures on Morbid Anatomy, "to those cases in which the inflammatory effusion into the cavity of the peritoneum instead of merely presenting a partial admixture of inorganisable matter, consists either wholly or principally of this substance. Although persons of all ages and descriptions are liable to this form of peritonitis, it appears certain that some individuals are more particularly disposed to it than others, and it would seem that injury to, or disease of the pelvic viscera, are the most frequent of the exciting causes. It has, I believe, in most cases been a peritonitis of this kind, which has fatally supervened on parturition, and the turbid and whitish, not to say purulent, effusion which has accompanied it, has led to the absurd idea that milk had been transferred from the mammæ to the cavity of the peritoneum: I have repeatedly met with cases which appeared to bear a very close analogy to puerperal peritonitis, in males labouring under disease in or about the bladder."[116]

The evidence of Andral, in his valuable work Sur les Maladies de l' Abdomen, is to the same purport. In the chapter upon acute peritonitis he has related the histories of several cases with the post mortem appearances; in some the disease arose idiopathically, in some as the effect of external violence, and in others it succeeded parturition; but in no place does he sanction the idea of the disease differing in its nature, where it succeeded parturition, from where it followed external violence, nor does he even allude to the disease pos-

[115] Pathological and Practical Researches on Diseases of the Stomach, by John Abercrombie, M. D., p. 205, 1830.

[116] Lectures on the Morbid Anatomy of the Serous and Mucous Membranes, by Thomas Hodgkin, M. D. vol. i. p. 150, 1836.

sessing any thing of a specific character.[117] The declarations of Dr. Mackintosh and Dr. Alison are quite decided in favour of this view. Such evidence is, as far as any evidence can be, when taken in conjunction with what has been said in the foregoing pages, demonstrative proof of the exact identity of the results of diffuse peritonitis, whether arising idiopathically or following parturition, wounds, or mechanical injuries, and it must rest with those who assert the difference in their nature, to point it out by some means as yet not evident.[118]

II. That this diffuse peritonitis is most intimately connected with erysipelas few will deny, and that inflammation of the internal serous membranes frequently supervenes upon external erysipelas is well known,—but then it is not erysipelas, it is said.[119] If by erysipelas be meant inflammation of the skin alone, this is self-evident, but if it be meant that the disorder is no longer of the same nature, I ask for the proof of its difference. If occurring at the same time; alternating with the external affection; being accompanied by the same general symptoms; having, as far as the situation and structure of the parts allow, the same local symptoms; producing the same results; and requiring the same treatment: moreover, one form of the complaint producing the other form in a second person, be decisive of identity of nature, then, most assuredly, these two forms are but varieties of one disease. I might fairly refer to the preceding statements respecting the concurrent existence on the one hand, of puerperal fever and erysipelas; and on the other, of the identity of puerperal

[117] Andral's Clinique Medicale; Maladies de l' Abdomen.—Paris, 1827, p. 511., et seq., particularly cases 6 and 7.

[118] For Dr. Mackintosh's opinion in detail, as to the absolute identity of puerperal fever with inflammation of the peritoneum, see chapter headed, "Puerperal Peritonitis, vulgarly called Puerperal Fever."—Principles of Pathology and Practice of Physic, 1836, vol. i. p. 273. And no one can more strongly state his opinion of the identity of puerperal peritonitis and diffuse inflammation of the peritoneum than Dr. Alison. See note 39, p. 37.

[119] Copeland's Dictionary; art. Erysipelas.

fever with diffuse peritonitis occurring under other circumstances than recent delivery; because if these two propositions be correct, then also the third, viz. that diffuse peritonitis and erysipelas are the same disease, must be admitted. However, we are not obliged to adopt this indirect, but conclusive mode of arguing.[120] The four following cases, the two first from Dr. Abercrombie, the third seen by Dr. Alison, and the fourth as witnessed by myself, are very strong evidence upon this point, and afford direct proof upon the question.

A lady, aged fifty years, was seized with erysipelas of the left leg, attended with much pain and swelling of the foot, after seven days the erysipelas of the leg subsided, leaving the foot unrelieved, but upon the eighth the foot also became suddenly well, and within a few hours after, severe pain was complained of, first in the epigastrium and then in the lower part of the abdomen. This pain was not much increased by pressure, but she moaned much, was anxious and restless, pulse 100, bowels open; bleeding, and the other usual means were ineffectually employed; her strength sunk, and she died about twenty-four hours after the metastasis.

Inspection.—The upper half of the small intestines was of a dull leaden colour, the lower half of a very dark red, the whole much distended, and a considerable quantity of bloody sanious fluid in the sac of the peritoneum. Besides these there were no other vestiges of disease.

A woman aged thirty while convalescing from an attack of erysipelatous inflammation of the throat, took some laxative medicine, which unusually annoyed her, and shortly after pain of the abdomen came on, attended with vomiting. The pulse frequent and small, countenance exhausted and skin

[120] Van Swieten says:—"But the disease" (erysipelas) "is the most dangerous if it affects the membranes of the brain, the lungs, or other viscera, where it readily spreads. From whence also Galen has remarked that erysipelas remains chiefly about the skin, as well that which is external and is the common tegument of all parts of the body, as also that which is thin and membranous and surrounds each viscus."—Van Swieten, vol. ii. p. 400.

cold. It was attempted to bleed her, but little blood flowed; blisters, opiates, and various injections were employed, and she died on the evening of the following day, forty-eight hours from the attack.

Inspection.—Omentum inflamed and at the lower part adherent for a few inches to the sigmoid flexure of the colon; intestines distended and of a livid dark colour, without exudation; peritoneal sac contained a considerable quantity of puriform fluid.[121]

After the reading of Mr. Sidey's paper, from which I have quoted at page 87, Dr. Alison related the following case. "A young woman who had an erysipelatous affection of the mamma, miscarried about the third month; and very soon afterwards the inflammation left the breasts, the abdominal cavity was affected, and all the symptoms of puerperal fever came on. In the course of a few days she died, and upon opening the abdominal cavity, it was found filled with a bloody flaky serum, without any adhesion of the internal parts."[122]

James Jessop, Æt. 27, by trade a tanner, came under my notice on Wednesday, May 30th, 1832, with extensive syphilitic sores in the right groin. He had the peculiar look of gastric irritation. The countenance was sallow, the eye glossy, and the pupil dilated. He said he was in good health, and that he was a steady sober man, but there appeared to be much disturbance in his ideas, and his answers were very slow and contradictory; his mind was evidently weakened; he had suffered much from want during his illness. On the following Sunday, June 4th, he complained of feeling very unwell, had a severe rigor, with considerable vomiting, and much fever. Tuesday, 5th, Erysipelas appeared extensively about the sores in the groin; at the same time, he complained of excessive tenderness in the abdomen, especially on pressure.

[121] Abercrombie on Diseases of the Stomach, &c., p. 198.

[122] Edinburgh Medical and Surgical Journal, vol. li. p. 96.

The pulse was very quick, weak, and irritable. Vomiting of green bile was excessive. On Wednesday morning he died.

Inspection.—Sores in the groin in a sloughing state. Erysipelatous redness gone. Lungs congested; turbid fluid with floculi of imperfect lymph in both pleuræ; some fluid in the pericardium. The omentum, liver, spleen, and intestines, had patches of lymph on their surfaces. The small intestines much injected. A very large quantity of seropurulent fluid with flakes of curdy lymph floating in it, in the cavity of the peritoneum. Some petechiæ about the kidneys. Mucous membrane of the pylorus and duodenum injected. Arachnoid membrane opaque, pia mater injected, and much infiltrated with fluid; bloody points on slicing the brain; fluid effused within the ventricles and at the base of the brain.

Sir A. Carlisle, in a paper on erysipelas in the Medical Gazette for March 8th, 1828, vol. i. p. 400, among many singular and fanciful notions, has some sensible remarks. He says, "I am also well assured that erysipelatous inflammation more often attacks the great continuous serous membranes of internal cavities than the profession are taught to believe." And Alibert says, "L'érysipèle n'est pas seulement une maladie propre a la peau extérieure. Bichat a tres-bien démontré l'aptitude des deux téguments a étre envahis par ce genre d'inflammation. Nous sommes couvert par une enveloppe qui se replie et se continue dans tontes les profondeurs des organs. Les tissues identiques sont necessairement susceptibles des mêmes altérations. Hippocrate connoissait d'une maniere parfaite cette propriété de l'érysipèle, de se porter du dehors en dedans; c'est la souvent qu'est tout son danger."[123]

[123] Alibert's Maladies de la Peau, p. 16.

DIFFUSE INFLAMMATION OF THE MUCOUS MEMBRANES.

The question of erysipelas ever attacking the mucous membrane is, like the preceding, one which must be determined by an appeal to facts, as to whether the affection ever does extend from the skin to the mucous membranes, or from the latter to the former; having first ascertained that there is nothing in the nature of the complaint, nor in their organization, which *necessarily* excludes the mucous tissue from being involved in its attacks. Into this latter question it will not be requisite to enter, after what has already been stated on the subject; but as the fact of the mucous membranes ever being attacked by erysipeloid inflammation is so commonly denied, and as one of the most recent, and certainly, most able writers on the disease, has distinctly stated that the mucous membranes are not liable to erysipelas,[124] as on the previous question, it will be necessary to bring evidence from various quarters to show that, unless we totally disregard facts when opposed to preconceived opinions, we must admit, erysipelas not only to be capable of affecting the mucous membranes, but that not unfrequently they are involved, either primarily, or by the extension of the disease to them from the skin. The pharynx is the part by far the most commonly attacked, but there is no doubt that the lining membranes of the vagina and rectum are also affected. Nor does it seem improbable that dysentery, at least in some of its forms, if not erysipelas of the mucous membrane of the larger intestines, is, at least,

[124] Lawrence in Med.-Chirg. Trans., vol. xiv. p. 22. So also Dr. Copeland in one part of his Article on Erysipelas, seems (though not so distinctly as Mr. Lawrence) to deny that the internal membranes are affected with erysipelas, for he says, when it extends to them from the skin, it loses its distinctive characters; and yet farther on he appears to have forgotten this and relates a case of erysipelas of the throat, which I shall presently take occasion to refer to.

closely allied to it; but as the evidence is not of that positive character, as in the other cases, this must be regarded as only a conjecture, though a most probable one.

Erysipeloid inflammation of the throat may at first be easily distinguished from other affections of the same part, but as the disease spreads, the larynx sometimes becomes so much affected, that it may be difficult to distinguish it from croup; or the tonsils may become involved and cynanche tonsillaris be simulated. From croup, however, it may be known by the larynx being only secondarily involved, and that only in some few cases, in the greater age of the patient, and also by the noise in respiration not being of that peculiar shrill barking sound.

From quinsy it may be distinguished by the more serious nature of the constitutional symptoms, the fever not partaking of the same synochial character, by the comparative absence of swelling, and its being more generally diffused.

The local symptoms are ushered in by considerable constitutional disturbance; there is rigor, pain of the head and back, heat of the surface, with nausea and a frequent pulse. The throat, especially the velum and the uvula, are seen to be of a redder and somewhat darker appearance than natural; there is greater pain and difficulty in deglutition than the degree of swelling would accouut for. The voice is generally weakened and sometimes quite lost. The swelling is extended over the whole membrane, but more especially is the uvula enlarged and elongated; this, however, does not always take place. After a few days excoriations appear, which are followed by superficial ulcers, and sometimes sloughing; not unfrequently the disease does not extend beyond the pharynx, but at times the larynx becomes involved, as does also the œsophagus, when, if the inflammation inclines towards the adhesive type, a false membrane is thrown out, and we have the symptoms of true croup; but much more commonly there is infiltration of sero-purulent fluid into the sub-mucous mem-

brane, and occasionally into the cellular tissue on the outside of the larynx and trachea. This effusion is more particularly seen when the disease supervenes, as it often does, upon ulcers of the glottis, (especially those of a syphilitic character) when the progress of the disease is alarmingly rapid, the patient being often destroyed by suffocation from the closure of the glottis. At times the inflammation spreads down the bronchial membrane and produces the symptoms of bronchitis.

The writers of the middle and latter end of the last century, who particularly called attention to a disease of the throat—which then prevailed epidemically in many parts of the country, noticed the erysipelatous redness of the mucous membrane, and although the disease as generally observed was allied to scarlatina, in some districts it appears to have been thought of an erysipelatous character. Thus Dr. Saunders says, "I send you my observations on the erysipelatous sore throat, which raged in this neighbourhood in 1777, and which rages presently in many parts of the country."[125]

Dr. Fordyce has a chapter in his Elements of the Practice of Physic, on The Erysipelatous Sore Throat, in which he says, "after a day or two the skin of the extremities, and of the throat externally, is often affected with erysipelatous inflammation, and little eruptions take place, relieving the sickness, purging, and other symptoms, arising from the mucous membrane of the intestines being diseased."[126]

More recent writers have not only asserted the existence of erysipelas of the throat, but have supported it by many cases. The papers by Dr. Stevenson[127] and Dr. Gibson[128]

[125] Saunders on the Sore Throat and Fever in the North of Scotland, in a Letter to Dr. William Grant, who had previously used the same expression. 1778.

[126] Elements of the Practice of Physic, by G. Fordyce, M.D., F.R.S., p. 311.—Sixth edition, 8vo. 1791.

[127] Edinburgh Med.-Chirg. Trans., vol. ii. p. 128.

[128] Ibid, vol. iii. p. 94.

contain many most interesting facts. The former of these gentlemen says, "This affection (sore throat) occurred so frequently in persons who had been much with erysipelatous patients, that I could not doubt their identity; and I came finally to the conclusion, that it was in reality erysipelas of the fauces, spreading occasionally to the adjacent parts in different directions."

It would be difficult to condense the reports given by Dr. Stevenson farther than he has already done, and yet the facts are so important to my argument, that I shall venture to insert them.[129]

"Case 1.—Mrs. H. October 26th, 1821. Erysipelas of face and head; severe case; high fever and delirium; no affection of the throat.—Recovered.

"No. 2.—J. H., son to No. 1. November 7th, 1821. Throat affected in the manner described; tedious case; inflammation spread successively to the pharynx and œsophagus; slight erysipelas of the face came on during the second week; but soon subsided; but the affection of the throat continued a considerable time afterwards.—Recovered.

"No. 3.—M. M., Æt. 50, attended on No. 1. November 23rd, 1821. Severe affection of the throat, which soon spread to the larynx; the danger appeared imminent; the respiration resembling that of severe idiopathic croup; no external erysipelas.—Recovered.

"No. 4.—H. H., daughter to No. 1. November 25th, 1821. Considerable pyrexia; slight affection of the throat, which did not spread nor ulcerate; no external erysipelas.—Soon got well.

"No. 5.—J. S. January 18th, 1822. Throat affected severely; very high fever; had visited several times a neighbour who died of erysipelas of the face and head; larynx a little affected; erysipelas of the face of a mild descrip-

[129] It is worthy of notice that it was at this same period that Dr. Duncan's cases of diffused inflammation of the cellular membrane occurred.

tion, came on about the eighth day, when the other complaint was declining.—Recovered.

" No. 6.—Mrs. N. Frequently visited No. 5. January 25th, 1822. Severe and tedious case of erysipelas of the face and head, with a high fever and delirium, throat not affected. —Recovered.

" No. 7.—Mrs. H. February 5th, 1822; frequently visited No. 6. Affection of the throat as described; tedious case, but not severe; lasted five or six weeks; no external erysipelas.—Recovered.

" No. 8.—R. F., Æt. 60, frequently visited No. 5, who wrought in the same tan-yard with him. February 5th, 1822. Affection of the throat as above; appeared slight at first, but spread to the larynx on the third day, and he died on the fifth, with all the appearances of a child in severe croup.

" No. 9.—S. attended on No. 7. February 15th, 1822. Severe affection of the throat, but of short duration; no external erysipelas. — Recovered. As soon as this patient was taken ill, she went home to her parents, who resided at some distance. I afterwards learnt that they were very soon seized successively with similar complaints, and that the mother died a few days after being attacked.

" No. 10.—M. S. attended on No. 7. after S.'s seizure. February 25th, 1822. Severe erysipelas of one arm; high fever and delirium, no affection of the throat.—Recovered.

" No. 11.—Mrs. T. August 12th, 1822. Severe erysipelas of the arm and shoulder, terminating in extensive suppuration of the whole cellular membrane, and death.

" No. 12.—P. K., son-in-law to No. 11. August 30th, 1822. Severe affection of the throat, chiefly of the pharynx and œsophagus.—Recovered.

" No. 13.—Mrs. R., sister to No. 11. September 17th, 1822. Affection of the throat, chiefly of the pharynx, tedious, but not severe.—Recovered.

"No. 14.—I. R., son to No. 13. November 1, 1822. Severe case of erysipelas of face and head; very high fever and delirium; no sore throat.—Recovered.

"No. 15.—December 1, 1822, I was called to W. R., father of the last patient, and found him affected with a sore throat, exactly similar to that of the others. He had been seized with a rigor a few days before, and the throat was felt painful next day. The febrile symptoms less severe than in the generality of cases.

"The following cases occurred among my own relations:—

"No. 16.—Mrs. S. Jun. February 6th, 1822. Rigor; intense pain in the head, and loins; very high fever. Second day severe sore-throat with total inability to swallow. Seventh day erysipelas of the face, gradually spreading over the whole head; considerable purulent discharge from the throat. Thirteenth day, critical sweat.—Recovered.

"This was the severest case I had an opportunity to see of the external erysipelas supervening to the sore throat. The erysipelas in most other cases was mild, and not attended with much burning pain; generally commencing when the fever began to subside.

"No. 17.—Mr. S. attended on No. 16 during the first week of her illness. February 14th, 1822. Rigor, high fever, delirium, and stupor from the commencement; erysipelas of the face, head, and neck and shoulders, extending down over part of the trunk; no sore throat.—Died on the thirteenth day.

"No. 18.—C. S. Much with both Nos. 16 and 17. March 2nd, 1822. No rigor, severe pains of loins, no headache; very high fever for a week, pulse after that period continued about 105 or 110 beats in the minute, till the disease terminated; sore throat as described began on the fifth day, ulcerated and discharged pus for several weeks; a blister applied to the neck about the seventeenth day produced ery-

sipelatous inflammation over the whole thorax; but healed readily; disease lasted near nine weeks.—Recovered.

"No. 19.—Mrs. S. Sen. Constantly with the above. April 3rd, 1822. Severe case of erysipelas of the face and head; high fever, delirium and stupor; no sore throat; crisis on the tenth day.—Recovered.

"No. 20.—Mrs. S. Much with all the above. April 10th, 1822. Very high fever; severe sore throat; larynx became affected on the fifth day, no external erysipelas.

"No. 21.—M. G. Much with Nos. 2 and 3. April 10th, 1822. High fever for a few days, with slight affection of the throat.—Recovered.

"N. B. When this paper was read (July 7th, 1824,) several members of the Society mentioned having observed similar facts within the last few years, although the succession of cases, where the communication with persons already affected had taken place, had not been traced to so great an extent. Several members had seen the affection of the throat here described, supervene on the erysipelas, even in the later stages. In three cases mentioned by Dr. Abercrombie, Dr. Hay, and Mr. Bryce, the inflammation appeared to have spread from the fauces to the external surface, by the membrane lining the internal nares, the part of the skin first affected having been, in the first two cases, at the orifice of the nostrils, and in the last at the orifice of one of the lachrymal ducts."

In these cases it will be noticed that when the sore throat and external erysipelas appeared upon the same person, the sore throat preceded the external inflammation. Of this Dr. Stevenson says, he witnessed many examples, but that he did not meet with an instance of the reverse. The wanting link, however, in the evidence connecting the two diseases, we are supplied with in the note appended; for it is there stated, that several members had seen the affection of the throat supervene upon erysipelas, even in its later stages. So also

in the epidemic which prevailed at Montrose at the same time as that at Arbroath, the external affection was first seen.

"James Stevens, a healthy young man in Montrose, was attacked with erysipelas in the face. The swelling, however, was much more trifling than usual, so that there appeared little more than a deep blush. In a few days the throat became affected, then the larynx, upon which he was very suddenly cut off."[130]

"An infant son of a gentleman of Montrose was seized with erysipelas of one foot. The disease spread successively over both legs and arms, and the whole trunk of the body, but it did not reach the head or face. It terminated by abscesses in both ankles and shoulders, which were opened, and ultimately did well. The mother was now affected with erysipelas in the face and scalp. The disease spread over the whole trunk, but did not reach the extremities. It terminated in a small abscess in the neck, and another in one of the eyelids. The nurse who suckled the child was now attacked with symptoms of pneumonia, and obliged to go home to her father's house at Old Montrose, a distance of four miles. Her father had, some days before her arrival, received a wound of the scalp. In a few days after her arrival erysipelas came on upon his head and face, of which he soon afterwards died. A sister living in the same cottage became affected with severe febrile symptoms, attended with inflammation of the throat, from which she recovered very slowly. Two children in the same house, one at five, another at seven years old, were at this time cut off by what seemed an attack of croup. The nurse herself had a second attack, apparently of pneumonia, afterwards of cynanche, similar to the sister's disease, and ultimately recovered only after a lapse of several months."[131]

[130] Edinburgh Med.-Chirg. Trans., vol. iii. p. 97.

[131] See also the case of Mr. David Wylie and his two servants, vol. iii. p. 99.

"When Erysipelas," says Dr. Copeland, "attacks the face, it sometimes affects the mouth and fauces, extending in some instances to the pharynx and larynx internally, and down the neck to the chest externally. An interesting case of this kind was attended lately by Mr. Byam and myself, where the enormous tumefaction of the neck and throat, with the affection of the larynx and trachea, increased by the constriction of the integuments surrounding the neck and throat, caused suffocation in a few hours. This extension of the disease to the fauces and throat, not unfrequently occasions a species of consecutive croup, as stated in that article; it may also occur when the scalp is affected, but in this case the disease generally extends down the neck and back even to the loins."[132]

In the account of the epidemic erysipelas which appeared in the early part of 1826, in Kingston, Jamaica, Dr. Le Leon informs us, "that in some there was inflammation of the cellular membrane, but in most it took the form of phlegmonous erysipelas, and that numbers (many of whom also had external erysipelas) suffered from an affection of the throat. A darkly coloured purplish inflammation commenced from the curtain of the palate, spread over the uvula and over the tonsils; and became, in some cases, fainter and fainter as it descended over the pharynx, while in others the pharynx as far down as could be seen, was equally inflamed and purplish. The tonsils were almost always more or less swollen, and in severe cases covered with small ulcers, which were generally charged with a whitish yellow excretion, and were of a circular figure. They often attacked the uvula and the pharynx, while the mucous membrane became puffy and purplish."[133]

The evidence of Mr. Travers and Mr. Arnott is of an equally positive character. The former says, "Among the various affections of the throat requiring the operation of

[132] Dr. Copeland's Dictionary; art. Erysipelas, p. 819.

[133] New York Medical and Physical Journal, 1827.

bronchotomy, upon which so many able papers have been given to the profession, is this erysipelas of the common mucous membrane, by some termed cynanche or angina pharyngea."[134] The latter gentleman, after reporting three cases of erysipelas, says, "the cases all occurred in one family: the mother was first affected with inflammation of the pharynx, terminating in mortification; on her death the husband was attacked with inflammation of the throat and erysipelas of the face; as he recovered the daughter was similarly seized with inflammation of the pharynx and severe erysipelas."[135]

Dr. A. Thomson declares that "This species (erysipelas œdematodes) is often accompanied with an affection of the throat evidently erysipelatous. The symptoms are a red blush over the velum palatum and uvula, slight tumefaction, and considerable pain on deglutition. After a few days, excoriation and superficial ulceration sometimes extends to the larynx, affecting speech and respiration; sometimes to the pharynx and œsophagus."[136]

Dr. M'Dowel says, "Severe rigors and diffuse inflammation of the throat, of a dusky colour, with patchy deposition of lymph, and more or less sloughing, as in cynanche maligna, preceded several severe cases of erysipelas of the head and face."[137]

"More generally, however," says Dr. Tweedie, "the inflammation (erysipelas) after beginning in the throat, has spread from the mouth to the cheek and face, or through the nostrils to the nose, and thus erysipelas has been propagated to the face and head."[138]

Dr. Alison makes the following unequivocal declaration, "The same form (erysipelatous) of inflammation is often seen

[134] Travers on Constitutional Irritation, vol. ii. p. 161.

[135] Medical and Surgical Journal, vol. lvii. p. 193.

[136] Bateman's Synopsis of Cutaneous Diseases, p. 130, 3rd Edit.

[137] Dublin Journal for October, 1834.

[138] Cyclopædia of Practical Medicine, vol. ii. p. 108.

at the same time, and in the same persons, to affect the mucous membrane of the nose, mouth, throat, and larynx, or even to spread from the face inwards to these parts, or vice versâ."[139]

Among the cases of œdematous angina related by Dr. Bouillaud is that of a sempstress, who, in consequence of over-eating, became affected with erysipelas of the face, which extended to the neck and scalp. On the fifth day the erysipelatous inflammation was much increased; the throat was painful, deglutition difficult, and respiration accelerated. She died in a state of asphyxia on the seventh day from the commencement of her illness.[140]

The following testimony from three eye-witnesses is of the most positive nature:

"The parts affected with the erysipelatous inflammation were generally the tonsils, uvula, and fauces; but such was the erysipelatous tendency that wounds of all kinds, contusions, simple abrasions, and common attrition of the cuticle, seemed to insure to an individual exposed to the epidemic or contagious cause, an attack of one or other of the three forms. A common catarrhal exposure at this period was sure to lead to erysipelas of the fauces, &c., and the occurrence of one such case in a house, in a very short time led to the communication of the disease, in its several varieties, to most of the nurses and attendants.....Many of the cases which ultimately recovered were tediously and painfully protracted, for instead of the topical affection of the throat subsiding within a week, with a diminution of the fever, this still continued; the erysipelas gradually made progress along the floor of the nares, and soon appeared on the face, spreading over the head, extending often to the back, chest, loins, and nates; giving rise to the necessity of evacuating several large purulent

[139] Alison on Inflammation.—See Note at page 35.

[140] Med.-Chirg. Trans., vol. xvii. p. 164.—Mr. Wood on Inflammation of the Membranous Lining of the Larynx; he also quotes two cases from Latour, and one from Forestus, of a similar kind.

depôts under the fascia of the parts affected; and leaving the patients in a deplorable state of debility."[141]

In the spring of 1824, an epidemic of a peculiar character, which appeared in the Merchants' Hospital, came under the notice of Dr. Abercrombie. Its leading features were a slight erysipelatous affection of the throat; in some the internal fauces were studded with aphthous crusts, in others they were swollen, and in not a few the gums were spongy and the lips encompassed with irritable ulcers..... While the disease was raging in the Hospital, many cases of a similar nature occurred to the Doctor in his private practice. In these the internal fauces were of a dark red, but not swollen, and this redness was interrupted by aphthous crusts. The lining of the nose in general became tender, and discharged a copious morbid secretion, and the inflammation ultimately came out upon the face, assuming the character of common erysipelas.[142]

"We have seen some interesting cases of erysipelas spreading down the throat, and extending up the vagina and the rectum," says a writer in the Medico-Chirurgical Review, and relates the three following cases.

Case 1. A patient in St. George's Hospital had erysipelas of the head and face; on the sixth day the throat became affected, the palate and fauces were suffused with a deep red blush. The patient died in three or four days with symptoms of bronchitis.

"Case 2. A girl in the same Hospital was attacked with erysipelas of the face at a time when it was very prevalent in the wards, after a few days she was seized with sore throat, and the palate was seen irregularly inflamed. This was followed by obstinate vomiting, and dull pain in the epigastrium on pressure. Purging followed, and the patient appeared to

[141] Mr. Ceeley's Account of the Contagious Epidemic Puerperal Fever, at Aylesbury, in the Lancet, vol. xxvii. p. 815.

[142] Pathological and Practical Researches, &c., pp. 200–206.

be sinking under severe gastro-enteritis. About the ninth day after the commencement of the erysipelas upon the face, an erysipelatous blush was observed to surround the anus; from this it spread over the nates, and desquamated. It was spreading on the nates at the time of its desquamation on the face. When the erysipelas had become established on the nates, the symptoms of gastro-enteritis subsided. The patient recovered. This case excited much interest at the time. It appeared to be an instance of erysipelas, extending throughout the whole length of the intestinal tube.

"Case 3. A girl was in the Hospital with a sore on one nympha, after the application of caustic, erysipelas appeared upon the corresponding labium. It spread to the groin and beyond the anus, for a few inches upon the nates, where it stopped. But it also spread up the vagina, which, so far as it could be seen was dry, and presented a distinct erysipelatous redness. The patient rapidly became very low, and complained of dull pain in the hypogastrium, with tenderness on pressure in the pubic region. She had also great pain in micturition. Vomiting succeeded, and in five or six days from the first appearance of erysipelas upon the labium, she died. On examination of the body, the mucous membrane of the vagina and of the uterus was found irregularly vascular; pus was contained in the cavity of the latter. The mucous membrane of the bladder was partly vascular and partly ecchymosed in patches. The peritoneum of the pelvis was inflamed, and purulent matter was found here and there in its recesses. The erysipelas in this case obviously extended from the orifice of the vagina along that canal to the uterus and bladder."[143]

Such direct and unequivocal testimony, by correct and well-informed eye-witnesses, must, I think, be sufficient to convince the most sceptical, that the mucous membranes are liable to inflammation of precisely the same nature which,

[143] Medico-Chirurgical Review for July, 1835, p. 320.

when it occurs in the cutaneous tissue, is called erysipelas. We have proof that the external affection gives rise to that of the throat, and that of the latter to the former; that the affection of the throat sometimes precedes the cutaneous, sometimes the cutaneous that of the throat; that both appear at the same moment upon the same patient, in some cases the affection in the two membranes being continuous from one membrane to the other, in other cases not;[144] and again, sometimes the disease appears successively in the skin and mucous membranes, disappearing in the one as the other becomes affected. Whether, when the disease affects the mucous membranes it shall be called erysipelas, or by any other name, I care not; that it is of the *same nature* as external erysipelas, is all I contend for, and which I think most will be willing to admit sufficient evidence has been adduced fully to prove.

Most medical men must have observed cases, in which patients are in a day or two suddenly destroyed by an attack of inflammation of the throat supervening upon a chronic ulcer of the epiglottis or glottis, particularly when the patient is already in a cachectic state, as most commonly is the condition of these patients; the constitution being very often broken down by syphilis, mercury, and spirituous liquors.

[144] At the present time, I have as a patient, a lady who for the last two years has had such repeated attacks of erysipelas of the face that it might almost be said to be constant; since during this period the integuments have rarely lost the redness. No sooner does one attack subside than another appears. During the period, now about three months, she has been under my care, there has been three paroxysms. The disorder would, I suppose, generally be called erythema, but sometimes it has extended over the whole face, and on one occasion the scalp and neck were also involved, and the febrile symptoms ran so high, that it was a well-marked case of phlegmonous erysipelas.

The inflammation is chiefly seated about the upper lip and nose, and may be seen to extend up the nostrils to the mucous membrane. The inflammation of the latter and of the skin seem to alternate in severity,—when the one is worse the other is better.

There is reason to think these inflammations are of an erysipelatous character, inasmuch as they bear the same relation to phlegmonous inflammation, (croup,) of these parts, under which plastic lymph is effused, as erysipelatous inflammation of other parts of the body, does to acute phlegmon. Sometimes they suddenly become developed in persons who previously had been in a good state of health, but in all the cases which have come under my notice, the patients have been in a bad state state of health at the time of the attack.

Dr. Baillie has related three cases of this complaint which quickly proved fatal; and he seems doubtful if it be not of a contagious character, since the three cases occurred nearly at the same time, and two of the patients had been together.[145]

Farre and Percival have also referred to it, and M. Good has described it under the name of empresma laryngitis.[146] Many cases of the disease are recorded in various periodical publications, both British[147] and Foreign, several of which are referred to by Mr. Wood in his Essay on Bronchotomy, in the seventeenth volume of the Medico-Chirurgical Transactions. Dr. Cheyne has also written upon it, and Dr. Craigie, has a chapter on the affection, under the name of cynanche laryngea, in his Elements of the Practice of Medicine; but by Cullen, if referred to at all, it is confounded with croup under the name of cynanche trachealis.

[145] Three Cases of Inflammation of the Inner Membrane of the Larynx and Trachea, in Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. iii. p. 275.

[146] Practice of Physic, vol. ii. p. 440, 3rd Edit.

[147] Particularly in the early volumes of the Transactions of the Medico-Chirurgical Society, and the Edinburgh Medical and Surgical Journal. See also art. Laryngitis, by Dr. Cheyne, in Cyclopædia of Practical Medicine. Does the affection, which has been called by the French Diphtherite, where the pharynx and œsophagus are principally affected, and which Dr. Abercrombie says was epidemic among the children in Edinburgh in 1826, bear any relation to this disease of the larynx? Probably.

Mr. Hawkins appears to consider these as erysipelatous affections. He says, "The cells of the mucous membrane become gorged with serum, and fill up the aperture of the glottis; the parts having very much the appearance of an erysipelatous affection, to which disease this kind of ulceration really bears considerable resemblance, both in its progress and termination."[148]

The three following cases, witnessed by myself, will point out the appearances seen on dissection. They all occurred within a few months of each other, at a time when erysipelas was prevalent in the hospital, though not to such an extent as to be called epidemic; it is much more upon the character of the symptoms during life, and the appearances after death, than upon the prevalence of external erysipelas, that I should rely as proof of the identity of the two affections.

Case 1.—Hannah Johnson, Æt. 27, a woman of loose habits, had for some time laboured under thoracic symptoms; she had become thin and feeble, and her voice was rough and indistinct; when, one day she complained of sore throat, and difficulty in swallowing and breathing. The uvula and velum palati were red and swelled, as were the tonsils; she also complained of great pain and stiffness about the neck as high as the base of the cranium. These symptoms rapidly increased; great external tenderness came on, and the deglutition became so difficult that she could neither swallow medicine nor any fluid. The voice was quite lost. The pulse throughout was quick and feeble. She sank within forty hours from complaining of the sore throat. On *post mortem* examination, the cellular membrane of the neck, between the muscles, and along the larynx and pharynx up to the base of the skull, was infiltrated with sero-purulent fluid, without induration from lymph. The mucous membrane about the chordes vocales and arytenoid cartilages, was much injected and

[148] Hawkins on Syphilitic Sores of the Larynx, in London Medical and Physical Journal, vol. xlix. p. 275.

thickened, but there was no purulent deposition under it. The lungs contained some cavities of long standing.

Case 2.—Caroline Pyke, Æt. 20, a girl of the town, affected with syphilitic sores. She was in a state of ill health, with some hoarseness of voice, though she did not complain of any pain about the throat, nor was it ulcerated. After being in the hospital a few days, she was seized with symptoms similar to the previous case; the velum palati and uvula became swollen and excessively red; the voice quite lost; and the breathing more and more difficult, but without any croupy noise. She died within forty-eight hours from the first complaint about the sore throat. *On inspection* no appearance of disease was found in the cellular membrane external to the larynx. The mucous membrane of the pharynx and larynx, particularly about the epiglottis, was elevated, thickened, and of a light yellow colour, owing to the infiltration of purulent fluid into the sub-mucous cellular tissue. This effusion was most abundant about the epiglottis, and did not extend so low as the cricoid cartilage; but beneath this point, down to the bifurcation of the trachea, the mucous membrane showed considerable vascularity with slight ecchymosis. The lungs were engorged and easily torn.

Case 3.—Joseph Cooper, Æt. 50, was first seen in August, 1832, (in Guy's Hospital, as also the two preceding) at which time he laboured under partial paralysis of the muscles of the right side of the face and neck; there was also imperfect vision, with ptosis on the same side, the degree of which varied; he complained of much pain in the head, which he attributed to a fall he had about five months before. He also stated, that about a month after this fall he was knocked down in a drunken scuffle, when he fell upon his pipe, which passed into the right eye, since which time it has been in the condition above mentioned; but as there was no mark of any wound, and he could not tell whether the pipe was broken or not, the mischief was rather attributed to the previous fall. He was twice

bled, blisters were applied to the back of the neck, and blue pill with aperients given. The mouth was affected, and he was somewhat improved. On October the 4th, he complained of sore throat, with some difficulty in swallowing. The whole pharynx and palate presented a diffused red injected appearance, and was a little swelled; there was no difficulty of breathing. During the night he became restless and could not sleep; early on the morning of the 5th his deglutition was so difficult that he refused some tea, saying he could not swallow it, although very thirsty; about half-past seven a. m., his breathing became suddenly much worse, and at eight o'clock he as suddenly died.

Inspection.—The mucous membrane of the pharynx and larynx was injected and raised by a purulent infiltration of the sub-mucous cellular tissue; this was particularly evident about the rima glottidis; the left side was much more vascular than the right. The mucous glands were enlarged as though from previous disease. There was not the least appearance of lymph. Membrane of the trachea healthy. On examining the base of the skull a piece of tobacco pipe, about an inch long, was found in the cavernous sinous. The pipe had evidently passed through the orbit and the lacerated opening, at which point it had broken, as none was found in the orbit. The globe of the eye had not been injured. The dura mater had not been penetrated, but ulceration had commenced, and a considerable fungus-like granulation had formed upon it, at the end of the broken pipe.[149]

[149] These appearances in the head, though not immediately connected with the subject, are so interesting, that I have thought proper to relate them as briefly as possible. No cases appear better adapted for the performance of bronchotomy than these, as death is rather caused by the mechanical closure of the glottis, than by any defect in the organs of respiration, which renders them incapable of performing the vital act of decarbonizing the blood, and if air can by any means be admitted in sufficient quantity, until the acute stage has passed, and the effused fluid been absorbed, there seems to be nothing to prevent the parts from being able to perform their functions.

DIFFUSE ARACHNITIS.

How far some forms of arachnitis partake of an erysipeloid character it is difficult to determine. If, however, we judge from analogy, we should be inclined to admit the fact. If it be proved that sometimes the inflammatory action in other serous membranes is of this nature, probability would be in favour of the supposition that this membrane also may be affected in the same manner. Certain it is that, like the other serous membranes, the arachnoid is subject to the development of two forms of inflammation. In the one, there is intense excitement; a full, or more commonly, a hard incomprehensible pulse, frequent, but not excessively accelerated; and all the symptoms, both general and local, partake much of the nature of acute phlegmonous inflammation, as it occurs in other serous membranes, and require the same active depletion by bleeding and other antiphlogistic measures. In the other, the delirium is not attended with the same ungovernable excitement; there is a depression of the mental powers; the mind is rendered dull; in the former it is rather a perversion than a loss of mind;[150] the pulse is rapid, neither full nor hard, or at least, if full not hard, but generally with a short

[150] I am fully aware that it may be said delirium is not a sign of inflammation of the membranes of the brain, but rather of the surface of this organ itself; that we must judge of the organ affected by the function disturbed, and that as the intellectual functions are connected with the surface of the brain, and not with the arachnoid membrane, delirium is to be regarded as indicative of disturbance in the former. This is probably perfectly true, but then it is equally applicable to both forms of inflammatory action, consequently it does not militate in any way against what is stated in the text. The vessels of the arachnoid, pia mater, and surface of the brain, are so continuous, the functions of the parts are so connected, and the contiguity so great, that though the principal mischief be in the arachnoid, the surface of the brain is, almost necessarily, more or less implicated, and vice versâ.

hurried beat, which may easily be compressed; and all the secretions are more deranged than in the former case,—especially the abdominal. In the former kind of inflammation the secretions are often suppressed, rather than excessively perverted, in the latter the perversion is the more prominent of the two; indeed, vomiting and diarrhœa are frequent accompaniments. The inflammation is much diffused, the effusion is more widely spread in the sub-arachnoid cellular tissue or pia mater, and it is of a sero-purulent nature. There is in the phlegmonous form, intense pain in the head, morbid sensibility to light, a contracted pupil, and much heat of the scalp; in the erysipeloid inflammation none of these are the usual prominent symptoms. The kind of persons and constitutions in which one or other of the forms appear, are marked by the same signs as point out predisposition to the development in other tissues of one or other form of complaint.

Alibert evidently inclines to the opinion, that the membranes of the brain may be affected by erysipelas, which he terms "Syriasis ou érysipèle cérébral."[151]

The extreme liability for the arachnoid or pia mater to become involved, when erysipelas attacks the scalp, is well known; the affection of the arachnoid being generally in direct proportion to the extent of disease in the scalp. It might be argued that when erysipelas affects either the peritoneum or the pleura, the effusion is found within the membrane; on the contrary, when it attacks the arachnoid the effusion is not from its free surface, but is found within the meshes of the pia mater.[152] This, however, is not peculiar to this form of inflammation, it depends upon the loose texture of the sub-serous cellular tissue. Whenever the serous membranes are intimately connected to the parts which they cover,

[151] Alibert, p. 16.

[152] The pia mater should not be regarded as a distinct membrane, it is only sub-arachnoid cellular tissue, in which the cerebral vessels minutely divide before entering the substance of the brain.

by a small quantity of dense cellular membrane of a close texture, the effusion is from the free surface; on the contrary, if by a large quantity of loose yielding membrane, the effusion is poured into this, as is well shown within the head. Upon the surface of the brain the effusion in arachnitis is from the attached cellular surface of the membrane, while within the ventricles, where there is very little cellular tissue, it is from the smooth free surface.

The frequent deposits of purulent fluid in various viscera, after accidents to the head, is well known. I believe they will never, or rarely, be found to follow accidents to the head, unless preceded by diffused arachnitis;[153] whether there may not also be phlebitis, and whether this latter be caused by the former, or the former by it, is not material, on account of the connection between erysipelas and inflammation of the veins. The great disposition to the generation of pus, "une véritable puogénie," as Dupuytren calls it, is one of the characters of erysipeloid inflammation, in contradistinction to phlegmonous; where, if matter be formed at all, it is only after a lengthened, and, so to speak, difficult process, and is confined to the original spot.

The symptoms of arachnitis will, of course, vary much during life, from the extent to which the cortical or medullary portions of the brain are involved, by which the symptoms are often much masked. If the former participate in a slight degree there will be more excitement, if the latter be more involved, or there be considerable effusion, then stupor is the most prominent symptom. That the membranes of the head, in common with those of the abdomen and chest, are affected, in severe cases of erysipelas and puerperal fever, is

[153] In every case which I have witnessed of injury to the head, followed by these purulent infiltrations in the lungs or liver, on post mortem examination, widely spread arachnitis has been found, and an attentive examination of all the published cases with which I am acquainted, has shown that in each the same is stated, either in direct terms or clearly by implication, to have occurred, whatever other morbid appearances might exist.

certain. In all the cases where mention is made of the condition of the head in the post mortem examinations of those who have died of puerperal fever, morbid appearances were found; though it is to be regretted, that in very many instances, the head appears not to have been examined, from, I imagine, the supposition of the disease being more confined to the trunk. In those who died in the epidemic puerperal fever, at Vienna, in 1819, we are told that in the head the organs were always turgid with blood, and that the ventricles generally contained more than the usual quantity of serum.[154] So also M. Dance found the same appearances in those who died at Paris in 1828–29, but neither he nor M. Tonnellé, although they have given most minute accounts of the abdominal and pelvic viscera, seem to have bestowed much attention upon the head.

DIFFUSE INFLAMMATION OF THE VEINS AND LYMPHATICS.

At first sight these two affections may appear to possess little in common with erysipelas, and yet I think there are many circumstances which tend to show that in reality there is a close connection between them. That the veins and lymphatics, like other structures, are liable to two forms of inflammation, is, I think, supported by repeated observation: in the one the local mischief is limited, and attended by the symptoms of phlegmonous abscess; in severe cases the vessel is closed to a limited extent by a fibrinous deposit, the constitutional symptoms being of a synochial type; in the other the mischief spreads far from the point where it originally commenced, the phlegmonous character is wanting, the vein is not closed, or only imperfectly so, by fibrinous deposition, and the general symptoms are of the typhoid or

[154] Edinburgh Medical and Surgical Journal, vol. xxii. p. 84.

adynamic kind. These distinctions are generally admitted.[155] The first is so common that it is daily met with, and is rarely a dangerous complaint. The limited and circumscribed abscesses in the bend of the elbow after venesection, are often instances of it; the cure of varex by ligature or caustic; the suppuration of a neighbouring lymphatic gland, which so often ensues from a neglected scratch of the hand or foot, are illustrations of it. The diffuse form is happily not so common; it is most frequently fatal. Its nature was first clearly pointed out by John Hunter,[156] since which attention has constantly been called to it by the publication of essays and cases by Abernethy, Travers, Duncan, Lawrence, Earle, Hodgson, Lee, Arnott, Dance, Velpeau, Andral, and many others. These cases are dispersed through so many periodicals, that every one who has not met with them himself, must be perfectly familiar with the appearances by description. The reasons which induce the supposition of similarity in nature between this form of phlebitis (and I may add diffused inflammation of the lymphatics, for in the majority of cases these and the veins are affected at the same time, and if they are not, there are no certain symptoms by

[155] Guthrie on Gun-Shot Wounds, and Travers on Wounds and Ligatures of Veins, in part i. of Surgical Essays by Cooper and Travers.

An injury to a vein is, I believe, now looked upon in a very different light from what it was a few years since. B. Bell speaks of wounds, whether incised or lacerated, of even of the largest veins, as mere trifles, and as "attended with less danger than wounds of arteries," and does not hesitate to recommend, if a little lint and moderate pressure do not stop the bleeding, the application of ligatures, which, he says, "when properly applied, neither fail in their effects nor produce any material inconveniency,"—advice which, I apprehend, is now never followed, until the absolute necessity of it is evident; the opinion of the profession, with regard to the relative danger of wounds of veins and arteries, being the reverse of Bell's, in consequence of veins not possessing the same aptitude to adhesive circumscribed phlegmonous action as arteries, but, on the contrary, a much greater to diffuse inflammation.

[156] Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i.

which the one can be distinguished from the other,)[157] and erysipelas, are,

I. The facts of the gradual merging of phlebitis from the limited into the diffused, in which successive changes the symptoms and effects bear the strictest analogy to the gradual progression from phlegmonoid to erysipeloid inflammation.

II. The constitutional, and not unfrequently the local, symptoms of phlebitis and erysipelas are so similar, that the best observers have been mistaken in their diagnosis. Thus, Dr. Duncan has related at length a case of phlebitis, which he thought to be phlegmonous erysipelas, and treated it as such; it was only after death, on examining the parts, that he discovered it to be phlebitis.[158] And if we turn to the cases related by the same gentleman, under the denomination of diffuse inflammation of the cellular texture, it will be apparent that in some the veins were the parts in which the mischief primarily occurred, and that they form well-marked instances of what others regard as pure phlebitis. What is also to be remarked is, that where the disease arose under precisely the same circumstances, as from venesection, and was attended by the same symptoms, after death the vein in one case was found to be principally affected, in another there

[157] Dictionnaire de Medicine et de Chirurgie Practiques, tome xi.; Lymphangite, by Bouillaud.

In some Lectures by Velpeau, on Erysipelas, published in Nos. 663 and 664, (August, 1840,) of the Medical Gazette, he attempts to discriminate between the varieties of erysipelas, and also to point out the distinctive marks between these and phlebitis, and inflammation of the absorbents, or angioleucitis, which he regards as dissimilar from erysipelas, and not of so serious a character. But I must confess his lectures have much disappointed me; they do not contain a very clear account of the disease, and certainly in no way tend to point out the diagnostic marks between the affections. He says that many of the pretended cures of erysipelas have been only of angioleucitis; however, after dwelling upon the characteristic signs of the diseases in summing up, he confesses that "in practice we generally meet with them combined."

[158] Edinburgh Med.-Chirg. Trans., vol. i. p. 439.

was no inflammation of the vein, no thickening of its coats, or effusion into it of coagulated lymph or pus,[159] but instead there was diffuse cellular inflammation; so also in another case the vein was perfectly healthy, and appeared not to have participated in the slightest degree in the surrounding disease; its internal surface was white, and its tunics sound and healthy. The same discrepancy will be found in the cases related by other observers. Mr. Lawrence has described similar cases as instances of phlegmonous erysipelas,[160] and Mr. Earle as instances of cellular inflammation.[161] Dr. M. Good has thought the "pathognomonic criteria" are so wanting in phlebitis and affections of the lymphatics, that he has on this account purposely omitted these disorders in his nosological classification, feeling that to have admitted them would have been to make an empty display, and a verbal subdivision unattended with any real use; and admits the difficulty in separating them from that form of diffuse inflammation which follows wounds received in dissection.[162]

"Aprés vous avoir démontré par un example, dit M. Dupuytren, les suites fâcheuses d'une saignée faite par une main inhabile, reprenons la série des autres causes du phlegmon diffus. La ligature d'une veine peut aussi donner lieu à cette maladie, et dans ce cas comme dans celui, qui précède, la veine est ou n'est pas enflammée; quoi qu'il en soit, l'inflammation diffuse peut occuper toute l'épaisseur du membre, ou suivre le trajet du vaisseau, et alors elle n'est diffuse que dans le sens de la longueur.

"Le phlegmon diffus est la plus fréquente des maladies déterminées par l'application d'un principe morbide, sur la

[159] Edinburgh Med.-Chirg. Trans., vol. i. p. 470; cases 1 and 2; see also 3, 4, 5, 6, and 7.

[160] Lawrence in Med.-Chirg. Trans., vol. xiv.; cases 22 and 36.

[161] Earle in London Medical and Physical Journal, vol. lvii.

[162] Good's Practice of Physic, vol. ii. p. 297.

peau, ou sur le tissu cellulaire; accident auquel sont exposés tous ceux que font des ouvertures de cadavres, ou qui se livrent aux dissections. On l'a vu dans quelques cas n'être accompagné ni d'inflammation des vaisseaux lymphatiques, ni d'engorgement des glandes de l'aisselle. Néanmonis l'engorgement de ces organes, la rougeur de la peau dans le trajet des vaisseaux lymphatiques, et une douleur plus ou moins vive aux mêmes régions, sont les premiers symptômes que l'on remarque le plus ordinairement."[163]

Dr. Alison declares his belief in the identity of phlebitis and erysipelas. He says, "From the frequency of inflammation of the veins, in connection with the diffuse inflammation of the cellular membrane, it may be presumed that their lining membrane is liable to the same form of inflammation."[164] "And it may be strongly suspected, that the more rapidly fatal cases of inflammation of the veins, are instances of erythematic and often contagious inflammation, tending to purulent effusion only; some of them certainly producing no fibrinous incrustation on the inside of the vein affected."[165]

The opinion of Dr. Carswell is equally decided. He says, "When erysipelas attacks the sub-cutaneous cellular tissue of the extremities, and although it may at first be limited to a very small space of the fore-arm, for example, it sometimes spreads with great rapidity over the whole of that part of the limb, extends upwards to the shoulder and neck, and descends along the back, breast, and side. Throughout the whole of this course the muscles, blood-vessels, nerves, and tendons, are laid bare, and float in the putrid cellular tissue, and in the serosity, pus, and blood, that are effused during the violence of the inflammation. Such is the state of the cellular tissue, not only in erysipelas phlegmonodes, when it occurs as an idiopathic disease, but also when it succeeds to slight

[163] Leçons Orales, Phlegmon Diffus.

[164] Library of Practical Medicine, vol i. p. 86.

[165] Idem, p. 95.

wounds or punctures of the arm in blood-letting, and the fingers in dissection. In such cases the cellular tissue appears to be the primary seat of the inflammation, which may either extend in the manner we have described, or be confined to the cellular sheath of the blood-vessels. In the latter case we have frequently what is called phlebitis; the venus circulation is interrupted; the blood ceases to circulate, coagulates, and nutrition not being maintained by the formation of a collateral circulation, gangrene of the extremity follows as an inevitable consequence."[166]

III. The great disposition there is in erysipelatous inflammation for the deposition of pus in different organs, without any manifest disorder in their functions, as well as for distant parts of the body to exhibit inflammatory action and the formation of imperfect pus, has already been alluded to; and it is well known that this same tendency is, more than any other sign, to be relied on as characteristic of the presence of phlebitis, as the cases related by Lee,[167] Arnott,[168] and many others, sufficiently show. Now although the assertion of Ribes and others, that external erysipelas essentially consists in inflammation of the cutaneous and sub-cutaneous veins, and that in all cases they contain pus cannot be admitted as true, inasmuch as other observers, as Rayer and Velpeau, have often not been able to find it;[169] yet is it certain,

[166] Carswell on Mortification, Cyclopædia of Practical Medicine, vol. iii. p. 120.

[167] Med.-Chirg. Trans., vols. xv. and xvi.

[168] Idem, vol. xv, part 1, Arnott on the Secondary Effects of Inflammation of the Veins.

[169] "Suivant moi, ces dispositions des veinules et des artérioles ne sont point constantes: je n'ai pas trouvé le plus légère trace d'inflammation de ces petits vaisseaux dans plusieurs érysipèles que j'ai disséqués. D'ailleurs, ces observations de M. Ribes ne peuvent être applicables qu'aux veines sous-cutanées; les veinules du réseau vasculaire et des papilles de la peau sont trop ténues pour qu'on puisse constater leur inflammation. Or, l'altération des veines sous-cutanees elle-même n'est pas constante; et le pus qu'elles con-

that not unfrequently the veins do contain pus; and farther, as the cases of Dr. Duncan, just referred to, prove, we may have the symptoms of phlebitis present and yet no pus be found in the veins, or their tissue in any way altered. These facts are sufficient to show the connection between the two forms of disorder, and that both depend upon some more general cause than is yet described. So also, although the opinion of puerperal fever being neither more nor less than inflammation of the uterine veins is not correct, the very frequent existence of it is a confirmation of the connection and similarity in nature in the two, more especially as the symptoms in puerperal fever are of the same character, whether the veins be inflamed and contain pus or not.

IV. The development of erysipelas and diffuse phlebitis both depend upon constitutional causes, more than the imme-

tiennent, dans quelques cas, peut avoir été absorbé.....Si j'en juge d'après mes propres recherches, la phlébite complique plus souvent les inflammations du tissu cellulaire que celles de la peau."—Rayer's Traité des Maladies de la Peau; art. Érysipèle, par. 230.

"In our own times, the venous capillaries of the skin have been fixed upon as the seat of inflammation. This opinion has been defended in France by M. M. Ribes and Cruveilhier; in England by Dr. Copeland. I have often minutely examined the skin in persons who had died of this disease, but never found any appearance which could warrant the supposition; nor do the arguments brought forward in favour of this opinion appear very conclusive. How, indeed, is it possible to prove that the inflammation exists in the veinous capillaries, when it has never been possible to examine them. M. Ribes has found small veins underneath the skin filled with pus; but this was not owing to erysipelas, but to phlebitis followed by absorption of pus. M. Cruveilhier also speaks of having seen veins underneath the skin filled with pus; but he has never remarked them in the cutis vera. When we consider that erysipelas often covers a surface of several square feet, it scarcely can be allowed that the capillaries alone are inflamed. It is much more probable that all the tissues which enter into the structure of the skin, the nervous, the adipose, the cellular, the vascular, are simultaneously attacked. Indeed, no symptom seems to indicate that one of the various layers into which the skin has been divided is affected sooner than another; they are all the seat of inflammation, which often extends, as we have seen, to the sub-cutaneous cellular tissue."—M. Velpeau on Erysipelas in Medical Gazette, vol xxvi. p. 814.

diate exciting local cause; inasmuch as both may arise idiopathically; and although inoculation with matter generated under the action of analogous complaints has a great tendency to induce one or the other form of disease; yet, except in a few instances, as the bites of the more poisonous animals, they are not produced in an equally decided form in all cases, even where the immediate exciting causes are identical; as in the instance of two persons being inoculated while examining the same body; and farther, precisely the same derangements and disorders of the system dispose to both complaints.

V. The same condition of atmosphere conduces to erysipelas and diffuse phlebitis. Thus, Dr. Duncan's cases occurred at the same time, and in the same place, as his other cases of cellular inflammation, and when ordinary erysipelas was very prevalent; and the three first cases related by Mr. Arnott all occurred within seven weeks of each other, in Bartholomew's Hospital.[170] Puerperal fever, as I have fully shown, prevails when other forms of erysipelas are rife, produces them and is produced by them.

VI. In both forms of the complaint there is the same tendency for the serous membranes to become affected. It is very rare after death from diffused phlebitis, not to find the pleuræ or peritoneum affected, often both, but especially the former.

VII. One form of complaint is very liable to produce the other; some of the worst cases of mischief following wounds, have been where the injury has been received in the inspection of those who have died from phlebitis; not only uterine, but of the veins of the arm, occurring after venesection.

VIII. There is a strong resemblance in the appearance of blood after death, from these complaints. The blood is

[170] Erysipelas was very prevalent in the neighbourhood of Plymouth Dock, when the cases of Irritative Fever, and Dr. Bell's death from puncture, occurred.

generally semi-fluid, much altered in characters, and the lining venous membrane, even to the heart, is often stained of a deep dark red colour.[171]

IX. The treatment, both local and general, is the same.

It seems highly probable, if not absolutely certain, that in phlebitis, erysipelas of the integuments, and other extensively diffused inflammations, some change is induced in the blood, which we can only partially recognise by its appearance and effects, and that in all these cases the change is of the same nature. For I think, when we consider how identical the general and local symptoms of disease may be, and yet after death the varying condition of parts found; how much symptoms during life may vary, the appearances after death being nearly the same; and how one form of diffuse inflammation seems to give rise to others, it must be admitted as certain, that what we are frequently in the habit of regarding as the immediate cause of a disease, is in reality only a remote one, or possibly only an effect of some preceding and more important cause. We see changes in particular organs and separate tissues, and immediately suppose the diseases to be essentially distinct from each other; yet there is nothing improbable or irrational in the idea, that they are only instrumental in affecting the general symptoms by some farther change they may produce, according to the extent to which these organs are involved, or the influence their functions have upon the system in a healthy condition; the local changes themselves being the sequents and consequences of some prior alteration, which has been effected upon the system generally, or upon the part itself. This change will probably be greater and may be so much the more readily developed, in proportion to the connection the part has with the nerves or the circu-

[171] "The internal surface (of the heart), particularly the valves, chiefly of the right side, were of a deep red, often of a black colour, the mass of blood being generally fluid."—Account of those who died in the Puerperal Epidemic in Vienna, 1819, in Edinburgh Medical and Surgical Journal, vol. xxii. p. 84.

lating fluids. Thus, in the case of the veins, if there prevails but a very slight tendency to this diffuse inflammation, it may be easily induced, as by venesection, which, if this tendency had not existed, would have been followed by no ill effect; or the cause itself may be so powerful that, under all circumstances, and in all conditions of constitution, wherever it may be applied, the most violent and fatal diffuse inflammation shall be immediately set up, as from the bite of the rattle-snake; while, on the contrary, it requires very great constitutional aptitude towards the development of this form of disease, in order that it may be excited by the sting of a hornet or scorpion, a contused or a lacerated wound. So that I imagine the presence or not of pus in the veins, should not be regarded as determining the existence or not of erysipeloid diseases; the complaint may in reality be the same, whether pus be present in them or not; if it be present the disease will then be the more rapid and fatal, because it becomes a secondary cause, continually augmenting the primary disorder, by the immediate and direct effect it has upon the blood circulating within the vessels, and with which it is carried to all parts of the body. This secondary effect will be much the same, whether the pus enter the veins by absorption by the veins themselves, or by the lymphatics, or whether it be actually formed within the veins or lymphatics. There can be little doubt that pus exists in the veins from both causes. It is perfectly true that pus, when confined in a circumscribed cavity, may be a bland innocuous fluid, but I am by no means disposed to agree with Mr. Travers,[172] that it would retain this harmless character when mixed with the blood; on the contrary, there seems from recent experiments, reason to suppose that the admixture of pus with the blood is always attended with the most serious disturbance. How far it may be the same purulent matter which has been mechanically

[172] Mr. Travers on Wounds and Ligatures of Veins, in Cooper and Travers's Surgical Essays, part i. p. 286.

mixed with the blood, that is deposited in the different organs, as was formerly commonly supposed, and which opinion Andral still retains,[173] or whether, as Hunter supposed, it be a formation de novo,—the re-deposition of absorbed matter being impossible,[174] interesting as the question is, this is not quite the place to enquire into at any length: certain it is, that whenever pus does become mixed with the blood, there exists a great disposition for matter to become disseminated through every part and tissue of the body; and, at the same time, for a typhoid depression to be evinced.

Whether this view of disease, which would tend to classify and unite under groups congenerous affections, be correct or not, this seems to be proved, that in perfectly orthodox and well-marked cases of cutaneous erysipelas, pus is sometimes found in the veins and absorbents of the inflamed part, at others it is not found, and that there are no symptoms by which, during life, the two conditions can be distinguished from each other; that in other cases which have, during life, possessed all the symptoms of erysipelas, so as to lead the best observers to treat them as such, after death the veins have been found to be the seat of disease; and in other cases where, during life, the symptoms have been the same, in some the veins have been principally affected, in others they have been healthy; and again, in puerperal fever, in many instances phlebitis prevails, while in other cases it is not found to exist, the symptoms being the same during life, this knowledge being only with certainty arrived at after death; from which it may, I think, be fairly and legitimately concluded that the essential difference between the physiological and pathological conditions, which constitute health and disease, depend upon changes which are yet not recognised, but which probably are more general than is commonly supposed. That they do not solely nor primarily depend upon

[173] Andral's Précis d'Anatomie Pathologique, tome i. p. 405.—Paris, 1829.

[174] Hunter on the Blood, &c. 4to. p. 360.

the tissue or function of the part where the local action may happen more immediately to be thrown, is certain, as the restriction of erysipelas to the skin implies.[175]

There are two other forms of disorder which some may think to be of the same nature as erysipelas—Phlegmasia Dolens and Hospital Gangrene, and upon which it may be expected that something should be said.

[175] In stating that the primary changes in these diseased actions occur rather in the blood than in the solids, it is necessary to bear in mind the part which the nervous system plays, and also the question, whether impressions must not in all cases be originally made through it. The blood itself may be acted upon after its formation and while circulating in the vessels; the food may not supply the necessary and essential elements; or there may be error in the power of assimilation during the process of elimination, so that the elements of which the blood is composed are not perfectly compounded, and it thus enters the system in a condition of imperfect organization, and consequently neither itself possesses perfect vitality, nor is capable of maintaining perfect vitality in all the parts of the body to which it is distributed as under the influence of the nervous system it is destined to do. It is also worth consideration whether it be not possible that the healthy condition of the blood may not sometimes be impaired, in the act of respiration. Besides the composition of the atmosphere and its barometrical condition, it is certain changes take place in it which, though not recognisable by our means of scientific investigation, are made evident by the spread of epidemics and the more perceptible effects upon many of the inferior animals. It is, then, not improbable, that some influence may be thus impressed upon the blood by various qualities of the atmosphere, altogether independent of the due oxydization and decarbonization of it, by which are induced changes in its vivifying and re-animating properties *(possibly electrical)* though in the present state of our knowledge inappreciable, except by their effects, but upon which nevertheless its physiological and pathological conditions depend. In pointing out the importance of attending to the condition of the fluids, which have, I apprehend, been of late years too much overlooked, let me not be understood as detracting in any manner from the pre-eminent importance of the nervous system, as well organic as voluntary, both in health and disease; but as wishing to show that if (even in diseases of a typhoid character, where the nervous system is thought to be most affected) it is primarily involved, it may be only indirectly so, and the more important features in the derangement of its functions may in reality depend upon it not being supplied with perfectly healthy blood, without which we know its functions are immediately impaired.

That phlegmasia dolens depends upon inflammation of the veins, or of these and the lymphatics conjointly, is, I think, now demonstrated. What has, until lately, been regarded as the disease,—namely the swelled leg, is in reality not so, being merely an effect of the obstruction in the circulation. That this obstruction, in at least the great majority of cases, depends upon inflammation in the pelvic vessels is certain, but then this inflammation is usually of the phlegmonous kind, under which plastic lymph is thrown out, and the vessels are thus plugged up, so that they no longer, at least for the time, form part of the general circulatory system. Consequently, the affection, in well-defined cases, is rather to be regarded as an example of phlegmonoid inflammation of the veins than of erysipeloid, as all the symptoms, both local and general, and the effects of remedies show. There are, however, instances where, either from the condition of the *patient* (two of the best marked cases of phlegmasia dolens, which I have seen, occurred in *men*) or from improper treatment, lymph is not poured out, or only such as possesses the plastic character in a low degree, when the vessels remain more or less patulous. In these cases the inflammation is liable to become diffused, and imperfect pus to be generated; the general symptoms will then tend towards an adynamic type, and the whole disease partake of an erysipeloid character.

With regard to hospital gangrene, I have seen too little of it to be able to form an accurate opinion; and the opinion of those who have seen the most of it, is so contradictory, as to render it very difficult to judge of its real nature. While some maintain, that the local affection always precedes the general symptoms; and also, that a patient may have two sores, the one of which shall exhibit in a high degree the destructive action, the other at the same time remaining healthy: other authorities tell us the general symptoms always precede the local. On the one hand many, as Dupuytren

and Delpech, who have seen much of the disorder, pay but little attention to the general treatment, and rely almost exclusively on the topical; on the other, many, whose opportunities of seeing the complaint have been at least equal, consider the general treatment by far the most important. It would appear, that rapidly spreading phagedenic ulceration, as well as gangrene, forms one of the chief diagnostic marks of this complaint, which certainly is not characteristic of erysipelas in any of its forms, except what sometimes occurs to a cicatrising wound, the result of erysipelas. With this exception, there is much in the circumstances under which hospital gangrene is most rife, the mode of its propagation, and its accompanying phenomena, both local and constitutional, besides the fact of the two disorders prevailing at the same time, which would induce a strong suspicion of its relation to erysipelas. The greater attention now paid to hygenic considerations, has so diminished the appearance of hospital gangrene, that it but rarely comes under the notice of the mere civilian, at least in a severe form, or as an epidemic; and in these piping times of peace is not very often presented to the military surgeon.

The malignant pustule which has often prevailed in certain parts of the continent, as in Germany and France, is but little known in England. There appears reason, however, from the accounts given of its mode of propagation, its symptoms and effects, to think it is closely allied in its nature, to some forms of erysipeloid disease, and that its development depends upon septic conditions in the fluids, not dissimilar from those found to exist in other spreading inflammations. That it bears a very close resemblance to diffuse cellular inflammation is certain. It seems to be intermediate between diffuse inflammation of the cellular membrane and carbuncle; as this is between the pustule maligne and healthy phlegmonous inflammation.

Having dwelt so long upon the various forms of erysi-

pelas, in the subsequent pages I shall only allude to them incidentally; because, if they be of the same nature, the same general indications of treatment will be requisite, of course varying its application according to circumstances, such as the texture, locality, functions, extent, and connections, of the affected part; to enter upon which would involve so many considerations, that distinct essays would be required to do them justice; a full appreciation of which, however, is necessary to the successful practitioner. The external forms of erysipeloid disease are at present what are under discussion, so far as the causes and treatment are principally concerned, but to explain the nature of which it has been necessary to enter into the foregoing statements.

CAUSES OF ERYSIPELAS.

The causes of Erysipelas may be divided into two distinct classes; those which are attached to the individual himself, and those which are extrinsic to him, and belong to the circumstances by which he is surrounded; as the atmosphere he breathes, the locality he is placed in, &c.; according as one or other of these causes operates, or the degree on which they both act, so will the disease assume different characters. If the first alone, it will be sporadic; if the second, epidemic or endemic; and if the two are combined, contagious; for it is probable that in no case will the disorder, even when it is epidemic, seriously affect those who are not predisposed to its attacks. The predisposition may, however, be of a more lasting kind, as from some continued disorder; or of a very temporary character, as from an improper diet, over-eating or drinking, too long abstinence, &c. It is constantly seen in every epidemic, that great numbers of persons are slightly affected, and among those who are placed in precisely the same circumstances, we see every grade of illness, from the most trifling to the most fatal; a variation which much depends upon the individual's tendency or aptitude towards the affection. Every one will recollect how this was illustrated during the prevalence of cholera, also of influenza, and other epidemics. Even those who are in a great measure able to set a complaint at defiance, are, if much exposed to it, in some measure brought under its influence. Thus, disorders of the bowels were unusually prevalent when epidemic cholera was

rife. During the epidemic season of puerperal fever we are told by Mr. Hey, "lying-in-women were unusually subject to after-pains, and those of a more violent kind than ordinary, so much so, that in some few cases they were not easily distinguishable from a slight attack of puerperal fever."[1] And when erysipelas is epidemic, the slightest wounds are apt to become troublesome, as every surgeon knows.[2] On the contrary, some persons are so liable, by the condition of constitution, to particular disorders, which usually only prevail epidemically, that these complaints became developed at times when we might think external circumstances least favourable to them,[3] and a disease having been thus originated, may so affect the atmosphere, that a second person who is exposed to it, and who, had the first not been affected, would not have suffered, may be seized with the same disorder in consequence.

In many cases it seems to be impossible accurately to define the cause of erysipelas. In some persons there is so

[1] Hey on Puerperal Fever, p. 30.

[2] As was seen in Birmingham and Aylesbury, as related by Mr. Ingleby and Mr. Ceely, in the papers before referred to.

At Charenton, near Paris, M. Calmeil says, during certain years erysipelas is astonishingly multiplied among the insane, insomuch that it is quite necessary to suspend all revulsive applications, (médications révulsives) which form so important a part in the treatment of insane persons. "The application of a seton, a moxa, or a blister, is followed by erysipelatous inflammation; a superficial wound of the skin occasions it; the slightest blow, the opening a vein, or the application of leeches, occasion erysipelas. This year (1828) has been singularly remarkable in this respect; for six months the infirmaries have been crowded (encombrées) with erysipelatous insane."—Dict. de Med. et de Chirg. Prac. vol. vii. art. Erysipelas, p. 479.

During three months in the winter of 1839-40, in M. Blandin's wards at the Hôtel Dieu, an attack of erysipelas followed every operation, even the simple puncture of a lancet.—Observations on the Surgical Practice of Paris, by Dr. Markham.

[3] One of the worst cases of true cholera which I have seen, occurred in a drunken stone mason, in September, 1835, when no other cases were known in the neighbourhood.

great a predisposition to it, that it appears upon exceedingly slight departure from the strictest rules. The least error in diet, too much exercise or excitement, any depression of mind or body, a common cold, or any slight and trivial external injury, as a pin scratch or leech bite, is sufficient to call forth an attack; even the previous existence of the complaint seems to induce a liability to a repetition of it. I have known an elderly lady, in the course of rather more than three months, have four seizures of erysipelas; the last, a most severe one, involving the whole head and neck, attended with delirium and great fever, was apparently induced by the exhaustion and shaking of riding some miles in an uneasy carriage before she had perfectly recovered from the previous attack. And at the present time I am attending a lady who, during the course of two years, has had several attacks, some of them slight, affecting only one side of the face; but on one occasion she was very seriously ill, the whole head and neck was involved, and there was much fever. In these cases the predisposition appears in a great measure to depend upon an habitual irritability in the mucous membrane of the alimentary canal, with a similar condition of the skin, both of which are necessary to constitute a predisposition to the disease. Upon what particular condition this irritability of the skin depends, it is impossible to say, since it is not confined to those who are of fair or dark complexions, or to those who are commonly said to have a thick or thin skin; though perhaps those who are fair, and whose skin is vascular, are on the whole most liable to erysipelas. That the gastric irritation depends upon, or is intimately connected with, some derangement of the biliary system, is quite certain; for I believe in no instance is any one subject to habitual attacks of erysipelas, unless they are also liable to derangements of this system; and in all cases of erysipelas, whether idiopathic or not, there is considerable disorder in the functions of the liver and stomach. Females are more liable to repeated attacks of

erysipelas than males; this probably arises from their skins being more tender and irritable, as well as the system generally being more excitable, and having less power than that of males. At the periods of the catamenia women are supposed to be more liable to erysipelas than at any other periods, if so, it can only arise from the increased irritability of the whole system, from its sympathy with the local action. It is frequently said that females are less prone to erysipelas after the cessation of menstruation, than before this period; if it be so, the rule has many exceptions, for I have known more than one female where this liability did not show itself until after they were considerably advanced in life. But I think I have noticed that those whose menstruation is either scanty or difficult, are more obnoxious to erysipelas than others. It does not appear, so far as I have witnessed, that this greater predisposition to erysipelas renders females generally so much more prone to be affected in epidemic erysipelas, or when equally exposed to the contagion of it, than are men. In some cases where the constitutional tendency towards erysipelas is so great that the least wound partakes of this action more or less, the peculiarity appears to be hereditary. I know an instance of mother and daughter, in whom this disposition has been so often shown, in such a serious manner, after the application of leeches, that it would be decidedly wrong, under almost any circumstances, to apply them.

A gouty diathesis has been supposed to predispose to this disease, and also a scrofulous, (as what has it not been charged with?) but there does not appear to be any reason to support the idea that they exert any peculiar action; if they have this tendency, it can only be by their effect upon the general system, lessening its proper tone and rendering it more excitable.

A cachectic habit of body, any visceral disease, an exhaustion of the powers, either by watching, anxiety, want of rest, fatigue, bad diet, whether the error be in quality or

quantity, or an excessive drain of the fluids, undoubtedly predispose to the disease. Dupuytren says, the excessive fatigue occasioned by forced marches is one of the most frequent causes of phlegmonous erysipelas, which then assumes such intensity, and is accompanied by such serious symptoms, that death almost constantly results. This intensity is occasioned by two causes, the one local, the other general: the fatigue of the inferior extremities, and the exhaustion of the nervous energy, by the prolonged action of the muscles.[4] There is also some reason to suppose diabetes renders the patient more liable to erysipelas.[5] So also a long continued course of some medicines seems to predispose. Thus, Sir B. Brodie, in his recent Lectures on Mortification, tells us, that he once lost a patient with diffuse cellular inflammation ending in mortification, after the simple operation of castration, and was disposed to attribute this unfortunate result, in a great degree, at least, to the operation having been performed after a long course of the tincture of iodine.[6] But of all predisposing causes none are more powerful than those which induce disorder in the stomach and liver, and of these by far the most frequent and serious is the excessive use of fermented and spirituous liquors. The rapidity with which erysipelas supervenes upon a slight injury in a person who thus habitually indulges, is well known. The reason of this appears to be, that these persons, who often, so long as all goes on well, appear to be in the fullest and most robust health, are constantly living upon the verge of disease, the system is always excited to the very utmost, and hence, when any injury is inflicted, the balance is destroyed; instead

[4] Leçons Orales, tome ii. p. 149.

[5] Vide Duncan, in Edinburgh Med.-Chirg. Trans., vol. i., cases 1 and 2, were suffering from diabetes; and also James on Inflammation, p. 427, where a third fatal case is mentioned. I have the impression that Dr. Rollo, in his work on Diabetes Millitus, has related at least one similar case, though at this moment I cannot refer to the exact page.

[6] Medical Gazette, December 18th, 1840, p. 472.

of a healthy reparative action, which is always attended with some irritation, either local or general, but accompanied with corresponding power, an unhealthy is set up, neither the part nor the constitution being able to bear the slight additional stimulus which an injury, however small, always occasions. I have already said, that sometimes the slightest error in diet will provoke an attack; rich, acrid, or stimulating food and drink, particularly if taken in large quantities; shell-fish, especially in some conditions of the fish, as in its breeding time; or the more indigestible food, such as salted or dried meats, and salmon; are amongst the most common offending ingesta. A man in Guy's Hospital, who was recovering from some chronic and unimportant disease, was allowed to go out for a short time; he went to Bartholomew Fair, where he was treated to a glass of rum with cayenne pepper in it,[7] to make it warm to the stomach as he said, the following day he was seized with erysipelas, which proved fatal.

The sudden suppression of an habitual discharge, whether it be from an ulcer, the piles, the catamenia, or leucorrhœa, is thought oftentimes to predispose to erysipelas.

Among the predisposing causes which are external to the body, are the exposure to alternations of temperature, particularly if accompanied with moisture;[8] air loaded with the miasma from putrid bodies, either vegetable or animal; the impure air of a close and ill-ventilated apartment, especially that of a ward where many sick or wounded are contained; air contaminated with the effluvia of those already suffering from external or some other form of erysipelas; and also certain conditions of atmosphere, which, as in the case of

[7] Strange as it may appear, at the time (1830,) I was assured that this was not an uncommon drink with the lower class of Londoners.

[8] Erysipelas is thought at present to be less prevalent in St. George's Hospital, in consequence of its wards being now not washed, as formerly, but dry rubbed.

most other epidemics, are too subtle to be recognised by the senses, but which are sufficiently manifested by their effects.

Erysipelas is more prevalent at certain periods of the year than at others. Some few authors have thought that seasons have but little influence over it, but by far the majority of observers have agreed, that more cases are seen in spring and autumn than in winter or summer. In the notes of thirty-eight cases of external erysipelas now before me, which occurred in 1837 in the Dreadnought Hospital Ship, I find that twenty-seven happened in the months of February, March, April,—September, October, and November, while in December and January only four cases occurred, the number of patients being greater during the winter months, and in July and August only two. Perhaps of the two seasons, spring and autumn, more cases occur in the former, but the worst and most fatal in the latter.[9]

The sudden change from a warm moist condition of the atmosphere to a cold temperature, is extremely conducive to erysipelas, as it is to many inflammatory complaints, particularly those of the mucous membranes. Whether it is an ordinary catarrh, acute bronchitis, or erysipelas, which shall be developed on the sudden change from a moist south wind to a north or north-east, will entirely depend upon the peculiar circumstances attached to the individual. The effect of sudden change in the weather was forcibly impressed upon me by the following fact:—In January, 1832, the weather for some time had been very open; on the 13th it suddenly changed, the wind blowing from the north-east, and very cold. On the following morning, three men who had wounds were seized with erysipelas, of which two died. One was in Luke's Ward, and two in Cornelius's Ward, Guy's Hospital, in neither of which had there been any cases of erysipelas for some time previously.

[9] "Circa æstatis finem frequentius occurrit." — Van Swieten, vol. ii. p. 400.

The immediate exciting causes are very various. Among them may be mentioned, irritation of the skin from any cause, as the rubbing of rough canvas trowsers against the legs,[10] belts, knapsacks, &c.; lacerated wounds of the scalp, sometimes even very small clean incised wounds,[11] as from the removal of an insignificant tumour; punctured, lacerated, and contused wounds of the extremities; vaccination;[12] inoculation with morbid, acrid, or putrid matter, especially wounds received in the inspection of bodies recently dead;[13] the bite of animals, stings of insects, acrid secretions, the rubbing of one part of the body against another; the application of ammoniacal, turpentine, and other irritating liniments or plasters;[14] blisters, especially when applied to anasarcous parts; scarifications, leeches, venesection, or the ligature of veins: the two latter are among the more frequent exciting causes, and are especially named as such by Dupuytren.[15] So also I have heard this talented surgeon attribute many of the cases of erysipelas, which occurred in his wards at the Hôtel Dieu, to the fact of the ceiling being arched with stone, which during the night occasioned a constant stream of cold air to pass the head of the patient; or, as he expressed himself, the cold falling down upon the patient's head.

That erysipelas not unfrequently prevails as an epidemic, I need scarcely adduce evidence to prove, since it is too evident to be disputed; there is scarcely a town or district which, at one time or other, it has not visited; and hardly a large hospital in which the disease has not formerly prevailed to such an extent as, in many cases, to render the closing of the whole or part of the wards requisite: as St. Thomas's and

[10] Copeland Hutchinson in Med.-Chirg. Trans., vol. v. p. 282.

[11] Sir A. Cooper's Lectures, Erysipelas, p. 112.

[12] Cases in London Medical and Physical Journal, Nos. 22, 24, and 30, 1801; and Lawrence in Med.-Chirg. Trans., vol. xiv. p. 127.

[13] Duncan, Travers, Cooper, Lawrence, Earle, Shaw, and Dupuytren.

[14] See case of Adhesive Plaister, by Duncan.

[15] Vide p. 123.

St. George's Hospitals in London; the Leeds Infirmary, and the Birmingham Hospital, in the country; the Montrose and Edinburgh Infirmaries, in Scotland; and the Asylums for Lunatics and Infirm at Charenton, Bicêtre, Salpêtrière, as well as the Hospitals of the Hôtel Dieu, St. Louis, and La Charitié,[16] in France testify.

In the Leeds Fever Hospital more than forty cases of erysipelas occurred between October, 1839, and April, 1840, the greater proportion were attacked while in the House, recovering from fever, or during the course of it, (the frequency of this coincidence of typhus and erysipelas shows the near connection between them), but some few were admitted while labouring under it. Cases have since occurred, but not nearly so many, nor in the same proportion.

The constitution of the atmosphere which gives rise to the epidemic is not circumscribed to a very narrow limit, since it is rare for the disease to prevail exclusively in one hospital alone, though it may, from many causes, be more rife in one than in others. In Paris, in the spring of last year (1840), erysipelas prevailed, not only in the various hospitals but also in the city. The same has been observed at Edinburgh, (when Dr. Duncan's cases of diffuse inflammation of the cellular membrane occurred), at Dublin, at Birmingham, and at Devonport, when Dr. Butter's cases of irritative fever prevailed.

It is still an unsettled question amongst the profession, whether erysipelas be a contagious or an infectious disease. By many persons these two terms are used as synonymous expressions, by others not. If by the word contagious be meant that mode of propagation which implies diffusion by personal contact alone, as syphilis or scabes are spread, then probably erysipelas would not rank as a contagious disease; but if it be intended to express that mode of propagation, in

[16] Dictionnaire de Médicine, et de Chirurgie Practiques, tome vii.; art Érysipèle.

which a disease is conveyed by the contamination of the atmosphere, then most assuredly erysipelas is an infectious or contagious disease, if any are so, and we are to believe the evidence of our own senses, and the testimony of numerous witnesses. The difficulty appears to have arisen among those who deny its contagious nature, from supposing that a disease may not be both contagious and epidemic at the same time. There can be no doubt that in some conditions of the atmosphere, certain disorders prevail more than others, and although we are otherwise than by their effects unable to recognise these differences, there is every reason to suppose the condition bears some certain and constant relation to the disease which is thereby induced; hence it becomes highly probable, if not certain, that when a disease is developed by such a state of the air, this disease does not alter the condition of the atmosphere, or introduce any new or dissimilar material into it. The diseased bodies becoming only so many new foci from whence this condition, be it what it may, the addition of a material, a miasm, or a modification in the quantity or ordinary mode of combination of the usual elements of the atmosphere, is anew diffused, and consequently in the vicinity of which it is most concentrated; in the same manner, for the sake of illustration, as if, when the air is in a sonorous condition, from the vibrations of a distant musical chord, a second which is nearer to us and is in unison with the first be struck, we do not perceive two sounds, but only an increased strength in the original one. Hence, I conceive, that a disease may not only be epidemic and contagious at the same time, but that epidemic diseases are always to a greater or less extent contagious, and a contagious disease more or less epidemic. The degree in which a contagious disorder becomes epidemic, will depend, cæteris paribus, upon the aptitude of the atmosphere to receive its impressions, which will be greater at some times than at others, and also upon the degree of concentration necessary to produce its

effects in others, and which probably may differ in different diseases. This will at once explain why it is that at first only one among many who are equally exposed may be seized with a disorder, but he having been so affected a second shall subsequently be attacked. In the first instance, only he who was most predisposed was affected, because in him a slight cause would be sufficient to produce a proportionally greater effect, but the cause having become increased in power by the addition of the miasm from his body, it has acquired sufficient strength to affect those who are less predisposed to the complaint. Hence also it is, that when a disease is developed from causes peculiar to an individual, it may sometimes not extend beyond him, the condition of the atmosphere not being favourable to the propagation of the disorder; while at others, when it is so, the complaint may assume the form of a destructive epidemic. It is only in this manner that the variation in the formidable character of an epidemic, or the universality with which its influence is felt, can be accounted for.

As in other instances of contested points, throughout this Essay I prefer giving some authorities; not that the mere assertion of any man or any number of men is to be implicitly received; but upon questions of observed facts, witnesses who state what they have seen, are of the utmost value in support of a fair argument.

I might here with perfect fairness refer to those numerous instances where the contagious character of puerperal fever and other forms of erysipelatous affections is shown, but I shall confine my quotations to those who speak of external erysipelas.

Dr. Cullen, while he asserts that the disease is not commonly contagious, admits "that the disease may sometimes be communicated from one person to another."[17] Dr. Wells has warmly contended for the contagious character of erysipelas,

[17] Practice of Physic, par. 706.

and has related several instances in which it appears impossible to deny his assertion. Thus, among other cases, Dr. Wells[18] mentions an instance of a lady, who, at a time when erysipelas was not prevalent where she resided, after remaining for some time by the bed-side of a friend who was suffering from erysipelas, was seized with the complaint; subsequently her two sisters and two servants, one of whom was her nurse, were affected with it. Dr. Parr says, "we have four times seen it epidemic, and more than once have had reason to suspect that it was communicated by infection."[19] Mr. Travers has related cases in which he considers the "contagious nature of erysipelas is strikingly manifested,"[20] and thinks this mode of propagation is one of the most frequent causes of erysipelas. Though Mr. Lawrence in one place says "erysipelas arises from many causes, among which it is doubtful if contagion is to be included," he has himself related a case in which he inclines to think it proved;[21] and in another page declares that "erysipelas of the face may in some instances be traced to contagion."[22]

I have already referred to the papers of Drs. Stevenson and Gibson, the latter of whom says, "In the month of February, 1822, I saw at Arbroath, along with Dr. Stevenson, several cases of erysipelas, the appearance and history of

[18] Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii.

My friend, Mr. George Busk, Surgeon to the Hospital Ship, Dreadnought, who has seen much of the complaint, and to whom I am indebted for valuable observations made upon thirty-eight cases of erysipelas which occurred on board that vessel between the 1st of September, 1837, and the 31st of August, 1838, in reply to my query, as to his opinion of the contagious character of erysipelas, says, that he has not the least doubt of its contagiousness; and that during the month of May last, (1841,) he had met with, in a family at Deptford, a very similar series of cases to those recorded by Dr. Wells.

[19] Parr's Medical Dictionary; art. Erysipelas.

[20] Travers on Constitutional Irritation, vol. ii. pp. 127 and 141.

[21] Med.-Chirg. Trans., vol. xiv. p. 34, and case 19.

[22] Idem, page 39.

which convinced me that the disease, as it then prevailed at Arbroath, was of a contagious nature."[23] Among other cases, mentioned by him, there is that of James Craig, who was conveyed from a distance of some miles to his father's house, affected with erysipelas; a few days afterwards his father was seized with it and died. So in the instance of Stevens, a sister who waited upon him, and who at the time had an ulcer on the finger, became affected with the complaint. In the account quoted, at page 106, of the infant in Montrose, who had erysipelas of the feet, the mother subsequently had it in the face and head; the nurse who suckled it suffered from internal erysipelas; she went home, a distance of four miles; immediately afterwards her father, who at the time had a scalp wound, was seized with phlegmonous erysipelas, of which he died; and her sister, with two children, suffered from it in the throat. Mr. D. Wylie died of erysipelas, his two maid-servants who were about him, were then attacked; one of them was sent home to her mother's house, the mother in a few days after died. C. Taylor was admitted into the Montrose Infirmary, with an erysipelatous sore on the hand, soon afterwards the patients in the adjoining beds became affected with erysipelas.

Mr. James says, "there seems the strongest reason for supposing that the disease is communicable by infection, although that is not, perhaps, in all cases very active."[24] Dr. Bright believes that erysipelas is not unfrequently contagious, and has related cases in which he thinks it was thus propagated.[25] Dr. Copeland says, that "the influence of infection in causing erysipelas, was first pointed out and indeed proved by Dr. Wells," and adds, "by evidence that has occurred to myself on more than one occasion."[26] So frequently has

[23] Edinburgh Med.-Chirg. Trans., vols. ii. and iii.

[24] James on Inflammation, p. 374.

[25] Bright's Report of Medical Cases, vol. ii. p. 97.

[26] Copeland's Dictionary; art. Erysipelas, p. 826.

the disease spread by contagion in the Leeds Fever Hospital, that the resident apothecary now makes it a rule never to place a patient who is admitted with erysipelas, in a ward where there are other persons, because in so many instances have those who occupied adjoining beds, been seized with the complaint soon after the admission of an erysipelatous person. Authorities and quotations might easily be multiplied, as Arnott,[27] Hutchinson,[28] Good,[29] Bateman,[30] Williams,[31] Weatherhead,[32] Blackett,[33] Liston,[34] Tweedie,[35] and many others, who not only state facts within their own knowledge, as to the propagation from person to person, but some of them bring strong evidence to show that the clothes may after some time re-produce the disorder. Such a host of witnesses, who assert a positive fact, and bring forward such evidence to support it, must surely be sufficient to establish the contagiousness of erysipelas, in opposition to Rayer,[36] Mackintosh,[37] and those who still maintain that it is not propagated by contagion;

[27] Medical and Physical Journal, for 1827.

[28] Med.-Chirg. Trans., vol. v. p. 284.

[29] Good's Study of Medicine, vol. iii. p. 70., 3rd edit.

[30] Bateman's Synopsis of Cutaneous Diseases, p. 176., 7th edit.

[31] Williams's Elements of Medicine, vol. i.

[32] See an interesting account of erysipelas as it occurred on board His Majesty's ship, Jalouse, in the years 1813-14, in which the disease seemed to be propagated from messmate to adjoining messmates, by G. H. Weatherhead, in Medical and Physical Journal, vol. xxxi. p. 441.

[33] "Erysipelas was contagious in one family that came under my observation, Mr. ——, his lady, the nurse, and two servants died."—Blackett on Erysipelas, in Medical and Physical Journal, vol. lv. p. 297.

[34] Clinical Lecture, by Mr. Liston, November, 1836, reported in Lancet, vol. xxix. p. 325.

[35] Tweedie in Cyclopædia of Medicine; art. Erysipelas.

[36] Rayer's Maladies de la Peau, par. 226., Belgian edit.; and Dictionnaire de Médicine et de Chirurgie Practiques, Paris, vol. vii.; art. Erysipelas.

[37] Mackintosh's Practice of Physic, vol. ii. p. 248. Not only does Dr. Mackintosh deny the contagiousness of erysipelas, but the existence of the complaint itself as an idiopathic disorder; he says, that erysipelas is merely an "occasional symptom of different diseases."

even granting that they have not seen it so communicated, their negatives cannot be set down as valid arguments against positive facts, for as such I regard them. Had such occurrences only happened occasionally, and been observed by a few persons alone, mere coincidence might be sufficient to account for them, or unintentional oversight have led into error. But I think the facts I have mentioned, and the names and references to the recorded observations given, quite preclude this supposition; I therefore cannot agree in the doubt expressed by Dr. Craigie, when he says, "The question of the contagious character occasionally evinced by Rose, has been ably investigated by Dr. Wells and Dr. Stevenson. The general result is, that the disease occasionally attacks two or more persons who have been in communication, and that possibly it may pass from one to another by some contagious property which it acquires. It may be doubted, nevertheless, whether these examples of conjunction and succession are not mere coincidences, and do not depend upon the same cause."[38]

Whatever speculative opinion may be entertained, every practical surgeon knows that it is his duty never to perform any operation when erysipelas is prevalent in the neighbourhood; experience has sufficiently taught him that at such times the liability for this complaint to affect his patient is much increased, and the more so, the nearer the patient is to those already affected—as in the same ward of an hospital; hence it has, I believe, become an undeviating rule with some of our most talented surgeons never, under such circumstances, to perform any operation which can be delayed.

That erysipelas is capable of being propagated by inoculation, Dr. Willan had long since declared, and indeed cannot be doubted, but the two following cases are good examples of the direct propagation of erysipelas in this manner: the second case came under my own observation, and

[38] Craigie's Elements of the Practice of Physic, vol. ii. p. 474., 1840.

the first was related to me by the party who suffered and those who had witnessed the illness, so that it does not admit of the least doubt.

In the spring of 1824 the sister of one of the wards in Guy's Hospital pricked her finger with a bone; the wound became inflamed, and very troublesome, and her health was not good; so that she did not attend to her duties. After a period of six or eight weeks, when she had quite recovered her health, and the only effect of the wound remaining was a very small fissure, of so trifling an extent as not to attract her attention, she assisted in washing the body of a woman, who an hour or two before had died of erysipelas. The same night she felt the fissure painful and hot; a most severe case of erysipelas of the whole extremity was the consequence.

Mary Glisby was admitted an out-patient under my care as dresser at Guy's Hospital, in August, 1831. She had an indolent bubo in the groin, which, after being seen two or three times, was dressed with red precipitate. In going home afterwards to Deptford, she got very wet: erysipelas appeared round the bubo, and spread over a large surface of the integuments. During this time her sister, who was in the habit of washing and dressing the sore, cut the thumb of the right hand: she took no precaution, but on the same day and almost immediately afterwards, washed the erysipelatous sore as usual. Within a few hours afterwards the cut inflamed and became very painful, and from it erysipelas spread over the whole arm.

DESCRIPTION OF ERYSIPELAS.

Writers have differed not less in their opinions as to the varieties of erysipelas than they have in regard to its nature or treatment. Scarcely any two can be found who are agreed upon these points. The classifications of many authors have been noticed in the introductory pages, to which reference may be made; others, however, are not wanting. In most of these divisions one phenomenon has been seized upon as distinctive, while many others, by which the different forms are connected together, are either overlooked or not regarded. Among others, we have as a general division, first, into Idiopathic and Symptomatic, or Primary and Secondary Erysipelas, according as the disease has appeared from some internal cause, or has supervened upon an external injury or irritation,—a division which, for the purposes of description, is sometimes not inapplicable, but if too much importance be attached to it, and the two forms be elevated into distinct species, is evidently incorrect and liable to lead to error, since neither in their nature, situation, results, nor treatment, do they differ materially from each other. The terms Œdematous and Gangrenous Erysipelas, which are so frequently employed, appear to be particularly objectionable, because these phenomena are not peculiar to, nor characteristic of, any one form or variety of erysipelas. The disease has always more or less tendency to terminate in gangrene, and when it does so extensively, it is much rather to be attributed to the constitution of the patient, the part affected, or the treatment

employed, than to any difference in the nature of the inflammation: thus, in very young children, in those who are convalescent from previous illness, or in old and feeble persons, particularly if the disease be seated in the lower extremities, or in a loose and relaxed part, gangrene is not uncommon. So also there is always more or less effusion of serum, the quantity of which depends much upon the part, and constitution involved, being most in those persons who are predisposed to dropsical effusion.

It must be borne in mind, that the varieties of external erysipelas are not separated from each other by any clear and well-defined boundaries; they often run gradually and imperceptibly into each other: hence, if the definitions, whether they be founded upon the extent of the disease, its results, or any one other prominent symptom, be drawn too tightly, in practice it will be found that cases do not answer to them. Between a simple erythematic redness of the skin and a severe attack of phlegmonous erysipelas, in which not only the skin and the sub-cutaneous cellular membrane are involved, but in which also the fascia and inter-muscular cellular membrane are affected, there is an immense difference, which, for practical purposes, it is very useful and proper to distinguish by distinct terms; and yet the two are so connected by every intervening shade of progression as to prove that the two are but the extremes of the same affection. So also between an attack which terminates in a mere branny desquamation of the cuticle, and one which induces the death of a large portion of cellular membrane and cutaneous envelope, there is a wide distinction, yet between them we so often observe every intermediate variety as to prove that they also are but the two extremes of the same complaint. Which of the two results shall take place often depends upon circumstances *totally unconnected with the nature of the disease*, as the age, condition, and constitution of the patient, the part attacked, the treatment employed, or the

order of succession in the parts affected: for a portion which has first suffered may slough, while in that to which the disorder has last spread there may only be desquamation of the cuticle. The same remark will also apply to the degree of swelling, which much depends upon the tendency the patient may have towards effusion or not, and the structure of the part involved: thus, in the same person we see at the same moment great differences in the degree of swelling; if the head and face be the seat of inflammation, the loose tissue of the eyelids often becomes greatly swollen, or if the trunk be attacked, and the penis and scrotum are affected, they are liable to become enormously enlarged. The position of a part often materially influences the degree of œdema, as whether the part be in a depending position or more elevated than the rest of the body.

The following division of erysipeloid diseases appears to me to be natural, and at the same sufficient for all practical purposes; always bearing in mind that the varieties in the second division are not separated from each other by well-marked boundaries, but are only indicative of the principal seat of the inflammation, and that the one continually runs into the other, even in the same patient.

If the view taken of the nature of erysipelas in the foregoing pages be correct, we should have erysipeloid inflammation forming one division in opposition to phlegmonoid: and the erysipeloid would first be separated into two genera, viz. internal and external affections.

The INTERNAL I would divide into three species, according as the serous or the mucous membranes are attached, or the sanguineous and lymphatic systems are involved.

The first species, where the serous membranes are the seat of spreading inflammation, would consist of as many varieties as there are serous sacs, as the pleuræ, peritoneum, and arachnoid. *The second species* in like manner would include as varieties the affections of the different portions of

mucous membranes, as erysipelatous sore throat, affecting the pharynx and larynx; those of the bronchial membrane; the different portions of the alimentary canal; or of the genito-urinary membrane. *The third species* would admit of two varieties, according as the absorbents or the veins are principally affected; for it seems doubtful if the arteries are liable to this diffuse form of inflammation: if they are, it is by no means of common occurrence.

It is evident that when the superficial veins or lymphatics are the seat of the attack, this third species belongs to the external genus; it will, therefore, include two varieties, as the deeper seated or the sub-cutaneous vessels are chiefly involved.

Of External Erysipelas I would make the three following varieties, according as one or the other of the tissues is principally affected; not that in any case the inflammation is exclusively confined to one tissue, but that the violence of it is manifested in one tissue with more intensity than in the others.

1. *The Cutaneous*, (the simplex[1] of Lawrence, the superficiale[2] of James,) in which the integuments are principally affected. There is bright rosy redness of the skin, disappearing on pressure; soft diffused swelling; heat, and burning pain in the part affected; with fever; generally there are vesications, but sometimes branny desquamation of

[1] Med.-Chirg. Trans., vol. xiv. p. 35.

[2] James on Inflammation, p. 370. The term erythema might advantageously be used as it was originally employed by Hippocrates, simply to denote redness of the skin, and not as indicative of a constitutional disorder,—a signification not differing materially from that which Mr. Lawrence has attached to it. "In a natural nosology erysipelas would be classed among the inflammations of the skin and cellular texture, and would follow erythema, to which we should refer superficial and partial inflammation, without vesication, generally without swelling or fever. This slight inflammation may extend into the cellular membrane, and be attended with swelling, as in the erythema nodosum of authors." —Med.-Chirg. Trans., vol. xiv. p. 35.

the integument alone. The boundary between the inflamed and healthy skin is marked by a red line, more or less distinct, and which to the finger often appears somewhat raised. Though this variety commonly spreads successively and continuously from one part to another, it not unfrequently suddenly disappears from the part first attacked, when one of the internal membranes becomes involved, or the affection makes its appearance upon a distant part of the skin, forming the erratic variety of many authors.

2. The *Cellulo-cutaneous*, or phlegmonous erysipelas, (erysipelas phlegmonodes, e. phlegmonosum, of various authors; phlegmon diffus, of Dupuytren,[3]) in which both the integuments and sub-cutaneous cellular membrane are affected. The colour of the skin is of a deeper red than in the cutaneous variety; the swelling is much greater, and less yielding, giving a sensation on pressure, which has been called brawny; the pain is often very severe; the heat of the part much increased; the constitutional disturbance is considerable. It frequently terminates in suppuration, which is more or less diffused, and then there is commonly sloughing of the cellular tissue.

3. The *Cellular* variety, (diffuse inflammation of the cellular texture of Duncan[4] and Earle,[5] erythema anatomicum of Good, inflammation of the adipose membrane of Craigie,[6]) in which the disease is principally thrown upon the sub-cutaneous cellular membrane, sometimes affecting that beneath the fascia. The pain is very severe; the tumefaction very considerable, and much diffused; the redness of the skin not so conspicuous as in the preceding variety; suppuration often extensive, with vesications and gangrene. When the veins or absorbents are affected, sometimes a red

[3] Leçons Orales.

[4] Edinburgh Med.-Chirg. Trans., vol. i. p. 470.

[5] Medical and Physical Journal, vol. lvii. p. 1.

[6] Practice of Physic, vol. ii. p. 254.

streak marks their course. The constitutional symptoms are always serious; often of a typhoid character. This form frequently follows inoculation with poisonous animal or acrid vegetable matter; an injury to a vein, either by ligature or wound; sometimes it supervenes upon fractures, or contused or lacerated wounds; an irritating plaster or liniment may, in some conditions of constitution, be sufficient to excite it; and occasionally it appears without any evident accidental cause.

To one or other of these forms may, I think, all the varieties of external erysipelas be referred, with sufficient precision for all useful and practical purposes. The division of erysipelas by Desault into inflammatory and bilious is one which evidently cannot be retained as a classification; though the greater or less biliary disturbance, and the violence of the inflammatory action will necessarily have considerable influence upon the treatment proper to be employed.

The cutaneous variety is best seen in a mild case of idiopathic erysipelas of the face, in which, although there is some effusion of serum, there is seldom suppuration or sloughing of the cellular membrane. If the case be more severe the loose texture of the eyelids becomes the seat of purulent deposit, and in violent cases, especially such as not unfrequently follow wounds of the scalp, the cellular membrane is so implicated as to present us with well-marked instances of the cellulo-cutaneous variety. This variety, however, is more common upon the extremities and trunk; and of the limbs, the lower are more seriously affected than the upper. Dupuytren goes so far as to say "that in other regions of the body diffuse phlegmonous erysipelas often terminates in resolution, but in the inferior extremities suppuration is constantly established."[7] The upper extremities and the sides of the trunk are the parts which most frequently present us with the best instances of the third or cellular variety; not because there is

[7] Leçons Orales, Sur le phlegmon diffus.

any peculiar aptitude in these parts to be thus affected; but because the exciting causes, which induce it, are more frequently applied to the hand and arm, than to the feet or legs; but when so applied, or the inflammation is idiopathically developed in them, then the same phenomena are exhibited.

CUTANEOUS VARIETY.

The local inflammation is commonly preceded by constitutional disturbance indicative of a febrile attack; the pulse is quickened; there is languor and chilliness, alternating with flushes of heat; often a distinct rigor occurs; the head aches, and is so much affected, that not unfrequently there is delirium; the secretions of urine and perspiration are diminished; the bowels are constipated, though occasionally there is diarrhœa; there is loss of appetite, with nausea and often vomiting of bilious matter. The tongue is commonly loaded with a yellow fur at its base and middle, the tip and edges being moist and red. On the second or third day, sometimes on the first, and occasionally within a very few hours, the local symptoms show themselves. In one instance I have lately met with, the local and general disturbance showed themselves simultaneously; the patient, a female, went to bed as well as usual, but whose health was not good, and she had been wet through during the day, in the night she was awoke with rigor and sickness, and at the same time felt pain and stiffness about the left eye and cheek; on rising in the morning there was redness, and swelling with inability to open the eye.

Most commonly the local affection is seen within from twenty-four to thirty-six hours after the rigor; in some rare cases it is deferred until the fourth or fifth day.[8] Generally

[8] "So I have seen in a woman after five days' fever, erysipelas arise in the arm, which in a short time spread to the shoulder, then, by the neck, invaded the face, and afterwards occupied the whole head."—Van Swieten, vol. ii. p. 78.

speaking, I think it will be observed that the local symptoms come on a few hours earlier in traumatic erysipelas, than when it appears idiopathically,[9] but even in these cases there is usually some constitutional disturbance before the local disorder is perceptible, although Mr. Travers says the contrary,[10] and declares that the inflammation of erysipelas precedes the fever.

When the face and head are the parts affected, as in the great majority of cases of idiopathic erysipelas they are, the inflammation usually commences at the side of the nose, on the eye-lids, or upon one cheek; sometimes both sides are invaded at the same time, but much more commonly only one, from whence it gradually spreads to some extent over the same side of the face before it reaches the other; it then mounts upwards, over the forehead and scalp, and passes downwards upon the neck, where it generally terminates, though not always, for sometimes it proceeds to affect the trunk and arms. Though the inflammation usually at first shows itself on one side, and occasionally does not extend beyond the median line, erysipelas has a remarkable tendency to attack both sides of the body symmetrically. At times the inflammation begins upon other parts of the head, then the cheek. In an elderly lady, who is very liable to repeated attacks of erysipelas, and which are always ushered in by severe biliary derangement, the inflammation is usually first seen near either mastoid process, from whence it spreads over the posterior parts of the neck, before it encroaches much upon the fore-part of the neck or face.

At first the inflamed part is of a florid hue, but soon

[9] In twenty-nine cases where erysipelas supervened on some external irritation, and which occurred between September 1st, 1837, and 31st August, 1838, on board the Dreadnought, the local inflammation was manifested within twenty-four hours after the premonitory rigor.

[10] So also the fever of scarlatina, measles, and small-pox, precedes the eruption, and the inflammation of erysipelas precedes the fever."—Travers on Constitutional Irritation, vol. ii. p. 131.

becomes darker; it is swollen, hot, bright, and shining; and a diffuse burning, pricking pain, accompanies it, which is evidently very different from that acute throbbing sensation which is indicative of true phlegmon. A red line defines the boundary between the affected and sound portions of skin, and in passing the finger over the inflamed to the sound parts, the tumefaction becomes more evident, and this is greater or less according to the extent to which the cellular membrane is involved. When this is considerable, the whole head and face become so enormously swollen that it is impossible to recognise a feature.

On the second or third day from the appearance of the inflammation, the third or fourth from the rigor, the eyelids are usually closed, and about the same time vesications make their appearance: these are commonly very small and numerous, though sometimes few and large. On the eruption of these vesicles the pain and heat of the part are not often much relieved. At first the vesications are filled with a clear straw-coloured serum; in a day or two they either break and discharge their contents, which concretes into a brown coloured crust upon the surface, which as the disease abates falls off; or the fluid dries up, and the raised cuticle desquamates, leaving the cutis red and tender. The tumefaction usually does not subside entirely for a few days longer. At times the effused serum is of an acrid character, and excoriates the parts upon which it runs, by this adding much to the original irritation. The vesications, which by some authors are said always to occur, and by some nosologists, as Willan, Bateman, and Rayer, are made the basis of classification, are by no means a necessary or an invariable accompaniment in mild cases, even when the face is the seat of the attack, though more common here than in other parts of the body; not unfrequently vesications do not appear, occasionally, though very rarely, the cuticle does not desquamate, and when erysipelas affects the extremities, very often there are no vesications.

The extent and rapidity with which the inflammation spreads, differ much in different cases. Unless the disease is cut short in its commencement, the inflammation rarely ceases to spread before the sixth day, and scarcely ever extends after the tenth; the average time during which it continues to spread is about seven or eight days, and its duration is seldom prolonged beyond the eleventh or twelfth day, except in very old or feeble persons. Usually as the inflammation extends in one direction, it ceases in the part first attacked, so that not uncommonly every stage of the complaint is observed at the same time.

Such is the general course of the local affection, but in some instances it suddenly disappears from one part and as suddenly is seen affecting a distant part of the body—forming the erratic variety of many authors. Sometimes in this irregular manner it overruns every part of the body, and occupies a very long period of time, occasionally five or six weeks.[11] In this form the local affection is of comparatively little importance: so far, however, as my experience goes, it indicates a very unfavourable state of constitution, and is commonly accompanied by considerable visceral disorder, particularly of the liver and of the other chylopoietic organs. It bears much resemblance to the erythematic patches observable in some cases of fever, and its erratic disposition must always be regarded as an unfavourable indication. This erratic variety may be looked upon as one of the connecting links between erysipelas and typhus fever, which have many phenomena in common with each other.

The constitutional symptoms which accompany the local changes are very various, and present every grade between the high inflammatory synochia and the asthenic typhus.

[11] Aprés 5 ou 6 jours de traitment elle se propage aux régions voisines, et dans un espace de 20, 30, 40, 50 jours, elle a parcouru toute, ou presque toute, la surface du corps."—Dictionnaire de Médicine et de Chirurgié Practiques, tome vii. p. 479.

When the disease occurs sporadically, in the country, in young robust plethoric persons, whose constitutions have not been broken down by previous illness or dissipation, and the disease partakes of the phlegmonous variety, then the former will prevail; but if, on the contrary, the disease is epidemic, occurs in the crowded wards of a large city hospital, in very young children, or in old and enfeebled persons, or in those whose constitutions have been broken down by previous illness, want, or irregular living, then the symptoms from the first are of a typhoid character. But under all circumstances there is a decided tendency in this complaint to assume a depressed type. Although this is positively denied by Mr. Lawrence, who says, "I am quite at a loss to discover in this affection those marks of debility which some have so much insisted upon,"[12] and it must be admitted that many, as Fordyce, Wells, and Good, have run into the opposite extreme of regarding erysipelas as, invariably and under every circumstance, a disease of debility; yet a careful observation of the disease itself, and an attentive examination of the evidence of a great majority of the best informed and impartial writers, clearly shows the typhoid disposition of the complaint. Indeed, if the view before taken of the nature of erysipelas be correct, we should be led a priori to expect a considerable variation in its symptoms. If it be chiefly characterised by action, without corresponding power, "an increased disposition to act without the power to act with," as there is every degree which the power and irritation relatively bear to each other, so shall we accordingly find every shade in which the symptoms of excitement or depression are predominant the one over the other. While on the one hand the local disease may partake much of the nature of phlegmon, and but little of the spreading erysipeloid disposition, on the other it may possess scarcely any adhesive action, and so much of the spreading, as to involve

[12] Med.-Chirg. Trans, vol. xiv. p. 28.

an entire limb; in the former case the general symptoms will be of the true high synochial character, in the latter of the lowest typhoid.

Throughout the course of the disease there is usually the most decided disorder in the biliary and alimentary secretions; the onset is very commonly marked by bilious vomiting; the bowels are generally constipated; the evacuations are dark and offensive; the urine scanty and high coloured; the tongue, at first loaded with a white or yellow fur, and moist, becomes cleaner, red, dry, and often glazed. This may in part be attributed to the nostrils being obstructed; the patient is obliged to breathe through the mouth. The nausea and vomiting, with the disorder in the functions of the liver and stomach, often continue for some days, or throughout the course of the disease, insomuch that it constitutes one of the most prominent features in the complaint, and has led some, as Desault, to found their divisions of erysipelas into varieties, according to the presence or not of this derangement, and its subsidence is always one of the best and surest indications of improvement. The continuance or not of the biliary disorder materially influences the course of the complaint; should this derangement be merely of a temporary nature, after the stomach and bowels have been freely evacuated, either by their own action, or by emetics and purgatives, it frequently disappears, and the disease assumes more of an inflammatory type; but if it be of a more permanent nature, arising from a more serious or obstinate derangement of the liver, as is frequently the case in those whose constitutions are broken down by dissipation and intoxication, or in the epidemic form of the complaint, then it has a marked depressing influence, and the symptoms are throughout of a nervous and adynamic character.

The degree to which the brain and its membranes suffer, is very various: it depends much upon the extent to which the scalp is affected; there are but few cases where the scalp is

attacked in which these are not more or less involved, and often to an alarming degree. There seems to be a peculiar liability for the membranes of the brain to participate in the disorder; in no case, however mild, is there a complete absence of head-ache, and very few in which there is not delirium. Often, if the whole scalp be inflamed, and the disease partake of the cellulo-cutaneous variety, the head affection constitutes the danger, there is then either stupor, or a low muttering delirium, with great restlessness, and occasionally subsultus tendinum. Indeed the degree to which the brain and its membranes are involved, in very many cases, seems in direct proportion to the extent of the scalp affection.

At the commencement the pulse is frequent, sometimes full and compressible, seldom hard. As the disease advances it generally becomes more or less oppressed and irritable, small, very quick, and sometimes irregular. The respiration is quick and hurried; not unfrequently there are exacerbations towards night, and remissions towards morning. Often, on the appearance of the external inflammation and vesications, about the fourth day, these general symptoms are somewhat relieved; but afterwards are again increased, until towards the sixth or seventh day, when, if the disease be progressing favourably, there is a decided improvement in all the symptoms; the respiration becomes freer, the frequency of the pulse decidedly diminishes, the head is less affected, and the abdominal secretions become more healthy. On the contrary, after this time, should the frequency of the pulse continue, it may be regarded as a most unfavourable symptom;[13] in such cases the head usually becomes more

[13] I believe it will be found to be an almost certain rule, that if the frequency of the pulse does not decrease after the seventh day from the commencement of the attack, even though many of the other symptoms improve, death will probably take place—a result which I attribute to the deterioration of the blood by the admixture of pus, and the fatal effect it has upon the whole system, particularly the visceral.—*Vide Post Mortem Appearances.*

affected, and the coma increases; the pulse itself becomes excessively frequent, weak, and small; the tongue dry and dark; sordes collect about the teeth; and the patient sinks, almost always from some affection of the brain and its membranes, which is frequently complicated with mischief in the chest and abdomen.

The blood drawn in the course of the disorder frequently presents the inflammatory crust. This, which has often been mentioned, and by some, as Sagar, introduced into the nosological description, as though it were essential, has been recently confirmed by some tabular statements of Andral, who has noted the appearances of the blood drawn in various diseases; from which it would appear, that the blood in erysipelas shows the fibrinous clot in a greater proportion of cases than it does during many other ailments,—though it is by no means universally present, even in the cellulo-cutaneous variety. At the time when the presence or not of the buffy coat was looked upon as indicative or not of the existence of inflammation, and accordingly of the propriety of farther venesection, this was a most important sign, and was used as an unanswerable argument by those who maintained the inflammatory character of erysipelas; but since the rationale of the formation of the fibrinous clot has been better understood, and the many circumstances extrinsic to the body which are liable to interfere with it known, much of its value as a diagnostic sign is lost, nor can we explicitly rely, as formerly was done, upon it as authorising the free abstraction of blood.

CELLULO-CUTANEOUS VARIETY.

The above detail of symptoms are such as are usually presented in the cutaneous variety of erysipelas of the head and face, where the cellular membrane is not sufficiently

involved, to lead to suppuration, unless, perhaps, sometimes in the very loose texture of the eyelids. The symptoms differ but little when any other part than the head is the seat of the complaint, except that the brain is not so much affected. The cellulo-cutaneous or phlegmonous variety, differs from the cutaneous only in the more violent nature of the attack and the greater extension of the inflammation, which affects not merely the skin, but also seriously invades the subjacent cellular membrane down to the fascia. The fascia most commonly, though not invariably, forms the boundary of the disease, at least if it be properly treated. Dr. Copeland Hutchinson states, that pus is more frequently deposited beneath the fascia than above it; and Mr. Earle, in the paper before referred to, says, "The disease under consideration, (diffuse cellular inflammation, as he calls it,) exerts its influence principally upon the sub-cutaneous tissue and fascia;"[14] an opinion in which Mr. Arnott, from the remarks in his Essay on Erysipelas, seems to coincide,[15] and with which Dr. Young and others agree;[16] but which Mr. Lawrence very ably, and, as it appears to me, successfully combats. It is perfectly true, that sometimes not only the fascia itself is implicated, but also the muscles, tendons, and inter-muscular cellular membrane; this, however, only occurs in the more aggravated or neglected cases, except upon the scalp, where the suppuration necessarily is under the occipito-frontal aponeurosis, on account of the close connection between this and the integuments. It is also worthy of remark, that the adipose membrane suffers much less than the cellular tissue, as Dr. C. Hutchinson has particularly noticed.

[14] London Medical and Physical Journal, vol. lvii. p. 1.

[15] Idem, p. 193.

[16] Glasgow Medical Journal, vols. i. and ii. Dr. Craigie would deny that such are cases of erysipelas at all, but instances of inflammation of the fascia, (Sparganitis) or of the adipose membrane.

Baron Dupuytren[17] and Mr. Lawrence[18] have both given very exact and copious descriptions of this variety of erysipelas. As in the cutaneous form, the attack commences by a rigor, followed by heat; occasionally these signs are repeated so often as to have led to the supposition of intermittent fever being the disorder and to the administration of bark.[19] The colour of the inflamed part is usually of a deeper hue than when the skin alone is affected, and the swelling is more considerable. During the first two or three days, pressure by the finger dissipates the redness, and leaves a depression, which soon fills up again: this does not occur towards the fourth or fifth day. The swelling has now become greater, and the part so much harder, that it gives considerable resistance, and on pressure, communicates to the finger a sensation which has been called "brawny." The colour becomes darker, and the skin shining, the heat is great, the pain very severe and pungent, sometimes with throbbing. Vesications commonly form, though not so frequently as in the cutaneous variety. The whole limb is often twice its natural size, from infiltration into the cellular membrane. About this time phlyctenæ appear. Up to this period the febrile symptoms have augmented; all the secretions are seriously altered and diminished; the bowels usually constipated; there is an absence of sleep, and great restlessness; but not unfrequently the disorder now seems arrested and to become stationary, the swelling does not increase, the heat and pain are not greater, and the phlyctenæ do not alter: so that the inexperienced or inattentive practitioner, would be led into serious error by supposing an improvement had taken place; it is, however, in appearance only, for suppuration is about to occur.

If, in the early stage of the complaint, an incision be

[17] Leçons Orales.

[18] Med.-Chirg. Trans., vol. xiv.

[19] Dupuytren.

made into the cellular membrane, it is found to be loaded with turbid serum, which presently becomes opaque and whitish; sometimes it closely resembles milk in appearance, at other times it is thicker and more consistent. The effusion does not flow readily from the wound, but slowly oozes out; it gradually assumes more of a purulent appearance, and at this period has acquired much of the appearance of pus. The cellular membrane becomes of a dirty-grey colour, is broken up, and loses its vitality. The phlyctenæ break, and discharge a dark-coloured serum; the skin becomes marbled; patches are seen of a pale, white, or black, appearance; these soon become gangrenous. As these processes are going on, the limb often loses its hardness, and is more elastic on pressure; the sensation thus communicated to the finger is very peculiar and characteristic, and widely different from the fluctuation of pus in a circumscribed cavity. Mr. Pearson has likened it to the sensation which is excited by a quagmire or morass,[20] and which has since been called boggy; terms to which Mr. Lawrence objects, but which any one who has once placed his foot upon a boggy portion of ground will immediately recognise as apt and descriptive, if inelegant. Indeed, in both cases the trembling, semi-fluctuating feeling, is occasioned by the same cause, the infiltration of a fibrous structure with a large quantity of fluid. In this form of erysipelas the cellular texture is completely saturated with the effused fluid, without any coagulable lymph. There is no pointing of the skin, as in true phlegmon; at this period the skin gives way, when there often flows out an enormous quantity of imperfect thin pus, with large fibrous masses like half decomposed flax, which Dupuytren has compared to the membranes of a fœtus from one to three months old,[21] and Mr. James to wads of wet shamoy leather.[22] If these be

[20] Pearson's Principles of Surgery, p. 192.

[21] Leçons Orales.

[22] James on Inflammation.

plunged in water, they unfold, and are seen to be portions of dead cellular membrane saturated with pus; often they are many inches in extent. At times so extensive is this destruction of the cellular membrane, that the skin is detached from almost an entire limb :[23] often also the destruction of the skin is to a great extent; even those portions which for some time have preserved their colour and sensibility, may subsequently give way and leave the fascia or muscles underneath exposed. This sloughing of the skin at times proceeds to an alarming extent, involving the whole limb, and occasionally, the suppuration passing beneath the fascia, the muscles and tendons are involved in one common destruction. When this is the case, the neighbouring joints and the periosteum of the bones are frequently implicated, occasioning mischief against which no strength of constitution can contend.

Pearson says, that "a circumscribed cavity, containing laudable pus, is never seen in legitimate erysipelas," which as a rule is correct, though there are some exceptions to it; occasionally, even where for the most part the suppuration is diffused, there are a few circumscribed depôts. The skin is

[23] "If, however, gangrene should not take place, we have invariably found the disease to terminate in effusion, or suppuration, between the integuments and muscles. These secretions, from being so situated, break down the cellular and vascular connections between those substances, to a greater or less extent, according to the height the disorder has attained; so that immense bags of matter are sometimes formed under the integuments, which may be moved not only all round the limb, by changing its position, but as I have often witnessed, from the ankle to the trochanter, and over the glutei muscles." —Hutchinson on the Treatment of Erysipelas, in Med.-Chirg. Trans., vol. v. p. 280.

"The integuments of the leg, separated from the fascia round the whole leg, all the openings communicating freely with one another, no man ever suffered greater distress. He died at the end of three weeks. After death it was found that from the trochanter to the great toe, an almost complete destruction of cellular substance, and consequent separation between the integuments and fascia, particularly on the outside of the limb, had taken place, and at some points pus was found beneath the fascia."—Dr. Young, in Glasgow Medical Journal, vol. ii. p. 244.

seldom or never seen to ulcerate, it gives way by sloughing; this is especially the case with the skin of the lower extremity, but does not usually occur when the scalp is the seat of the disease, where the integuments do not become livid and sloughy, but open by ulceration—a difference, the reason of which was first explained by Dupuytren, at least distinctly, for others seem to have had some, but not very definite notions, respecting it.

In the body generally, but especially in the legs, this consecutive gangrene of the skin is often to a very great extent, and is caused by the integuments being deprived of their nerves and blood vessels. The larger arteries and nerves run deeply within the limb, and though the skin is freely supplied, it is only by small branches, which pass through the cellular tissue to reach their destination; in the gangrene of this tissue the nutrient vessels and nerves are necessarily involved. Hence the propriety of the caution, upon which Dupuytren so particularly insists, of using the utmost care in dressing an erysipelatous limb, that we do not destroy the small bands which may yet connect the skin with the subjacent parts, lest we should still farther deprive it of vitality, by cutting off the only remaining means of nutrition and nervation. This consecutive gangrene is rarely seen in the scalp, where, nevertheless, this form of erysipelas is frequent. The distribution of the arteries and nerves is very different in the scalp from that of the limbs: in it they are placed between the skin and the occipito-frontal aponeurosis. The temporal, frontal, and occipital arteries, are so connected to the integuments, that in dissection it is very difficult to separate them. Now as the suppuration takes place beneath the aponeurosis, the skin is not deprived of its supply of blood or nervous energy, and consequently maintains its vitality, even though the whole of the cellular membrane between the pericranium and aponeurosis be destroyed, as does sometimes happen.

Such severe local mischief cannot fail to be accompanied by corresponding general disturbance. However much at the commencement the symptoms may partake of the synochial character, they speedily assume an adynamic type. The constitutional, like the local symptoms, not unfrequently about the sixth day abate, and the disorder seems stationary. If the improvement be real, the head becomes less affected, the secretions improve, and the pulse is less frequent; if this be not the case, no dependence should be placed upon the other appearances, or we shall be deceived; in a day or two the symptoms all become decidedly worse, the pulse becomes more rapid, small, and irregular; the head more affected; the low muttering delirium, or coma, increases; the tongue becomes dry, glazed, brown or black, even to the tip and edges. (Whatever may be the condition of the base and middle of the tongue, if the tip and edges be moist and clean there is always hope.) Sordes collect upon the teeth, the fæces are passed involuntarily, and death closes the scene. But even should the patient survive this stage, the danger is by no means over; the suppuration is often enormous, amounting to one, two, or three pints of pus in the day; sloughs of cellular membrane continue to separate; diarrhœa is liable at any time during the suppuration to come on and carry off the patient in a few hours; besides which, there is established a great disposition for suppuration to occur in distant parts of the body which have not been involved in the original attack, or to be thrown upon the internal organs, so that the great proportion of those who die in this stage, are carried off by some affection of the viscera or their investing membranes.

Should the patient recover, it is only after weeks or months; the inflamed parts are then so changed and agglutinated together by the extensive loss of the connecting cellular web and skin, that the functions of the limb are necessarily much, and often irrecoverably impaired. For long the utmost care in clothing, diet, and exercise is requisite; the least error

is sufficient to establish an attack of the serous membranes, or of the alimentary mucous membrane, which soon destroys the patient. The cicatrices for a long period remain very tender, and are liable to be destroyed very suddenly. After rather too much exercise, or too much pressure,—often without any perceptible cause, a small vesication will appear upon the cicatrix; this soon gives way, and discloses an ulcer of an unhealthy dirty-grey appearance, from which the ulceration extends so rapidly, that within twenty-fours a large cicatrix has been completely destroyed; the reparation slowly goes on, again to be, perhaps, a second or a third time destroyed; each time, however, the destruction is usually less extensive, and the new skin stronger, until in the end it remains firm.

Such is the course of cellulo-cutaneous erysipelas, when uncontrolled. It pursues its course more rapidly and violently in the young and robust, than in the infirm and old; in the former the inflammation seldom extends after the sixth or seventh day, in the latter it sometimes goes on spreading until the twelfth. It is more dangerous in proportion (cæteris paribus) to the age of the patient, except in very young children and infants, in whom there is always more action than power, and where the disease is always very dangerous.

The immediate danger will also in some measure depend upon the situation of the complaint. It is the most dangerous when it attacks the head, next when it is seated upon the trunk, and least so when it affects the extremities. In the former case the functions of the brain are always seriously involved, often from the very first, and the patient dies rather from the internal than the external affection; in the latter the brain does not participate to nearly the same extent in the earlier stages, and often not in the later, unless the accompanying fever be severe. The remote danger may, perhaps, be said to be inverse. The destruction is often much greater, and the mischief much longer in being repaired, when the extremities, and especially the lower, are affected, than when

the scalp is the seat of the attack,—probably on account of the higher degree of vitality which this part possesses, and also to its supply of blood vessels and nerves being but little interfered with when suppuration takes place.

CELLULAR VARIETY.

The symptoms of the cellular variety of erysipeloid inflammation, (diffuse inflammation of the cellular membrane) do not essentially differ from those of the preceding variety, allowance being made for the disorder being more confined to the sub-cutaneous cellular membrane, and the less degree to which the skin is implicated; in other respects the indications are the same. Indeed, those who would make of the two varieties distinct diseases, have very great difficulty in deciding to which of them many cases should be referred. While on the one hand, Dr. Duncan,[24] Mr. Earle,[25] Mr. Arnott,[26] and Dr. Craigie,[27] consider many cases, which all other writers call phlegmonous erysipelas, to be instances of diffuse inflammation of the cellular membrane; the former gentleman expressly declaring that form of disease which he has described, is the same affection which Dr. Hutchinson treated so successfully by incisions; and Dr. Craigie, that Dr. Hutchinson's cases are not instances of phlegmonous erysipelas, but of inflammation of either the fascia or of the cellular substance: on the other, most surgeons agree with Lawrence and Hutchinson on considering the term phlegmonous erysipelas as the most proper, and Dupuytren uses the appropriate one of diffuse phlegmon, as most applicable to all these cases. Although Mr. James does not think that all cases of phlegmonous erysipelas and diffuse inflammation

[24] Edinburgh Med.-Chirg. Trans., vol. i. p. 470.

[25] Medical and Physical Journal, vol. lvii. p. 1.

[26] Idem, p. 193.

[27] Craigie's Elements of the Practice of Physic, vol. ii. p. 477.

of the cellular membrane are the same; yet, he says, that many of the cases which have been related as of the latter in reality belong to the former.[28]

The cellular variety, like that which equally involves both skin and cellular membrane, varies much in its violence, and owing, perhaps, to its being principally seated in the cellular membrane, which is the especial locality of true phlegmon, in mild cases, it presents us with a very near approach to circumscribed phlegmon. The mischief varies from little more than a whitlow, or a suppurating absorbent gland, to that form of the disease which induces a destruction spreading over almost half the sub-cutaneous cellular membrane of the body. So also does the rapidity of the disease differ much; in some cases it proves fatal in a few hours, in others not for many weeks, when the patient dies rather from the effects of the disorder than from the complaint itself.

In the majority of cases the constitutional symptoms are preceded by some local affection, but not invariably, for at times the constitutional derangement appears without any local complaint, and the patient seems to be suffering under typhus fever,[29] for which indeed, in more than one case, the disease has been mistaken; yet, even in these cases we may generally avoid the error, for in simple typhus the disorder only reaches its height after some time, but in this affection at a much earlier period, usually in a short time, as two or three days. There is intense local pain in the punctured part, if a puncture has been the exciting cause, with enormous diffuse swelling, and more or less redness.

When the disease arises from venesection, the wound in the vein sometimes heals and remains so, at others, after having healed, it again opens; but more commonly it does not close at all, but remains open, the edges becoming thick,

[28] James on Inflammation, p. 417.

[29] Duncan in Edinburgh Med.-Chirg. Trans., vol. i. p. 602. Dr. Colles in Dublin Hospital Reports, vol. iii. p. 209.

irritable, and gaping, and there is a discharge of a thin semi-purulent matter.[30] From this point the disease spreads as from a centre, though more towards the shoulder than towards the hand. Sometimes, although venesection may appear to have been the immediate exciting cause, the punctured vein is not found to have been implicated. In most cases, if the disease arises from the application of poison, as the bite of a serpent, or from a wound received in the examination of a body, there is a small vesicle or pustule, which forms at the wounded spot, and which Dr. Colles appears to regard as possessing specific characters. However extensive the suppuration may be, there is seldom much in the immediate vicinity of the wound. In most cases the violence of the disease seems to be expended about the axilla and in the region of the pectoral muscles. The redness of the skin is not so conspicuous in this as in the preceding variety; it is, however, never altogether wanting; in all cases, at one period or another, the skin participates in the disease, sometimes very extensively. At times vesications occur, though not so frequently as in the cutaneous variety, which, indeed, we should not expect, inasmuch as they are the effect of the external surface of the dermis being inflamed. The large vesications which appear at a later period are more like the phlyctenæ preceding gangrene of the skin, which changes colour and undergoes precisely the same processes which were spoken of in the cellulo-cutaneous variety. In one circumstance only does the gangrane in this variety differ from that which occurs in the former, namely, that the muscles are much more frequently affected. On account of the inflammation being deeper seated, it oftener passes beneath the fascia, when the muscles become soft, black, and completely

[30] In the milder forms of this disorder, which follow venesection, and which every practitioner must have often seen, this opening in the integuments serves as a vent through which the discharge takes place, when, after a few days of fever and irritation, the patient recovers.

disorganised. It is matter of doubt if this arises from the muscular structure itself being inflamed, as Dr. Duncan supposed: to me it rather appears to result from the same circumstances as gangrene of the skin; in both cases the cellular matrix, in which the nutrient vessels and nerves pass to their distribution, is destroyed, and with it the vessels and nerves; as a necessary consequence the death of the part ensues.

Much interest has been excited in the endeavour to ascertain how, or in what manner, the disease is propagated from the wound; some suppose by the veins, others by the lymphatics: but as the blood-vessels are sometimes seen to be altered in texture, at others not, occasionally red streaks are to be noticed in the course of the absorbents, and the glands are enlarged, but frequently these appearances are not to be found, the principal symptoms and progress of the disease being the same: it seems more probable that the disorder depends upon some alteration in the nature of the blood itself, from which, when inflammation is set up, it necessarily assumes this diffuse form, since the introduction of a poison is by no means a necessary or invariable antecedent to the production of the disease; a sprain or fracture may induce it, or it may arise without any external or local cause whatever, so far as can be ascertained. In this, as in the preceding variety, there is no pointing of the matter; but the same peculiar doughy or boggy feeling is equally characteristic of matter having been effused. There is also the same tendency for distant parts of the body to be involved, and for matter to be deposited; the hand and arm of the opposite side, the joints, the lower extremity, one or more of the serous membranes, particularly the pleura, have been seen so affected.

The fever and constitutional irritation differ in no respect from what is observed in the cellulo-cutaneous variety, except, perhaps, on the whole they exhibit more of the adynamic type:

this, however, like the extent of the local affection, differs much, and appears entirely to depend upon the constitution of the patient, and the power of the exciting cause, as does the extent of the local mischief, for this and the general symptoms show a great dependence upon each other. In those cases where the local affection approaches nearer to true circumscribed phlegmon, the fever resembles synochia; on the contrary, where there is a total absence of coagulable lymph and the effusion is extensively diffused, it is of the lowest typhoid character; and if the most intense form of the disease be excited, as for instance by the bite of a rattle-snake, (crotalus horridus, c. durissus, or c. miliarius,) the depression of all the vital powers is at once so great, that all energy is destroyed, no reaction takes place, and it is only in some rare cases that the patient's strength enables him to survive long enough for the local symptoms to be developed. For an interesting case of this kind see that reported by Sir E. Home in the Philosophical Transactions for 1810, and also mentioned by Dr. Good, who watched the progress of the case.[31]

[31] For a full account of this form of erysipelas, the following works, which contain numerous cases, may be consulted: Dr. Duncan, Jun. in Edinburgh Medico-Chirurgical Transactions, vol i.; Dr. Colles in Dublin Hospital Reports, vols. iii. and iv.; Mr. Lawrence in Medico-Chirurgical Transactions, vol. xiv.; Good's Study of Medicine, vol. ii. p. 381, 3rd edit.; Dupuytren's Leçons Orales, tome ii. p. 141; Copeland's Dictionary; Travers on Constitutional Irritation, vol ii.; and on Wounds and Ligatures to Veins, &c., in Cooper and Travers's Essays: Arnott on the Secondary Effects of Inflammation of the Veins, in Medico-Chirurgical Transactions, vol. xv.; Earle in Medical and Physical Journal, vol. lvii.; Craigie's Elements of the Practice of Physic, vol. ii.; and also the numerous cases which are scattered through various publications, to many of which particular reference is made, in a former part of this work, when treating of the nature of diffuse cellular inflammation.

ERYSIPELAS IN INFANTS.

Before dismissing the description of erysipelas there is one form of the disease which deserves separate mention,—as it is seen in infants,—Erysipelas Neonatorum; not that the disease is of a different nature, as some have imagined, or that it requires a different name; but on account of its fatal character, which peculiarity depends upon the feeble powers of the little sufferers.

Erysipelas of infants is almost confined to lying-in hospitals, at least in its epidemic form, though at the present day it is much less frequent, even in them, than it was, since more attention has been paid to cleanliness and better ventilation, and more especially to the not crowding together in a limited space so many lying-in women. Children under the age of a month are much more liable to it than after this age: indeed Underwood was at one time inclined to doubt if it ever affected those who were more than a month old. The most ordinary time for its appearance is a few days after birth, which, if its dependence upon inflammation of the umbilical vein be true, as seems to be proved, in at least some cases, may be accounted for, by the process which is then going on in the vein.

In some few cases infants have been born with erysipelas, an instance of which is related by Dr. Bromfield, as occurring in the British Lying-in Hospital. "The child was born with its whole face swelled and inflamed, particularly the left side of it, which had the true erysipelatous appearance. The legs, feet, and left hand, were likewise swelled and inflamed; and on each tibia appeared a dark brown or livid slough, of an oblong form; that on the left extended almost two thirds of its length, was nearly an inch in diameter, and had a granulated appearance; but that on the right tibia was not so large. The ends of the toes felt

cold and were covered with black sloughs."[32] By stimulating local applications, and the free use of bark internally, the infant perfectly recovered.

The great vascularity of the integuments, conjoined with their weak constitutional powers, appears to account for children suffering severely from this form of cutaneous inflammation, should it be excited by any cause. The most frequent causes are want of cleanliness, and the due ablution and removal of all the secretions from the child; the crowded and unwholesome state of the apartments; and especially the prevalence of puerperal fever, coincident with which it has often been observed.[33] Its contagious character seems to be beyond a doubt; the extremities and the trunk are more liable to be affected than the head; but of all parts the genitals, and the abdomen about the umbilicus, seem to be most frequently attacked, and that in the most serious manner. The progress of the disease is exceedingly rapid; Underwood says almost instantaneous.[34] The erythematous blush which at first appears, is soon deepened into a dark red or purple colour, and the part which at first was yielding and but little swollen, becomes very hard and much distended. When the erysipelas first appears upon the pubis, it extends upwards on the abdomen, and downwards upon the thighs and genitals, which then become exceedingly enlarged and anasarcous, vesications form, petechiæ and phlyctenæ appear, and the skin becomes gangrenous.

The accompanying fever is usually at first of an inflammatory character, and it is attended by very evident disorder in the primæ viæ, the secretions are always much deranged;

[32] Case of a Child born with Symptoms of Erysipelas, followed by Gangrene, by the late Robert Bromfield, M.D., Physician to the British Lying-in Hospital, in Medical Communications, vol. ii. p. 22.

[33] Ossander, as quoted in Parr's Medical Dictionary; art. Infantile Erysipelas. Lee in Cyclopædia of Practical Medicine; art. Puerperal Fever.

[34] Underwood on Diseases of Children, vol. i. p. 34, 3rd edit.

and very soon there is decided evidence of deficient power in both the local and general symptoms.

Mr. K. Wood has related some cases of serious disease in the pudenda of young girls, which he appears to consider as of a different nature from erysipelas,[35] but it seems more probable that they were only instances of this disease in an aggravated form, attacking the genitals, which speedily became of a red livid hue; vesications formed, and spreading ulceration soon destroyed the patient. Dr. Copeland[36] states that both he and Mr. Dendy have met with several cases of this description, in the Infirmary for Children; and it is by no means a very uncommon disease in children of either sex, in the crowded population of large manufacturing towns, among the children of the poor, who are often ill-clothed and fed, and still worse attended to, or, indeed, in children of any rank of life, who are unhealthy and cachectic. Though at first the fever is high, with much excitement, the strength is speedily exhausted, and it becomes necessary to support the patient by every means in our power. In very young infants the disease more frequently, in the first instance, attacks the extremities, and the abdomen about the region of the umbilicus, from which it may, and often does, extend to the genitals; but in children, who are from two to five years old, the genitals are often primarily affected. In infants, as in adults, there is the same tendency for the disease to affect the internal organs, and it is very common to find in the peritoneal cavity, the same turbid serum or semi-purulent matter, which characterises erysipeloid inflammation of this membrane in adults.[37]

[35] Med.-Chirg. Trans., vol. vii. part 1, p. 84.

[36] Dr. Copeland's Dictionary; art. Erysipelas.

[37] Underwood on Diseases of Children, vol. i. Memoirs of the London Medical Society, vol. v. p. 182, where there is related the post mortem appearances of two infants who died from erysipelas: in both there was much inflammation of the bowels and stomach, with considerable effusion.

DIAGNOSIS.

There are few diseases with which a well-marked case of external erysipelas is likely to be confounded. The evidences upon the surface of the body are so distinct and palpable, and are at once brought so directly under the cognizance of the senses, that it must be difficult to mistake them. The exanthemata with which it has been erroneously classed, are each distinguished by characters which are so peculiar to them, that it seems impossible to confound it with any one of them; nor is it likely to be confused with any of the vesiculæ or pustulæ of Bateman. From those which are acute it is distinguished by their not affecting the same person more than once, one attack seems to render the individual incapable of a second; erysipelas, on the contrary, attacks the same person many times, and a previous attack seems powerfully to predispose to subsequent seizures. In them the eruption appears at a fixed time, has an uniform character, runs a certain course, ceases at a fixed period, and terminates in an uniform manner; but in erysipelas, the precise period when the local inflammation shows itself after the preliminary fever, is not certain, but varies considerably, from a few hours to four or five days; it has no uniform character; it does not run an undeviating course, but an irregular one; does not cease at a fixed period, nor terminate in an uniform manner; — differences which are quite sufficient to show that erysipelas ought not to be classed with diseases which differ so widely from it in so many respects, and also that it cannot be very easily confounded with them. From the more chronic of these complaints it differs still more widely than it does from the acute. Even when an exanthem is accompanied, as it sometimes is, with a generally diffused redness of the skin, there can be no difficulty, because erysipelas is never so universally

diffused, and there is always present the peculiar eruption which belongs to the disease. From roseola it is distinguished by a dissimilarity in the form, course, extent, and termination of the eruption, and by the almost total want of constitutional symptoms in roseola; it is only in the mildest and most evanescent form of simple erysipelas that the slightest difficulty can arise.

So also between good instances of phlegmon and erysipelas no difficulty can arise in discriminating. In phlegmon the inflammation is circumscribed and well defined by a boundary of lymph; the swelling is at first much harder, and, from its projecting out suddenly from the surrounding healthy parts, it stands more in relief, and consequently appears more considerable than in erysipelas; as suppuration advances it does so in the middle of the swelling only, which becomes more elevated and points conically, while the skin becomes very thin and there is distinct fluctuation. (Should the abscess be seated under the fascia, the circumscribed and conical form are not so evident, nor is the fluctuation so distinct, until after the matter has escaped from under the fascia.) The colour, like the swelling, is circumscribed; it is usually of a brighter red, and does not so readily disappear on pressure, as in erysipelas; the pain, which is acute, is of a throbbing pulsating character, and is accompanied with a feeling of distension. In erysipelas the swelling is much diffused, and it is not so perceptible in any one place, nor has it any circumscribed boundary; the colour is not so vivid, and disappears readily on pressure; like the swelling it spreads and encroaches much upon the sound parts. The inflamed part for some days pits on pressure, which true phlegmon does not; the pain is rather pungent and burning, than throbbing. There is a great tendency for the formation of vesications, and also for the cuticle to desquamate. The suppuration like the swelling is diffused, and the pus has not the "laudable" properties of true phlegmon; the cellular membrane, in two

of the three varieties of erysipelas, often sloughs to a considerable extent, and when the matter is about to be discharged, there is no distinct fluctuation, or pointing of the skin, but instead, a soft yielding elastic "boggy" sensation is communicated to the finger.

In the case of phlegmonous inflammation the pulse is full and bounding, if a viscus or the cellular membrane be the seat of the attack; hard and wiry if a serous membrane be affected; and all the constitutional symptoms are indicative of strength, the irritation is accompanied by corresponding power, and depletion is well borne. In erysipeloid inflammation the pulse is more frequent, but is usually neither hard nor full; depletion is not borne well, and there is, to use Hunter's expression, over action to the strength; great irritation without corresponding power: the sanguineous system is much excited, but there is no corresponding energy in the nervous.

These indications are more than sufficient to distinguish between the two complaints, when distinct from each other; but as we find every degree of approximation between the two extremes, so do we also find the symptoms partaking more or less of the phlegmonoid or erysipeloid characters; and according as the one or the other prevails, so must we be regulated in our diagnosis and treatment. It should also be recollected, that as the causes which conduce to the diffuse form are sometimes of a temporary nature, and such as may be removed by proper management in the course of the disorder, the local action may then assume more of the circumscribed by the deposit of lymph, and the general the synochial type; so also a case which at first exhibited most of the characters of circumscribed phlegmon may, from improper treatment, the state of the constitution, or other causes, be converted into a widely diffused affection.

If the varieties of erysipelas be considered as distinct diseases, and it is wished to have laid down diagnostic marks

by which the one may be readily and decidedly distinguished from the other, I must confess that I know them not, neither do I believe they in reality exist. That, according as the affection may be principally seated in the skin, the cellular membraue, or in both structures, we may discriminate is evident, and it is useful; but if we search for well-marked boundaries between the three different forms, we shall not find them, as constant observation teaches us, and as also is proved by the fact of equally good and able writers who have attempted so to discriminate, being unable to decide to which of the two, phlegmonous erysipelas or diffuse cellular inflammation, the very same cases of illness belong, some claiming them for the former, others thinking them well-marked instances of the latter, while a third party, with more justice, has classed the two forms together as identical.

There are two affections which are generally considered as perfectly distinct from erysipelas, but which in a former chapter I have suggested may be nearly allied to it, if not positively of the same nature; these are diffuse inflammation of the lymphatics and phlebitis. Now, if either the veins or lymphatics alone be inflamed, and that to a limited extent, the diagnosis is very easy, but it is not so as the cases are often observed in practice, for the two forms are frequently complicated.

If the vein alone be inflamed red streaks are generally observed in its course; and if the limb be not too much swelled by the obstruction afforded to the return of the blood, the vein may often be felt as a hard cord under the skin, and the pain and tenderness is in a great measure limited to its course; or, if the disorder has followed the wound of, or the application of a ligature to, a vein, then we may suspect that it is the seat of the mischief, though this is not always the case, and it must be confessed that in those cases of phlebitis which are the most to be feared, it

frequently happens that, independent of their origin, there are no symptoms by which they can be distinguished from erysipelas, as a reference to the various cases on record will show. Thus, it was only after death that in many of the instances related by Travers and Duncan, it could be ascertained whether the veins were implicated or not; and Dupuytren expressly declares, that the vein being inflamed or not does in nowise alter the nature of the complaint. "After having shown you," says he, "by an example, the fatal consequences of bleeding by an awkward hand, let us pass on to the other causes of diffuse phlegmon. The ligature of a vein may also give rise to this malady, and in this case as in the preceding, the vein either is or is not inflamed; in either case the diffuse inflammation may occupy the whole thickness of the limb, or follow the course of the vessel, when it is only diffuse in the sense of length."[38] The difficulty in the diagnosis is the less to be regretted, because, from the very fact of the symptoms being so similar, and from pus being often found in the veins after death from erysipelas, the close resemblance in nature between the two is shown, and the results being so similar, the treatment must necessarily be guided by the same indications.

With regard to the diagnosis between inflammation of the lymphatic vessels and some forms of erysipelas, much the same may be said as with regard to phlebitis, both often exist at the same time: the difficulty is confessed even by those who consider the disorders distinct, as the following passage shows: "The diagnosis between diffuse cellular inflammation and inflamed lymphatics is more difficult, (than in inflamed veins.) Unless we admit superficial red streaks, not connected with the veins, running along the extremity from the place where an exciting cause is supposed to have been applied, and swelling of the lymphatic glands to which they lead, as being conclusive evidence of inflammation of the absorbents,

[38] Leçons Orales.

and the absence of these characters as proof that the lymphatics are not affected, I can point out no other diagnostic signs by which we may distinguish, during life, inflammation of the lymphatics from that of the cellular tissue."[39] That these signs are sufficient to discriminate between the two, no observer will, I think, contend; because it is well known that these red streaks are often observed in well-marked cases of erysipelas supervening upon wounds and ulcers, and also that after death from erysipelas, pus has not unfrequently been found in the absorbents, without there having been any indication during life to lead to the supposition of such a circumstance, which, if it proves any thing, proves the identity of the two affections. The fact appears to be, as with phlebitis, if the inflammation be limited and partake of the adhesive nature, as if limited it usually does, and as is often seen in a person of a sound constitution, if there be a neglected cut or small wound upon the hand or foot, the absorbent vessels become inflamed, and red streaks are observed passing along the limb from the offending point to the glands of the elbow or axilla, of the popliteal space or of the groin, which then become affected, and circumscribed suppuration takes place in them, when the diagnosis is easy; but if the constitution be unhealthy, or the exciting cause more potent, then the inflammatory action becomes diffused, the skin and cellular membrane are involved, and the evidence of disease and alteration in the lymphatic is lost in the widely-spread mischief in other tissues.

[39] Edinburgh Med.-Chirg. Trans, vol. i.; Dr. Duncan on Diffuse Cellular Inflammation, p. 621. See also Velpeau's Lectures on Erysipelas, in Nos. 663 and 664 of Medical Gazette, (August, 1840.); and Dr. Good's Practice of Physic, vol. ii. p. 297, where the difficulty in the diagnosis is fairly admitted.

PROGNOSIS.

The prognosis in erysipelas is influenced by many circumstances, both local and general, which in forming an opinion as to the result of an attack, should be carefully considered. As a rule it may be said that the cutaneous variety is the least dangerous, the cellular the most so. The former, when seated upon the extremities, is a mild disease; and even when it affects the face and head, unless it be complicated with other circumstances of a bad tendency, the result is usually favourable. So also the cellulo-cutaneous variety of erysipelas, when it appears upon an extremity, if seen at an early period, and be properly treated, is generally successfully cured; but if the face and head be the seat of the complaint, and the scalp be extensively involved, there is always danger lest it extend to the membranes of the brain. The degree in which the functions of the brain are implicated, and its membranes affected, often appears to be in direct proportion to the extent of the scalp inflamed; but, besides this, the inflammation is said, not unfrequently, to pass continuously along, from the cellular membrane of the eye-lids, through that of the orbit, and thus to reach the arachnoid membrane. Whether it be that the affection spreads from the scalp to the membranes of the brain by contiguous sympathy, or that it is propagated directly by the small blood vessels, which so freely pass through the cranium, is doubtful; probably in both ways it may be induced. Indeed, in all the varieties of erysipelas, the great disposition which there is for the viscera, or their investing membranes to become affected, constitutes one of the greatest dangers, if not the greatest, to which the patient is exposed. The cellular variety is usually the less dangerous, as it is the more limited, particularly if it first appear in the immediate

neighbourhood of the part where the exciting cause was first applied, instead of suddenly affecting a distant part; and also it is the less dangerous in proportion to the length of time which elapses, from the application of the exciting cause, to the manifestation of the symptoms. If the disorder advances slowly and progressively along the limb, from the wound towards the trunk, it is a much more favourable symptom than where the whole member, or the side of the body, is at once affected. So also it is a favourable sign if the affection appears to advance only in the course of the veins, or lymphatic vessels, rather than occupy the whole extremity, and is arrested by involving the first series of absorbed glands in active phlegmonous inflammation. In all cases the more the local symptoms are circumscribed, and the more the general are of the synochial character, the more is the disease under our control. The complaint is always exceedingly dangerous when it attacks infants or young children, particularly if the genitals are affected, the loose cellular tissue of which becomes much distended, and gangrene soon ensues; with this exception, erysipelas is more dangerous in elderly persons, than in the younger and more vigorous.

The previous state of health and mode of life exert very considerable influence over the course of the disease. Those who are in an unhealthy or cachectic condition, from previous illness, or intemperance; those who, like many of the porters and draymen in London, habitually indulge in large quantities of spirituous or fermented liquors, even though not to intoxication;[40] and those who from any cause, either

[40] I well recollect, now several years since, when one of Barclay and Perkins's draymen was admitted into Guy's Hospital, at a time when I was on duty there as dresser, with a compound fracture of both legs, occasioned by his falling off the dray and the wheel passing over them, asking him if he was "a regular living man?" "Yes, very," was the answer. "Did he ever get drunk?" "No, very seldom indeed," was the reply. "Well, then, did he drink much?" "No, pretty fair, but not out of the way." "But what did he call pretty fair?" He looked as though he did not approve of such precise questions; on being

physical or moral, are depressed and exhausted, are very liable to suffer severely from the disorder; but in the young and healthy, who are suddenly seized, under proper treatment it is much under our control and management.

Whether the disease occur sporadically or epidemically, in the country, or in the crowded wards of a city hospital, or in a camp, is to be considered. Epidemic erysipelas, which is often of a typhoid character, and has also a greater tendency, if it affect the head and face, to spread to the fauces and throat, is, on this account, more dangerous than sporadic erysipelas. When erysipelas occurs in an ill-ventilated apartment, or crowded alley, it is more likely to assume a diffused and asthenic type, than it is in the country. When it attacks a dropsical subject, it is very liable to terminate in gangrene.

A quick irritable pulse, obstinate vomiting of bilious matter, suppressed secretions, hurried respiration, a dry glazed tongue, continued diarrhœa, and low muttering delirium, or coma, are always bad symptoms, inasmuch as they denote that the viscera are more or less affected. We cannot watch too closely for this complication of the viscera; it often creeps on so slowly, and is not attended with that pain and distress which usually marks an attack of primary phlegmonous inflammation of the organ, that it has sometimes proceeded to a serious extent before it has attracted attention, or it has not been discovered until post mortem examination has revealed its effects.

The most favourable termination is by resolution, the next by limited suppuration. If towards the sixth day, or earlier, the tongue becomes cleaner and moist, the thirst abates, the sickness ceases, the alvine secretions become yel-

told that we should not know how much to allow him to have if we did not know the quantity he usually drank, he replied, "Why, then, I suppose I get somewhere about six or seven pints of porter, and seven or eight glasses of gin a day."—He died of erysipelas.

low and less offensive, the respiration easier, the mind more clear, the urine more copious and transparent, or with a free deposit of lateritious sediment, and, above all, if the pulse diminishes in frequency, we may expect the disease is about to terminate by resolution, or at least by very limited suppuration. But if, instead of these, the contrary symptoms come on, and phlyctenæ appear upon the inflamed part, either the patient will die from the internal affection, or there will be extensive suppuration, and sloughing of the cellular membrane and skin, if not of the muscles and tendons. I believe it will be found to be a rule which has very few exceptions, that if the frequency of the pulse increases after the sixth or seventh day, whatever the other symptoms may be, the patient will die.[41]

We should be particularly on our guard not to be deceived by the diminution in the violence of the local symptoms, and the mitigation of the intense fever, which often take place about the fourth or fifth day, when the complaint appears to be stationary. Not unfrequently the improvement is in appearance only, and the inattentive practitioner is only aroused from his fancied security, by finding that he has lost the time when his remedies, properly applied, might have saved the patient. If there be no diminution in the frequency of the pulse, there is the greatest probability of the attack proving very serious, if not fatal; but if about the sixth or seventh day the frequency in the heart's action begins to abate, and the edges and tip of the tongue are moist, we ought not to despair of the patient, whatever the other symptoms may be.[42] The comatose condition, from

[41] In this statement I am fully confirmed by the observations of Mr. Busk on the cases before referred to, as well as those which have since occurred to him.

[42] I am not aware that the suggestion of Dr. Stokes, of the use of auscultation in ascertaining the condition of the heart in typhus fever has been practised in erysipelas, but it appears as applicable in the one instance as in the other.

which persons sometimes recover by the judicious use of stimulants, applied internally as well as externally, is really astonishing.

Even though the acute inflammatory stage be past, if there has been extensive sloughing, and suppuration be still going on, we ought not to consider the patient as completely out of danger. The slightest imprudence in diet, undue exercise, or an ordinary cold, are sufficient to bring on diarrhœa, or a sudden effusion into one of the serous cavities, when he may be carried off in a few hours, in spite of whatever treatment may be adopted.

POST MORTEM APPEARANCES.

In an affection like erysipelas, which in its earlier stages, especially the cutaneous variety, depends upon vascular injection for most of the local changes which are produced, we should not expect that, if death take place at this period of the disease, the post mortem appearances would be as evident as those which were presented to us during life; and accordingly we find, that instead of the red, injected, swollen, integument and sub-cutaneous cellular membrane, these parts do not present any corresponding marks of derangement. In most cases the skin is pale, and the swelling has often almost, if not entirely, subsided, so as to discover very little indication of the disorder. If, however, the patient has suffered from the cellulo-cutaneous variety, and he has survived until after effusion has taken place, the appearances are not so evanescent. If at an early period, before the fourth or fifth day, there is œdema, the cellular tissue is distended with a reddish-coloured turbid serum, the tissue itself is more vascular than usual, and the fluid readily escapes from the divided cells. At a somewhat late period, the part has become more firm and solid, the distension is greater, and the adipose

globules are widely separated from each other by the effused matter, which has now become more opaque, is not so fluid, and is of a whitish or milky appearance, sometimes like soft curdy matter, and it no longer escapes so freely from the divided cells.

If the disease be still more advanced, the fluid has acquired more the properties of pus, it is of a reddish or greenish tint, and completely saturates the cellular membrane, which has become of a greyish colour, and when divided the pus escapes from the cells. Usually there is nothing like the induration seen in circumscribed phlegmon, but at times small collections of pus, which are more or less separated from each other, are observed.

If the patient has survived, as he often does until the mischief be completed, the cellular membrane is found to have sloughed and is dead, the parts are all broken down, and large detached portions of the membrane appear like "wetted tow," or "wet shamoy leather," according to the comparisons of Sir E. Home and Mr. James; but there is even then no distinct boundary between the healthy and diseased parts, which gradually and insensibly merge into each other. The cuticle is found to be removed as though by decomposition, and the skin is detached and gangrenous. Usually the fascia forms a boundary to the depth of the mischief; but sometimes, and that more especially in the cellular variety, the disorganization has extended beneath the fascia, which has sloughed, the muscles are separated from each other, and their fibres have become soft, discoloured, or black, and are easily torn. The intervening spaces are filled with matter. Dr. Duncan is inclined to attribute this change in the muscular tissue, to inflammation of the muscular fibre itself; but when we consider how little disposed the muscular structure is to the inflammatory action, when compared with the cellular membrane, and how intimately connected this is with the muscles, not only connecting

the bellies of the different muscles together, but how it enters among and envelopes the bundles of the fibres, and even the fibrilæ, of which they are composed, forming at once their medium of connection, and the matrix in which their nutrient vessels and nerves are contained; I am disposed rather to refer these changes to destruction of the cellular tissue, and with it a loss of the means of vitality to the muscular fibre, which is thus in the same manner as the skin involved in a secondary mortification, than to a destructive inflammation originally developed in the muscles themselves. I am aware of the fact which has been adduced as a strong argument by those who favour the supposition of the muscular fibre itself being inflamed; namely, that in the bodies of some who have died from the more violent and deeper seated forms of erysipelas, and also, in the rat subjected by Sir E. Home to the bite of the rattle-snake, the muscles have been found separated from their attachments to the bones; but in reality this argument is of no value whatever, because the muscular fibre itself is not inserted into the bones, it is united to the bone by the cellular membrane alone. The membrane forms a sheath for the fibres; it is at one end connected with the periosteum, and at the other continuous with the tendon, the muscular fibrilæ themselves not being absolutely connected to, or continuous with, either the periosteum or the tendon; so that if the cellular membrane be destroyed, the muscles must necessarily be detached from the bones, even though the fibres remain quite sound.

It is by no means an uncommon thing to find purulent depôts in places far removed from the situation of the disorder, and where, perhaps, during life, there had been no indications to lead to the supposition of their existence, or the matter is found to have burrowed much farther than had been supposed.

If suppuration has occurred about the pectoral muscles, after death matter has been found extending the whole length

of the back, from the neck to the nates. So also matter has been found in the opposite arm, or leg, and in joints far removed from the immediate seat of the inflammation. The same occurrence is found to have taken place in the cavities of the body. Thin pus or turbid serum are often found in the serous cavities without there having been corresponding symptoms during life, and sometimes matter is discovered in the substance of some one or other of the viscera.

The lymphatics and veins of erysipelatous parts are often found affected, and not unfrequently contain pus. How far this may depend upon the mere absorption of pus which has been deposited in the cellular membrane or other textures, through which the veins and absorbents pass, or upon the formation of pus within the vessels themselves, is doubtful, and has been already spoken of; but it is highly probable that in different cases the pus may be derived from both sources; for as in many instances pus is abundantly deposited in the cellular or other tissues through which the vessels pass, there is reason to think with the older practitioners, and Andral, that the pus found in them is the effect of absorption; but in some instances the smaller veins of an erysipelatous part are found filled with pus when none is seen in the surrounding parts, as I have myself witnessed, and as in the case related by Dr. Duncan; where, at first, on examining the back of the hand, it appeared as if matter had been formed in the cellular texture itself, but on more minute examination it became quite evident that it existed solely within the veins, the cellular membrane itself being healthy.[43]

As in phlebitis, so in erysipelas, the blood is found much changed; indeed, it seems questionable if there be any single organ which is in the same proportion of cases affected, as is the blood. It has long been known that in fatal cases

[43] Edinburgh Med.-Chirg. Trans., vol. i. p. 448.

of phlebitis, the blood is commonly found fluid and altered in its colour and appearance, so also in those cases of diffuse inflammation which are excited by poisons, the blood is usually fluid; but since the abandonment of the doctrines of the humoral pathologists,[44] it has been too much the fashion in post mortem examinations, to pass over the condition of the blood without observation, as though it were unimportant; otherwise, I am inclined to think, that after death from erysipelas, the blood would very often have been found fluid, and presenting the same appearance as after phlebitis. In the notes of the post mortem examinations of several who died from cellulo-cutaneous erysipelas, now before me, in the majority of cases, (nearly two to one,) the blood, it is stated, was found in a fluid state and altered in appearance, as though from the admixture of pus. I am fully aware that a few cases are far from justifying any general inference, but in the absence of more extended evidence they are not without interest, especially when taken in conjunction with the symptoms during life, the widely spread lesions in different organs, and the changes found in the blood after death from puerperal fever: at least they show the propriety of closely observing the condition of the blood in future examinations. Whether the microscopic examinations now so zealously pursued by Mr. Gulliver and others, will lead to any practical results, either in diagnosis, prognosis, or treatment, remains to be proved; but it seems not unreasonable to expect they will not be altogether fruitless.

In nearly all fatal cases of external erysipelas, some internal lesion may also be found, which indeed has, in the

[44] Even the older practitioners, although they asserted that erysipelas, like many other diseases, depended upon an impure condition of the blood, as a spissitude, lentor, or acidity, seem much rather to have inferred these circumstances to have existed, from the symptoms during life, than to have had any accurate knowledge of the post mortem changes, or in what these changes really differed from the natural condition.

majority of instances, proved the immediate cause of death.[45] The exact situation of these internal lesions will much depend upon the position of the external inflammation, upon previous predisposition in any organ to become affected, or some casual and accidental circumstances, which may often be traced. Thus, if the scalp be extensively inflamed, in almost every case, the membranes of the brain are involved; on the contrary, if the erysipelas be seated upon an extremity, there is not nearly the same liability for them to be affected. If the patient be a female, near confinement, or recently delivered, the uterus and its appendages, or the peritoneum, will probably show marks of diseased action. An imprudent exposure of the chest to the cold air, may induce an extension of the disease to the lungs, or pleura; and an improper diet may produce a complication, in which the alimentary mucous membrane is concerned.

The appearances found in the head, are opacity of the arachnoid membrane, injection of the vessels of the pia mater, with effusion into its meshes of turbid serum, or thin purulent matter, sometimes with a few opaque flaky patches; serous effusion at the base of the brain and within the ventricles, bloody points on slicing the substance of the brain, and occasionally pus within the veins and sinuses.

In the thorax there are often indications of diffuse inflammatory action. Imperfect adhesions between the pleura pulmonalis and costalis, with turbid effusion, containing particles of flaky lymph, are found on one or both sides the chest. The effusion, at times, is milky or of a greenish purulent character. The bronchial membrane is often congested, and the structure of the lungs is very generally more or less

[45] "It is in this form of disease that, on examination after death, we constantly find evidence of the previous existence of inflammation of the cerebral membranes, of the pulmonary and of the intestinal mucous surfaces, the cutaneous affection being, in fact, but a small part of the disease."—Dr. M'Dowell, in Dublin Journal for October, 1834.

abnormal: in some cases there is merely congestion, with œdema, but frequently there are the evidences of pneumonia having existed, and very commonly pus is diffused through the pulmonary structure, as though the air cells were filled with it, and on slicing the lungs it readily escapes; altogether this appearance is different from the induration which results from primary pneumonia. The heart has not been so often noticed to present any change; in some cases pericardial effusion has been found, and in a few instances, particularly those where the blood has been noticed to be changed in appearance, and to be fluid, the lining membrane has been seen of a red colour.

In the abdomen, as in the thorax, there is often found turbid serous effusion, with numerous portions of curdy lymph, or thin purulent matter; both often are seen in large quantities. The serous coat of the intestines and omentum is frequently injected, and slight adhesions are not uncommon. The mucous membrane of the alimentary canal is usually more or less affected, as is that of the larynx and trachea. The most common appearance is congestion; but if the disease has particularly involved the larynx and fauces, then there is effusion in the sub-mucous cellular membrane, or in the cellular membrane exterior to the cartilages, and the mucous follicles are enlarged or ulcerated. The mucous lining of the stomach is often softened; and in the intestines, both the Brunnerian and Pyerian glands are often much developed, vascular, and sometimes ulcerated. In ten out of eleven cases of dissection of the bodies of those who had died from erysipelas, in the hospital of la Charité, in Paris, Dr. Corbin detected very decided lesions of the abdominal organs, principally of the mucous membranes of the stomach and intestines.[46] Pus is not unfrequently disseminated through the viscera, principally in the substance of the liver. The frequency of these visceral affections in erysipelas has been

[46] Journal Complement: 1831.

particularly pointed out by Dupuytren, who says, he has opened a heap of bodies (foule de cadavres) of those who have died in consequence of diffuse phlegmon, and that he has observed among those who perished towards the end of the malady, the external inflammation itself was much less the cause of death, than an internal inflammation, produced by some imprudence. Pleurisies, pneumonia, and abscesses of the liver have been noticed, and these maladies have happened after the patient has exposed the face, neck, chest, or limbs to the cold.[47]

[47] Leçons Orales, vol. ii. p. 61, Brussels edit., 1836.

TREATMENT OF ERYSIPELAS.

If different opinions have existed, and still continue to exist, respecting the nature and causes of erysipelas, the subject of treatment has afforded opportunity for the most opposed theories; and even now, the practice pursued by different persons is of the most dissimilar and contradictory nature: while one party relies upon blood-letting, freely and repeatedly performed, as the surest or only method of cure; another, and perhaps larger party, certainly as respectable, so far as authority goes, utterly repudiates the abstraction of blood, and depends upon tonics and cordials for the removal of the complaint. Indeed, so confidently are the most opposite remedies enforced, and so contradictory are the results said to follow the application of the same means, in the hands of different persons, equally worthy of credit, that the impugner of medical skill may fairly point with confidence to this part of our field, and demand if such contradictions are worthy of the name of a science, or of trust. It must be confessed by the most devoted admirer of medicine, that either diseases bearing no analogy to each other, have been classed together under the same denomination; that practitioners are so far blinded by pre-conceived opinion, and reliance upon names and authorities, as to be incapable of fairly and impartially observing the nature of a disease, and the effects of applications and treatment; or, lastly, that the disorder pursues its course uncontrolled, in spite of the vigorous administration of so-called remedies. It is unnecessary here to discuss which of

the three suppositions may be the most to be blamed; perhaps all may more or less have operated, but certainly the last less so than the two former. It is impossible that such means as have been had recourse to in the treatment of erysipelas can have had no influence over the course of the disease; wine, bark, and ammonia, cannot be given every hour without some effect; neither can pounds of blood be abstracted without the system feeling it, nor can incisions, which require the foot or yard measure to meet their extent, be inflicted without some result.[1]

It is the unreasonable and improbable expectation and desire, that some marked and decided change should immediately ensue after some particular remedy has been prescribed; or, perhaps the still more reprehensible conclusion, that because in some isolated cases, a change in the course of the disorder has accidentally and unconnectedly followed an application, that they are to be looked upon as cause and effect; that are rather to be blamed than the want of power in remedies. But what is still more serious is the supposition, perhaps, even now, too widely spread, that any means which have been successfully and judiciously used in one case of illness, are therefore indiscriminately to be employed in another, which bears the same name, regarding rather the name than the nature of the thing: for which error the term specific disease is, in part at least, accountable. If, however, guarding against these errors, we carefully analyse and compare a great many cases of erysipelas, taking into the account all similar, as well as all opposing circumstances, and carefully separating the accidental from the usual effects, we cannot but conclude, that in this, as in most other acute diseases, treatment has a most decided controlling power over its course and results.

[1] In Mr. Earle's Paper, in vol. lvii. of Medical and Surgical Journal, there is related a "case of cellular inflammation, in which an incision was made which extended from an inch below the great trochanter to within an inch and a half of the ankle."

The indications to be fulfilled in the treatment of erysipelas, and indeed of every disease, are three.

I. To arrest the progress of the disease in its commencement.

II. If this cannot be accomplished, or the disorder has advanced too far before it has been observed, to guide the patient through the illness with as little mischief as possible. And,

III. The disease itself being subdued, to remove, as completely as may be, the effects of it.

To those who regard erysipelas as strictly a specific disease, and a true exanthem, the first indication will appear useless, because impracticable; since some of these parties deny that erysipelas can be arrested in its progress, and maintain that, on the contrary, it always runs an uniform period,[2] like measles or small-pox. That the duration of erysipelas may generally be tolerably uniform, after the disorder is fully established, may probably be the case; but that in the early stages, if properly treated, it is never arrested, I am by no means prepared to admit. On the contrary, I believe that within the first three days, from the commencement of the febrile symptoms, and the earlier the more certainly, it may be and often is arrested, at least if we may judge from analogous appearances, for attacks which threaten in every respect to become serious cases of erysipelas are found to disappear altogether. Every practitioner, who has had under his care persons who are obnoxious to repeated attacks of erysipelas, must have noticed, that where the symptoms, both local and general, are at first identical, the disorder at one time will assume a formidable shape, and at another terminate in a short time, the cutaneous affection never having advanced beyond a mere blush; he must also have remarked that these different results depend much upon

[2] Lee on Puerperal Fever, in Cyclopædia of Practical Medicine, vol. ii. p. 260.

the treatment employed : an emetic, followed by a dose of calomel and a brisk purgative, so as effectually to clear out the primæ viæ, is by far the most certain method of accomplishing this favourable termination.

So frequently have I seen this difference in the results that it has left no doubt as to its reality in my mind,—just as the same effects are seen in the commencement of continued fever. Were it necessary, cases might be related in support of this opinion, but I cannot suppose that such cases have not been observed by most practitioners.

It is, however, only in the early period of the disease that its farther progress can be stayed ; if it has advanced so far that the cutaneous or cellular inflammation has become extensively developed, its arrestment must not then be looked for, and our expectations and endeavours should be directed towards rendering the attack as harmless as possible.

For erysipelas there is no specific : we must be contented by attempting to restore the functions and secretions of all the organs of the body to their natural condition. It is evident, that if there is much febrile action it should be lessened ; if there be active local inflammation it must be controlled. If there be acute visceral disease, our treatment must be energetic and prompt in proportion to the activity of the disease, and the importance of the part affected ; if the abdominal secretions be unnatural they must be corrected ; or if there be depression and irritation, the system must be supported and soothed, such as in fact are the general indications to be attended to in the treatment of all diseases. The difficulty is in the selection and application of the precise measures to be used, and the proper time for applying them with the most effect and advantage.

The remedies are most conveniently divided, as is usually done, into two classes, general and local,—those which act upon the system generally, and those which are applied directly to the part affected. In estimating the applicability

of any plan of treatment, or the extent to which any remedy should be administered, there are many circumstances which ought carefully to be considered; as the seat of the attack and the extent of it, the period of the complaint, the age and strength, previous habits, and condition of health of the patient. Nor should the locality, or the state of the atmosphere, be altogether overlooked; nor, whether the disease be raging as an epidemic, or occurring only in isolated cases. I propose, therefore, in the first place, to pass separately in review the principal remedies, or classes of remedies, which have been extolled as peculiarly applicable in the treatment of erysipelas, which will afford a better opportunity for carefully examining the value of these remedies; and afterwards to give a brief outline of what may be considered the treatment most proper to be pursued under ordinary circumstances in each of the three varieties.

GENERAL TREATMENT.

VENESECTION.

As the opinions of practitioners are so much opposed to each other on the propriety of bleeding, and as it is a most important question, which still remains undecided, I shall place before the reader the statements of several who have expressed themselves on this point, not that (as I have before remarked) in any enquiry names and authorities ought to usurp the province of observation. But no wise man will think himself justified in forming a positive opinion on such points, without weighing maturely the practice of those who have attended to the subject; for though we may not adopt their views, it will, at least, have the good effect of preventing us from falling into a totally different, but equally exclusive, and consequently erroneous practice.

It is really curious to observe, how contradictory the evidence is as to the utility of blood-letting; and the more so, because, in a remedy which acts so directly and so powerfully, we might suppose that if in any one agent conformity of opinion could be obtained, it would be on this. Those who represent erysipelas as from the commencement attended with evident signs of debility, not only strictly forbid the use of the lancet, but at once have recourse to stimulants and tonics, especially to the preparations of cinchona bark, lest those symptoms of putridity which they so much dread should set in; while, on the other hand, those who contend, and they are many, that in all cases, erysipelas is a disease of an inflammatory character, as strenuously recommend the free use of the lancet.

The quotations may be arranged in three divisions; those which deprecate the use of the lancet and insist upon the advantages of tonics: those which neither altogether forbid the lancet nor indiscriminately recommend stimulants: and those which maintain the advantages, as a rule, of the free abstraction of blood.

"I must remark," says Mr. Bromfield, "that from the first appearance of this disorder, (epidemic erysipelas of the face,) it was termed erysipelas, and was in consequence treated as such by bleeding, purging, and cooling medicines, for the most part with very bad success. On remarking that under this practice the face generally subsided and the patient died, it was thought necessary to change the plan of treatment. Those I saw afterwards were supported by cordials and the *bark*, and blisters were applied as they became necessary. If stools were wanted clysters were preferred to aperitives given by the mouth. By this method most of those who were attacked by this disorder recovered."[3]

"There are many practitioners in this country," says Dr. Fordyce, "who still adhere to the treatment of erysipelatous

[3] Bromfield's Chirurgical Observations, vol. i. p. 108, 1773.

inflammation and those of the mucous membranes when pure, by bleeding and other evacuations, which I have always found hurtful;" instead of which he recommends Peruvian bark "to be exhibited in substance, if the patient's stomach will bear it, and in this disease it will almost always bear it, and in as great a quantity as the patient's stomach will bear, which is commonly to the quantity of a dram every hour."[4]

In the same volume Dr. Wells has an interesting paper, where the same practice is warmly advocated, because he does not consider that there is any inflammatory condition of the system in erysipelas.

Mr. Pearson's opinion of bleeding is thus expressed: "General bleeding is not recommended in this place as a cure for Erysipelas, in the same sense in which it may be said to remove an Inflammation; it is advised with the intention of obviating the effects produced in the system by so severe a stimulus as Acute Erysipelas. Indeed cases very rarely occur in large towns, where bleeding is at all admissible; and a repetition of the operation, will very seldom be necessary or advisable.....General bleeding is inadmissible, almost without exception (in œdematous erysipelas). The propriety of topical bleeding is chiefly applicable to those cases where there is danger of an affection of the Brain: but very great nicety is required in determining upon this evacuation, where there is the least disposition to a *Metastatis*. I have seen the most dangerous symptoms immediately supervene to the loss of a very small quantity of Blood."[5]

Pott, in guarding against depletion in erysipelas, says, "If blood be drawn off in such quantity that the patient's pulse sinks suddenly, or if his strength be considerably reduced by purging, it is no very uncommon thing for the

[4] Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. p. 293.

[5] Pearson's Principles of Surgery, pp. 211, 214.

inflammation to leave the part first affected, and for such complaints to come on immediately, as soon prove destructive, and afford no opportunity to repair the mischief which the evacuation has produced."[6]

Heberden had great fears of blood-letting, or other evacuations. He says, "Natura hujus morbi videtur esse plerumque maligna, ut medici loquuntur, potius quam inflammatoria: id est, neque postulat, neque ferre potest, purgationam alvi, aut sanguinis detractionem. Vidi res ægri in pejus ruere, non sine periculo, non solum ex incisa vena, sed etiam ex dato medicamento quod leniter alvum solvit, idque cum morbus jam inclinatus esset."[7]

"The disease was more obstinate and severe when the patient had been bled before admission into the hospital, and especially when it had been twice or thrice repeated,"[8] says Desault.

Dr. Butter tells us that out of those who had the disease (diffuse cellular inflammation, of Duncan,) in the Dock-yard at Devonport, in 1824, fifteen had it in its malignant form, and that twelve of those died of it. That two out of these three had *not* been bled, and that of those who were bled from the arm, only one recovered: the others all died. And it is evident Dr. Butter regards the venesection as promoting, if not actually inducing, that event.[9]

Dr. Willan speaks decidedly. "This practice," of blood-letting, "must evidently be improper in the three forms of erysipelas last described, (viz. e. œdematodes, e. gangrenosum, and e. erraticum,) and even in the erysipelas phlegmonodes it does not always appear necessary. When the blood drawn is sizy, practitioners are often induced to bleed a second time;

[6] Pott's Works, vol. iii. p. 57.

[7] Heberden's Commentarii de Morborum Historia et Curatione, p. 147.

[8] Œuvres Chirurgicales de P. J. Desault par Bichat, tome ii, p. 589, Paris, 1801.

[9] Butter on Irritative Fever, p. 23.

but we generally find in London that repeated blood-letting aggravates the symptoms and protracts the disease. In a comatose, or apoplectic state, the application of leeches, or the cupping-glasses at the nape of the neck, may be advisable."[10]

Bateman employs nearly the same words: "Blood-letting, which has been much recommended as the principal remedy for the acute Erysipelas, is seldom requisite; and unless there is a considerable tendency to delirium or coma, cannot be repeated with advantage, at least in London and other large towns. Local bleeding and blistering may be substituted in such cases."[11]

John Abernethy says, "With respect to blood-letting, I may add that I do not think we are warranted to bleed in cases of irritative inflammation and fever, because these maladies are indicative of weakness, and likely to induce, as a consequence, a greatly augmented debility."[12]

Dr. Good is, of all writers, the most opposed to bleeding, as the following passage shows. "The mode of treatment may be expressed in a few words. Venesection was formerly recommended as a part of the ordinary plan, and has been so of late by a few writers. Yet this is to act without discrimination, and to mistake the exception for the general rule. Passing by the modifications just adverted to, and those occasional congestions in the larger organs, and especially in the head, which even in typhus, and still more in such forms of erysipelas, demand a prompt and repeated use of blood-letting, I can conceive very few ordinary cases, in which the lancet has a chance of being serviceable, while the application of leeches always exasperates the efflorescence. As a general plan, we should first cool the body by gentle laxatives, and instantly have recourse to a tonic plan. The

[10] Willan on Cutaneous Diseases, p. 504.

[11] Bateman's Synopsis, p. 186, 7th edit., by Thomson.

[12] Letter from Abernethy to Dr. Butter, in his Work on Irritative Fever.

bark given largely, as long since warmly and judiciously recommended by Bromfield and Colly, has rarely failed of success."[13]

Though the three following extracts do not, in direct terms, say bleeding is not to be practiced, indirectly they in the strongest manner discountenance the practice.

"In St. Thomas's Hospital the free and successful exhibition of the bark, has been long established as a cure for those fevers that are attended with erysipelas, and I have myself seen its success in private practice repeatedly. At the time we first exhibited the bark to infants, in 1768, we were not so well assured of its general efficacy."[14]

In the same volume Dr. Bromfield, in relating a case of infantile erysipelas, speaks to the same purpose, or still more strongly.

When speaking of the treatment of erysipelas, Sir A. Cooper says, "In this town the following plan is pursued, and which for London is undoubtedly the best:—You at first give calomel, for the purpose of restoring the secretions of the liver and intestines; then allow a generous diet, and administer the ordinary tonics; or, from what I have witnessed, I would advise you to try the sulphate of quinine; it is a most powerful tonic, excites in the stomach a genial warmth, and will often remain in that organ when bark will not."[15]

I next pass to those authors, who, if they seem to entertain fear of blood-letting, yet do not proscribe it altogether; still less do they insist upon the necessity of at once administering bark, wine, or ammonia.

"Bleeding and Purging seem not to be so necessary in an Erysipelas as in a Phlegmon: for whatever is corrupted of the Juices in an Erysipelas, as it lies near the Skin, seems to be much more easily dischargeable by Sweat; but

[13] Good's Study of Medicine, vol. iii. p. 77, 3rd edit.

[14] Dr. Gartshore in Medical Communications, vol. ii. p. 39.

[15] Cooper's Lectures on Surgery.

when the Heat is too great, and the Pulse too high, and the Blood too abundant, Bleeding in that Case cannot but be judged proper."[16]

"Emetics, purgatives, and bleeding, frequently invite the matter back into the blood, whence a high fever, intolerable pains in the stomach, and other dangerous symptoms, which do not yield till the eruption re-appears.....If the patient be plethoric, and accustomed to spirituous liquors, it is advisable to bleed at the beginning, particularly if the disorder affects the head."[17]

"In general, we may venture to say, that the lancet is seldom necessary for the cure of erysipelas." Also, "that cases occur, in which (particularly towards the conclusion) the strength of the patient requires to be supported by broths, wine, &c., and when the free use of bark, with aromatic cordials, is requisite to check the tendency of gangrene. At the same time I think it a duty to declare, that from the injudicious use of those medicines, in the beginning of the disease, I have often seen the tendency to gangrene accelerated; nay, evidently brought on by the very means employed to prevent it."[18]

It admits of a question if Cullen should not be placed amongst the decided advocates of bleeding in erysipelas, but as the first sentence is modified by the second, I have placed the quotation in this place. "Upon this conclusion the Erysipelas of the face is to be cured very much in the same manner as phlegmonous inflammations, by blood-letting, cooling purgatives, and by employing every part of the antiphlogistic regimen.....We have hitherto considered erysipelas as in a great measure of a phlegmonic nature, and agreeably to that opinion we have proposed our method of cure. But it is probable, that an erysipelas is sometimes attended with, or

[16] Heister's Surgery, p. 213, 8th edit., 1768.

[17] Hoffman's Practice of Medicine, vol. i. pp. 201 and 202, 1783.

[18] Dr. Carmichael Smyth in Medical Communications, vol. ii. p. 190.

is a symptom of a putrid fever; and in such cases, the evacuations proposed above, may be improper, and the use of the Peruvian bark may be necessary; but I cannot be explicit upon this subject, as such putrid cases have not come under my observation."[19]

"It is often useful that general bleedings should precede the application of leeches.....If the phlegmon is decidedly developed in consequence of a bruised or lacerated wound, and there is swelling and œdema of the neighbouring cellular tissue, then one or two small bleedings may be advantageous; I say *small*, for by large sanguineous evacuations, it may be feared, and with reason, that the patient may be thrown into a grievous adynamic or even ataxic condition."[20]

Louis having made an experimental trial of the effects of bleeding in erysipelas and other acute disorders, as compared with those cases in which it was not practised, arrives at the following opinion: "So that if we cannot conclude that the bleeding has been injurious, at least, we must acknowledge that its utility is far from being shown."[21]

"The necessary quantity of blood may, in many cases, especially of erysipelas from local injury, with more advantage be taken from the part, as before stated; but in the idiopathic erysipelas, especially of the face, or in other cases where the local depletion does not produce an adequate impression upon the general system, venesection is preferable. I am not, however, prepared to believe that bleeding can be relied on as a cure for erysipelas, but rather that its legitimate use is to keep the inflammatory action within safe bounds, till the faulty state of the constitution upon which it depends can be corrected, and so conduct the disease

[19] Cullen's First Lines of the Practice of Physic, vol. ii., pp. 265 and 270, edited by J. G. Rotheram.

[20] Dupuytren's Leçons Orales, Phlegmon Diffus.

[21] "Sur les effects de la Saignée, dans plusieurs maladies inflammatoires" in the Journal de Médicine, vol. xviii. p. 331.

through the stages which it naturally passes. Bleeding inopportunely employed will exhaust the patient sooner than the disease, which will spread under its liberal use, or appear in a different part of the body."[22]

Dr. Copeland directs that in the young and plethoric bleeding be had recourse to, yet gives the following caution: "Even in the most acute and inflammatory cases, large depletions should be employed with much circumspection, for however high, bounding, or hard the pulse, or great the heat may be, there is always, owing to the circumstances above explained, a disposition to asthenic vascular action, and a deficiency of vital power. Blood-letting, especially venesection, should, therefore, be resorted to early in the attack, and should not be solely or even chiefly relied upon; the reduction of the excited action forming only one of the intentions of cure; and blood-letting being only one of the modes of fulfilling it."[23]

In speaking of the treatment of erysipelas and erythema, Mr. Liston, while he does not altogether forbid it, yet recommends us to be very cautious in these cases of resorting to blood-letting.[24]

The following quotations may be adduced to support those who advise general bleeding, as one of the chief indications to be fulfilled in the treatment of erysipelas.

"To answer the ends, as soon as I am called," says Sydenham, "I direct a sufficient quantity of blood to be taken away from the arm, which generally resembles the blood of pleuritics. The next day I give my common purging potion, and exhibit a paregoric draught at bed time, in case it has operated briskly, e. g. syrup of white poppies in cowslip flower water, or something of the same

[22] James on Inflammation, p. 404, 1832.

[23] Copeland's Dictionary; art. Erysipelas, p. 828.

[24] Clinical Lecture on Erythema and Erysipelas in Lancet vol. xxix. p. 329. See also Elements of Surgery, 2nd edit. p. 61, 1840.

kind." "Take away nine or ten ounces of blood from the arm, and next day exhibit my common purging potion. If the first bleeding does not cure the disorder, have recourse to the operation again, and this failing, repeat it twice more, interposing a day between each bleeding."[25]

B. Bell says, "Almost an universal prejudice has prevailed against blood-letting and other evacuations in erysipelas. And as it is commonly supposed to be attended with some degree of putrescency, instead of evacuations, bark, wine, and warm stimulating cordials, have been recommended. It appears, however, that the ideas of practitioners on this point have not been founded on observation; for it is now known, that in every case of erysipelas, blood may to a certain extent be evacuated with safety; and by so doing, and adhering in every respect to an antiphlogistic regimen, we will in general be almost certain of preventing the disease from terminating in those effusions which have been mentioned, and which at all times we should endeavour to prevent."[26]

Dr. Duncan, jun. is very decided upon the advantages of blood-letting. After relating ten cases of erysipelas, in most of which bleeding was employed, he adds, "These cases sufficiently prove that there is nothing in the nature of erysipelas essentially different from other inflammations. In ten cases occurring in immediate succession, the antiphlogistic treatment generally was employed with decided advantage. Two or three cases only were not bled, because they were so slight as not to require it; and wine was given to one patient only, in a state of extreme exhaustion from chronic disease. It cannot be said that these cases were all of that variety called phlegmonoid, which has always been considered to require some depletion; for in their external appearance, they presented every variety of form; and they occurred in

[25] Sydenham's Works, by Swan, pp. 282 and 617.

[26] B. Bell's Surgery, vol. v. p. 379, 1787.

patients of both sexes, at different ages, and in opposite states of previous health; and, as I have repeatedly said, they were not selected as suited to the treatment employed, but were all that occurred."[27]

Such also appears to be the opinion entertained by Dr. Stevenson as to the value of bleeding; for he says, "Copious and repeated bleeding, with brisk purgatives, and in every case where the throat was severely affected, the application of a large number of leeches to the neck, appeared to me to be the treatment which was most successful. All the cases that came under my management, both of the common erysipelas, and of the affection of the throat, were treated in this manner."[28]

"The importance of emissions of blood," says Rayer, "in the treatment of simple erysipelas which extends over a large surface, or where it is complicated with other disorders more or less serious, appear to me to be demonstrated, (sont donc pour moi une vérité démontrée,) but to be useful the bleedings ought to be large, and practised at the commencement of the disease, of which they often moderate the symptoms, though they rarely prevent them. If employed with too much reserve, or at a period too far removed from the commencement of the disorder, they neither prevent the ulterior progress of the inflammation of the skin and subcutaneous cellular membrane, nor the more or less important sympathetic lesions which may supervene."[29]

"When the head is concerned, blood should almost always be abstracted freely by venesection; and it is only when the patient's system is extremely weak that an opposite method ought to be pursued,"[30] says Mr. Symes.

Dr. Mackintosh and Dr. Craigie are both decided advo-

[27] Edinburgh Medical and Surgical Journal, vol. xvii. p. 561.

[28] Edinburgh Med.-Chirg. Trans., vol. ii. p. 131.

[29] Rayer's Traité des Maladies de la Peau, par. 233.

[30] Symes's Principles of Surgery, p. 617, 1832.

cates for copious venesection, and when from age or great debility it cannot be practised, they apply leeches freely. The first says, "I know of no remedy so decidedly and immediately efficacious as general bleeding, if it be performed sufficiently early in the attack, and in constitutions not greatly debilitated by previous disease or bad habits."[31] The latter, that, "though many disapprove of blood-letting in the treatment of Rose, I can assert from pretty extensive trial, that in the acute inflammatory form of the disease it is not only not injurious but indispensably requisite."[32]

"In general, blood-letting is indispensable; and when the disease occurs in the face and scalp, it is necessary to bleed largely and repeatedly, till the head-ache and other symptoms denoting cerebral affection are removed." This positive direction of Dr. Tweedie is, a little afterwards, thus guarded and modified: "Phlegmonous erysipelas occurs not unfrequently in persons advanced in life, or in individuals whose powers are feeble; in such cases, and in the later stages of the disease, the active measures just recommended would not only be injudicious, but positively injurious."[33]

But of all writers who advocate the utility of venesection, Mr. Lawrence, as he is one of the latest and ablest, so he is one of the most determined. "I am quite at a loss," says he, "to discover in this affection those marks of debility which some have so much insisted on." "As this affection resembles other inflammations in its causes, symptoms, and effects, so it must be treated on the same principles; that on the antiphlogistic plan. Venesection, local bleeding, purging, and low diet, are the first measures, to which saline and diaphoretic medicines may be afterwards added. The earlier these means are employed the better; vigorous treatment in the beginning will often cut the attack short, and

[31] Mackintosh's Practice of Physic, vol. ii. p. 268, 1836.

[32] Craigie's Elements of the Practice of Physic, vol. ii. p. 476, 1840.

[33] Dr. Tweedie in Cyclopædia of Practical Medicine; art. Erysipelas.

prevent the disease from spreading beyond its original seat."[34]

These quotations might readily be multiplied in favour of either the stimulating, the intermediate, or antiphlogistic plans; but what has been cited, will probably be thought quite sufficient to show the utter want of agreement in the treatment of this formidable disease, where, what by one writer is considered essential to the safety of the patient, is, by another, regarded as positively injurious, or even deadly. Were we to be guided alone by authority and names it would be difficult to choose between the two exclusive methods, of powerful tonics or vigorous blood-letting; for, on both sides are ranged men of great talent, extensive experience, much practical skill, and undoubted veracity. Moreover, their practice has extended over so long a period of time, that mere change of fashion will not account for such diametrically opposite opinions. Something may perhaps be allowed for the different circumstances under which the disease has been observed, but I am not inclined to attribute very much weight to this; for although assuredly, diseases do at one period assume more of the inflammatory character, and at another exhibit more of an adynamic tendency, this variation is not sufficient to account for the totally opposite treatment proposed. The differences in the features of a disease are never so great that every thing but the name shall be changed; which certainly would be the case, were both the plans so confidently recommended in erysipelas, correct. Indeed, these periodic differences are very possibly not quite so great as has by some been supposed, and if they were, it would not be satisfactory in the

[34] Lawrence in Med.-Chirg. Trans., vol. xiv. pp. 28 and 39; see also the Essay, passim. Also Cases and Observations by Mons. Duborg, in Journal de Médicine, for 1826, vol. x. p. 584, Paris; S. Cooper in his Notes to the third edition of Good's Study of Medicine, vol. iii. p. 72; and Mr. Tripe, (who is quite at issue with Dr. Butter, upon the very same cases of Dock-yard Fever at Devonport,) in Medical and Physical Journal, vol. liv. p. 175.

present instance; because the opposite directions come from parties who practised at the same date and in the same place. The probable explanation is much rather to be found in the fact, that the minds of the exclusives on either side are too often occupied by preconceived notions of the disease, which in medicine, as in every thing else, if carried too far, is most dangerous. On the one hand, those who have been accustomed to consider erysipelas as essentially and necessarily dependent upon irritation and debility, have seen every thing through this medium; and have, as a matter of course, fearing, by depletion, farther to increase it, at once had recourse to such remedies as they thought calculated to support and increase the strength; on the other, those who have asserted that because the local action exhibits an inflammatory character, and concluding that inflammatory action is always one of increased energy, have supposed that the general disturbance must necessarily and invariably present a sthenic character, and declared that bleeding, as the most powerful means of subduing this condition, ought immediately and actively to be employed. Both have been equally blinded by prejudice, and have rather been guided by the name than carefully examined the symptoms as they presented themselves in each case. Giving to each statement a due degree of attention, we should, upon testimony alone, conclude, that in the treatment of erysipelas, no one undeviating plan can in all cases be followed, but that each may occasionally be right, both often be wrong—a conclusion which bed-side observation will confirm.

In a disease ranging, as erysipelas does, from a mild and unimportant affection of a limited portion of the skin alone, to a disorder in which not only the whole surface of the head and face, or the skin and cellular membrane of an entire extremity, but also one or more of the viscera or their investing membranes are involved; attacking the young and plethoric, as well as the old and infirm; those of good con-

stitutions, and with unimpaired viscera, in common with the broken-down drunkard and cachectic person; presenting as it does, every shade of difference, from a limited phlegmonous abscess, with a high, hard, and bounding pulse, to a widely diffused disorganization of the skin and cellular membrane, with hurried, weak, irregular, and thready pulse, and low muttering typhoid delirium or coma; it is altogether out of the question to assert that our treatment is to be uniform, it must be as diversified, and present as many shades of difference, as the symptoms which demand its employment.

Bearing then in mind that which chiefly distinguishes phlegmonous from erysipelatous action, and probably determines why the one form of inflammation rather than the other is developed, viz. that in the former there is increased action with corresponding power, in the latter increased action without the power to act with; and, consequently, the constant tendency, however much the two forms may, in the commencement of the attack, appear to be mixed, for the latter condition to predominate, if by bleeding or other evacuants much depression be induced; and especially never forgetting how much more rapidly we can take away power than we can restore it, we must, in each case, be guided by the symptoms and circumstances alone.

If the patient be young and plethoric, the cellular membrane involved, the swelling limited and hard, the skin florid and tense, the pulse full and strong, or if smaller, incompressible, and any internal part be actively affected, and not *merely congested*,—more especially the lungs or brain, we ought not to hesitate at once to have recourse to venesection, and to abstract as much blood as these various circumstances may indicate. If need be, the bleeding may be repeated, but it is much more effectual to practice at once a moderately large bleeding, than several small ones. Bleeding is more especially to be employed in the earlier stages of the complaint, when loss of blood is more effectual, and also much better borne,

than at a later period. Indeed, there are very few disorders where it is prudent at an advanced stage to bleed, even though there be much irritation present, because then this irritation is much more dependent upon the effects of the disorder, which no bleeding can remove, than upon the disorder itself.

If, however, the patient be old, or enfeebled by previous illness or dissipation; if there be any organic visceral disease; if the swelling be extensively diffused, and moderate, not hard, nor very rapidly spreading; the skin dark and not tense, with no great heat; the pulse very quick and easily compressed, even though broad, or small and irregular, with no *active* complication of the viscera, or there be low typhoid delirium, then general bleeding in any form should not be practised, but mild support or stimulants should be administered according to the degree of weakness.

Another circumstance, which should not be altogether overlooked in determining upon the propriety of abstracting blood, and the quantity to be drawn, is that referred to by Willan, Bateman, Pearson, Cooper, and others; as to the locality of the patient, whether he be in the country, or in the crowded part of a large town. Dr. Duncan and Mr. Lawrence treat the opinion that patients in large towns support depletion worse than those in the country as ridiculous; the latter asking, "at how many miles bleeding becomes safe or proper, and what size or population of a town renders it inadmissible?" Nevertheless, I conceive the opinion of Bateman, and those who coincide with him, is founded upon reason, and supported by experience. There can be no doubt, that on the whole, those who constantly reside in large towns are not so liable to high inflammatory action as those who live in the country, and that the latter not only will bear, but also require, more active antiphlogistic treatment in the same disorders that the former do. I do not intend to assert that no cases either of erysipelas, or other acute illnesses, are ever witnessed in large towns, in which the symptoms are not such

as to require the most active antiphlogistic treatment of every kind, nor that every case which occurs in the country presents under all circumstances high sthenic action. Persons are found in the city as strong and plethoric in every respect, as are met with in the country; and also others are seen in the country who are weakly and debilitated; but I maintain that the mass of inhabitants who live in the crowded lanes and dirty alleys of populous cities, though not to be called ailing, yet as a whole, are not in such robust and bounding health as those who reside in the country, and follow agricultural employments. Besides this, in a large crowded hospital, there are many circumstances, all of which tend to lessen that invigorating and stimulating action of the air, which it possesses in so marked a degree in the open country, and all of which tend to produce a lowering effect upon the whole system. Chemistry may not detect any alteration in the composition of the atmosphere, nor enable us to speak positively as to what it depends upon; but, nevertheless, experience fully shows its existence. Look at what has so often taken place in besieged cities, camps, jails, lunatic asylums, infirmaries, lying-in hospitals, and other places, where many human beings, (and I might add animals, for the same effects ensue when they are huddled together) are crowded into a confined space, epidemic diseases of an asthenic character have often prevailed, of a sthenic never. Though attention to cleanliness and ventilation may do much, they cannot altogether remove that which is inseparably connected with the mere congregating of many persons together, more especially when they are either sick or wounded. Upon what this may essentially depend, whether upon a deterioration in the vital properties of the air, or upon an actual emanation from the person, or some other less known causes, this is not the place to discuss, but satisfied I am that such an effect does exist.

On the whole we must conclude that erysipelas is not one of those disorders for the cure of which venesection should

form a prominent part of the treatment, and if not practised within a few days after the commencement of the attack, ought not, except under very extreme circumstances, to be practised at all; and I believe there are few cases in which the patient does not recover much sooner if general bleeding has not been practised than where it has. Bleeding is especially adapted for those disorders where it is of importance to produce an immediate effect upon the system, not only by the removal of a large quantity of the circulating fluids, but by the present and direct influence the sudden abstraction of the blood has upon the nervous system. Erysipelas is not a disorder of this kind, it cannot be removed in this way, and in the great proportion of cases, the fluids may be sufficiently, and much more naturally, removed in other ways. A careful and watchful practitioner, who is not afraid to use other remedies promptly and actively, will generally prevent the symptoms from assuming that condition in which, whatever the subsequent consequences may be, the immediate are such, as to demand instantaneous relief by the unloading of the sanguineous system. Inflammation is not always *an active condition* in the sense the word is often employed, neither will the *free* abstraction of blood, even if adopted previously to its development, as though to be beforehand with it, always prevent its occurrence, as numerous cases in which patients have been "prepared for an operation," show; and there are other means, if not always as prompt, often quite as effectual, in removing it so far as the part where it is situated is concerned, and always with much more advantage to the system. Large bleedings are the resources of a barbarous or uncultivated state of medicine, and at the best are only palliatives, at least in such diseases as erysipelas; they merely remove a portion of the blood, but they neither alter the condition of that which is left, nor do they prevent the formation of more of precisely the same character. It is to the alteration of the whole quantity that we should rather

direct our attention, than to the mere removal of a small portion of it. It is an easy thing for the purpose of producing an immediate effect, or "knocking the disease on the head," as it is often termed, to take from a man two, three, or four pounds of blood; but should he survive, the probability is, that he will not for several years, if ever, be the sound man he was, before the shock his system has had inflicted upon it by such heroic proceeding.

TONICS AND STIMULANTS.

The propriety or not of administering bark, wine, ammonia, &c., and to what extent, like the question of bleeding, has been much discussed, and opinions equally opposite have been adopted. It will, however, not be necessary to trouble the reader with extended quotations, because these differences have been sufficiently illustrated in the foregoing extracts; for as venesection forms the most decided and active agent which can be applied in the treatment of disease, the general indications of treatment are regulated in a great measure by the adoption or rejection of this; and there does not seem to be altogether the same difficulty in arriving at a conclusion upon this point. The theoretical views as to the septic or putrid tendency of diseases are not now so much in vogue as formerly, and consequently the same fears are not now entertained, lest the formidable train of ill effects dependent upon such putridity should ensue. Besides which, even though this tendency were admitted to exist in its full force, the antiseptic powers of remedies formerly supposed to be almost specific, would not, at the present day, be to the same extent acknowledged.

Fordyce, Wells, Bromfield, Gartshore, Heberden, Good, and Williams,[35] are amongst the most decided advocates for the early administration of bark, wine, or aromatic cordials.

[35] Elements of Medicine.

By some the cinchona bark was relied upon as a specific, provided enough could be got down the patient's throat, (a dram an hour Fordyce directs,) and retained upon the stomach. If the patient got well it was the bark which saved him, if he died it was because he had not taken enough.

Hoffman, Heister, Pearson, Dupuytren, Sir A. Cooper, James, Travers, and Copeland, while they admit the necessity of bark or its preparations, or stimulants, as wine, porter, or gin, yet do not advocate the indiscriminate administration of them in all cases, or from the very commencement of the disease.

Sydenham, Cullen, Bell, Duncan, Rayer, and Lawrence, are amongst those who, so far from thinking bark or wine are indicated, warmly condemn the practice, and pursue the opposite one of free venesection, thinking that tonics and stimulants are not more required in erysipelas than they are in ordinary phlegmonic attacks.

I can conceive of very few cases in which bark in any of its forms, or indeed any tonic or stimulant, can be proper at the onset of the disease, at least in adults; but it would seem, from the success attending the practice when the complaint occurs in infants, as well as from the symptoms sometimes manifested in these powerless beings, that even from the very commencement of the attack, bark or some of its preparations, especially quinine, ought to be largely administered.[36] The symptoms which are usually present in the early stages of erysipelatous inflammation are such as are opposed to the administration of tonics, the irritable condition of the alimentary canal is such, that remedies of this class are decidedly contra-indicated; besides, there is not, with very few exceptions, at the commencement of erysipelas, such debility as to demand support, and there can be little doubt, as has been stated by Carmichael Smyth, that the

[36] Underwood on Diseases of Children; and Bromfield and Gartshore in Medical Communications, vol. ii.

administering of bark and wine at too early a stage of the disorder, has a great tendency to produce that very condition of putridity and gangrene which it is so much wished to prevent. So long as there is any considerable nausea and vomiting, it is impossible that these remedies can bestow any real power; bark and tonics only overload the stomach and add to its disorder, while wine and stimulants increase the head-ache and general irritation; but so soon as the tongue becomes clean and the stomach quiet, they certainly have a great effect in restoring the vigour of this organ. If the strength be failing and it be thought desirable to give support, broths and light nutritious diet are decidedly preferable, if they can be taken, and in case they cannot, bark in substance appears to be one of the least favourable medicines that can be selected, either the sulphate of quinine or the decoction are much better forms, but it will often be found, if tried early, that these only increase the febrile symptoms.

More commonly stimulants can be much earlier used and with more advantage than tonics, and especially stimulants of a diffusible kind, of which ammonia is certainly the best, as it appears to rouse and give energy to the nervous system, without acting upon the vascular, at least by increasing its excitement. At a later stage, when the tongue becomes dark or glazed, or the pulse weak and feeble, and the strength failing, then wine may be given with great advantage, in large quantities, or there may be substituted for it, with singularly good effect, the accustomed beverage of the patient, as porter or gin, the latter of which Sir A. Cooper speaks of in high terms. I think it will generally be found that these stimulants are of decided use, provided the tip and edges of the tongue are moist and not covered with sordes, however much the base and middle are loaded, but when the tongue is completely dry they either are not well borne, or are rejected,—a state in which turpentine may sometimes be most usefully employed instead.

There is nothing inconsistent in at the same moment both abstracting blood locally and administering stimulants or tonics, and in many cases the two may be practised with great advantage: a part may be gorged with blood while the system is much depressed. Local depletion with general tonics, and especially stimulants, are often of much service. The most suitable and useful stimulants, are ammonia, wine, spirits, ale, or porter: tonics, the sulphate of quinine, decoction of bark with the mineral acids, the sulphate of iron or zinc, and the vegetable bitter infusions, to which may be added either the carbonate of soda or potass. Indeed, those who regard erysipelas as depending upon an acid condition of the blood, as Sir A. Carlisle, would recommend the liberal use of the alkalies. Whether these medicines are to be given, or withheld, or in what proportion administered, must entirely depend upon the symptoms of each case. Sometimes the quantity of wine or porter taken by a man who has been accustomed to their use is very large, and the patient may be allowed to take of the latter almost as much as he pleases; but as a general rule it may be said that one of the secrets of successful practice in erysipelas depends, on the one hand, of not abstracting blood unnecessarily, and on the other, of not too early having recourse to tonics and stimulants, especially while the tongue is loaded, and there is vomiting of bilious matter, or the viscera are acutely affected.

These remarks can of course only apply to the earlier and middle stages of erysipelas. There can be no difference of opinion as to the propriety of giving both tonics and stimulants freely in the latter periods of the disease, especially if there be extensive suppuration and sloughing, but these ought rather to be regarded as the effects of the disease than as the disease itself, and must be treated on general principles which are well established.

EMETICS.

Like every other question connected with erysipelas, the propriety or safety of administering emetics has been much disputed; at one time they have been extensively used, at another almost neglected. By those who supposed erysipelas to depend upon error in the biliary secretions, which it was only necessary to correct, in order that the disease might be removed, emetics were much employed: on the contrary, by those who have had the fear of repressing the "peccant humour" before their eyes, emetics have been completely forbidden. Desault was accustomed to rely much upon emetics, which he repeated once or twice in the earlier stages of erysipelas; Rayer speaks highly of them in some cases, but thinks they are neither so generally applicable nor useful as blood-letting.[37] Dupuytren has stated his approbation of the practice; James and Copeland confirm the

[37] "When the digestive organs are exempt from inflammation, which is not rare, another method of treatment may be employed: this consists principally in the administration of tartar emetic (tartre stibié) to produce vomiting. I have seen this successful both where a large quantity of bile has been rejected by the patient, and where it has not. Nevertheless, after comparative trials, I remain convinced that bleeding is generally the more useful, and is applicable in a greater number of cases than tartar emetic, either in doses to produce vomiting or in small quantities. However, it must be admitted as proved, that in certain medical constitutions emetics cure attacks of erysipelas, which resist every other method. At the period (January, 1833,) when this opinion of having recourse exclusively to tartar emetic or ipecacuanha was re-produced before the Royal Academy of Medicine, many patients in the hospital of la Charité were cured under the influence of 'la méthode expectante,' and some others after one or more emissions of blood; but emetics are always necessary when erysipelas is owing either to the ingestion or presence of any acrid or poisonous substance in the stomach. Emetics and purgatives, often useful among the scrofulous, have been successfully employed in erysipelas of the face, sometimes as evacuants, at others as derivatives. After one or more bleedings, their utility, and that of pediluvia, blisters to the legs, and purgative enema have been well proved."—Rayer's Traité des Maladies de la Peau, par. 232.

favourable opinion; Dr. Craigie speaks in very decided terms as to their value, and especially of antimony; and Lawrence thinks them useful after the abstraction of blood. On the contrary, some, as Hoffman and Pearson, disapprove of the practice, and express themselves strongly against the employment of emetics, fearing the eruption should be repressed. Hoffman says, "Emetics, purgatives, and bleeding, frequently invite the matter back into the blood, whence a high fever, intolerable pains in the stomach, and other dangerous symptoms, which do not yield till the eruption re-appears."[38] Pearson says, "The exhibition of emetics and severe purgatives, have sometimes been succeeded by the most fatal consequences."[39]

Though it may probably not admit of a doubt that formerly, by the followers of Desault, emetics were given too frequently, and in cases not suitable for their employment, yet I am much inclined to think that latterly the opposite error has been fallen into, and in many cases they are now not administered where they would be highly useful.

Since Broussais, and other pathologists, directed the attention of the profession to the frequent occurrence of an irritable condition of the mucous membrane of the alimentary canal, and the unpleasant consequences of it, as accompanying febrile complaints, so great has been the fear entertained by many of adding to this irritation, that evacuations of almost every kind have been forbidden, except blood-letting; which, as though to make amends for the discontinuance of the others, has been most liberally employed. If the tongue be furred, and there be nausea or vomiting, with some degree of tenderness of the epigastrium, instead of an emetic or brisk purgative, as many of the older practitioners would at once have had recourse to, the implicit follower of the more modern theory applies leeches to the epigastrium or anus, or pro-

[38] Hoffman's Practice of Medicine, by Duncan, vol. i. p. 201, 1783.

[39] Pearson's Principles of Surgery, p. 212, 1808.

bably abstracts blood from the arm, and perhaps as internal treatment gives some eau sucrée or two drops of Prussic acid.

Now while we fully admit the facts, as to the irritable condition of the alimentary mucous membrane, we may, at least in some cases, be permitted to doubt the inferences. I believe that frequently this irritable or even inflamed condition, is an effect and not a cause—that it results from the presence of the acrid and disordered secretions, the removal of which is at once the readiest and safest way to get rid of the irritation, and the attempt to subdue this, without the removal of the cause, is often quite ineffectual, as well as a waste of time and strength, which are invaluable.[40]

[40] I would by no means be understood as being insensible of the importance and value of the observations respecting gastro-entérite. No one is more impressed than myself with the necessity and duty of cultivating morbid anatomy, as, in conjunction with physiology and structural anatomy, the only sure method of placing the practice of medicine among the sciences. Yet, I cannot shut my eyes to the great disposition there is to theorise without sufficient data, and to place too much dependence upon post mortem appearances, and inferences founded upon them, without sufficiently examining if they be *not merely post mortem* appearances; or even supposing them to have existed during life, if they ought not rather to be regarded as effects of the disease than as the cause of it. That being effects primarily they may of themselves become secondary causes, and as such ought to be removed, I am fully aware, but to mistake them for the principal and original causes of the disorder, is, I am confident, in many cases, to overlook the most important indications of treatment.

The great fault of the humoral pathologists was in the substitution of theories for the observation of facts; they supposed there existed a lentor, or spissitude, an acid, or an alkaline condition of the blood, and directed their remedies to the removal of these assumed states, rather than watched the effects of them over the course of the disease. Such, I fear, is the present tendency of some of the solidists; it may be, and I hope is, merely a transition state, but until a more perfect knowledge is arrived at, it would be much better, and more philosophical, not to neglect the observation of the manifest effects of remedies, and rather to rely upon these effects, even though they may be somewhat at variance with post mortem revelations, than to trust with implicit confidence to what we cannot so well observe. We should not forget that here we

The furred and loaded condition of the tongue, the frequent disposition to nausea and vomiting, with the manifest and almost invariable disorder in the biliary secretions, would lead us to suppose that if in any complaint emetics are likely to be useful, they are so in erysipelas; and unless there be some peculiar indication, as considerable head affection of an acute character, which would render the act of vomiting objectionable, if the case be seen early we should, as a rule, have recourse to an emetic. Sometimes a second may, after an interval of a day or two, be employed, if the nausea should continue, and the symptoms be of a sthenic character, though this will very rarely be requisite. Commonly a large quantity of bile is rejected with decided alleviation of the symptoms, and in many instances there is reason to think that the disease is cut short by the emetic. It is in the early stages of the complaint, perhaps within the first two or three days, that emetics are most advantageously given, and much caution is requisite in administering them at a late period, but even then they should not be in toto forbid; if the strength keep up, and there be no active inflammation of the internal organs, yet the nausea and vomiting continue very troublesome, an emetic ought to be given; however, these cases are few, and form the exceptions rather than the rule.

only see the last sequence in, it may be, a long chain of successive causes and effects, the connecting links of which may depend upon circumstances not very evident to us; while the knowledge of the direct action of remedies depends upon simple observation, in which no reasoning process is requisite, and when a certain effect has been noticed a sufficient number of times, so as to show that the agent and the change are not merely accidental antecedent and sequent, but connected together as cause and effect, may be regarded as positive.

Of course I here only speak of those numerous cases where we hear of a congested, injected, or mottled appearance of parts, or some other such changeable and easily produced condition. In those other cases where the changes are of a more permanent character, and involve an alteration of structure, the evidence is of the utmost importance, and when taken in connection with the symptoms during life, and the action of remedies, indisputable.

It is quite obvious, that in case the erysipelas has supervened upon the eating of improper food, an emetic should be the first means adopted. Much has been said about the danger of the external inflammation receding after an emetic, or of its being invited back into the blood, as Hoffman terms it, but it would be difficult to conceive in what manner an emetic should induce this, or why it should excite the same action in an internal part. The sudden suppression of the cutaneous inflammation may cause this, or this may induce the suppression of the cutaneous inflammation; but that an emetic should, in ordinary circumstances, produce either the one or the other, seems improbable.

The selection of the emetic substance is not altogether a matter of indifference. That form should be chosen, which, while it effectually evacuates the stomach, produces as little irritation, or violent reaching, as may be. Desault employed the tartarised antimony, which others have since carried to enormous doses; but it appears to me to be one of the worst medicines that can be given, when alone, as an emetic; (as a saline or diaphoretic, it is invaluable,) for it both irritates and produces more violent straining than many other substances. Some have preferred ipecacuanha as the milder of the two. But the combination which, I think, empties the stomach most effectually, and at the same time causes the least irritation, or violent reaching, is a mixture, in equal parts, of oxymel of squill, and ipecacuanha and antimony wines. About half an ounce of each generally proves sufficient for an adult. This form has the farther advantage of not unfrequently acting upon the bowels as a purgative.

PURGATIVES.

Purgatives are amongst the most useful remedies we possess in the treatment of erysipelas, though the opinion of medical men is not unanimously in their favour. Formerly the fear of revulsion, and that the disease should be driven upon the internal parts; and latterly lest the mucous lining of the alimentary canal should be irritated by them, are the objections alleged against the free exhibition of purgatives. Heister preferred clysters to purgatives. Hoffman feared lest "the matter should be invited back into the blood." Pott, that "the inflammation should leave the part first affected, and such effects ensue as soon to prove destructive." Pearson says, that "severe purgatives have sometimes been succeeded by the most fatal consequences," and condemns their use. So also Heberden declares that, "the disease being of a malignant nature, neither requires nor can bear the use of purgatives, and that he has seen great danger arise from a mild aperient." On the contrary, Sydenham, Cooper, Dupuytren, Cullen, James, Liston, Copeland, and Craigie, are advocates for the exhibition of a brisk purgative in the early stages of the complaint.

That when the patient's strength is much reduced, and the symptoms indicate great debility, or the disease is far advanced, a drastic purgative might be dangerous or fatal, is very possible; but that in the earlier stages of the disorder, a free unloading of the bowels is not only proper, but often of the greatest use, by carrying off offending matter, cannot be doubted; and that in most cases of the two first varieties of erysipelas, the bowels should be kept relaxed during the greater part of its course, is certain. Indeed, purgatives, if properly selected, and judiciously employed, form a most important element in the treatment. They are so perfectly manageable, that when we fear to bleed or to repeat the bleed-

ing, we can reduce the power, by lessening the quantity of the circulating fluids, without, at the same time, removing the more important portions of the blood. By clysters, the bowels are merely unloaded, unless the injections are of an acrid and stimulating character, when they produce much irritation; but by purgatives we can obtain a considerable increase in the abdominal secretions. In by far the majority of cases, if properly used, purgatives completely obviate the necessity for venesection, especially if they have been preceded by an emetic. So far from in all cases irritating the stomach and bowels, a purgative draught has often a soothing effect: by removing the peccant material, and restoring the peristaltic action of the intestines, the disposition to vomit is frequently overcome. It is only at the commencement of the complaint, that an active purgative should be generally employed, at which period the bowels are usually in a constipated state; four or six grains of calomel, followed by a draught of senna and salts, or the compound jalap powder, often produces a number of very copious fœtid evacuations, with a manifest alleviation of the feverish restlessness. A combination of calomel, with neutral salts, infusion of senna, colchicum, or tartarised antimony, appear to be the most useful aperients to be continued throughout the progress of the complaint, until the secretions have lost their dark and offensive appearance; but after these have become natural, the necessity for their continuation no longer exists, unless to preserve the bowels moderately open. The medicines may be given so as to procure two or three evacuations in the twenty-four hours; or if we wish to reduce the patient's strength, more may be had without fear of inducing a revulsion; indeed this is the best way to avoid the so much talked of change of locality. It is the endeavour to suppress the external inflammation suddenly, without first correcting the secretions, which produces this effect;—correct the secretions, and there is little fear of a metastasis.

In case there should be diarrhœa, or much gastric irritation in the commencement, purgatives must, of course, not be made use of; or, if these symptoms supervene, they must be discontinued, or changed for some other form, if there be reason to suspect some one or other of the medicines is acting as the undue irritant, as is not unfrequently the case with the colchicum or tartarised antimony. Nevertheless, it must be borne in mind that great irritation of the bowels, with purging and tenesmus, are often produced by acrid secretions, or undigested food, to remove which, by the administration of a smart purgative, as castor oil, or rhubarb and magnesia, combined with an opiate, is often not merely the most effectual, but the only method of soothing the bowels. If there already be debility, or any tendency towards an adynamic condition, even the mildest aperient should not be used farther than what is just sufficient to relieve the bowels, should they be confined; but light tonics, sedatives, or stimulants, should be substituted for them. Of course no one would think of employing purgatives, when extensive suppuration or sloughing are going on.

PREPARATIONS OF MERCURY.

The manifest derangement of the abdominal secretions, and especially those of the liver, clearly indicates the propriety of mercurials. Besides which, without going into any speculations as to the modus operandi of mercury, it seems to be proved by experience, that there is something in the action of the preparations of this drug, which gives them a controlling and beneficial power, in removing and correcting that condition of the blood and nervous system, which is common to all erysipeloid disorders, and, it might be added, typhoid, which no other medicine possesses. In puerperal fever, the disorder becomes much more manageable, if the system be under the effects of mercury; and also in those dreadful cases

of diffuse destruction, which follow poisonous bites, if the patient survive the immediate shock, his chance of ultimate recovery is much improved, if no time has been lost in administering calomel, with opium and stimulants.

Not only in the commencement of an attack of erysipelas is a dose of four or six grains of calomel with jalap, or one of the neutral salts proper, but it is often of the greatest use to get the system in some slight degree under the influence of mercury. Calomel, in combination with tartrate of antimony and opium, is one of the best and most important means that we possess, of keeping the disease under our control, and preventing the destructive sloughing or effusions.

In case the calomel may be too active a form, the hydrargyrum c. creta with pul. ipecac. comp. may be substituted, otherwise a grain of calomel may be administered, three, four, or six times a day, with a fourth of a grain of opium, and the same quantity of antimony, and continued until the fæcal evacuations have lost the dark offensive character which they so usually have in this disorder, or the gums become *slightly* affected, which two circumstances very frequently occur at the same time. Afterwards there does not appear to be much necessity for the continuation of mercurials, except as occasional purgatives; indeed, they would then be decidedly improper, lest severe ptyalism be induced, which, by adding to the previous irritation and excitement, as well as by the debilitating effect it has upon the whole system, must be productive of great injury, and may plunge the patient into such a condition of prostration, as to place his life in the greatest danger, by the extensive sloughing which takes place under the influence of mercurialism, and the frightful rapidity with which it spreads. Like most of our remedies which are of any value in the treatment of acute diseases, mercury, judiciously exhibited up to a certain point, is of the greatest benefit; improperly used, or carried beyond the proper degree, a pernicious poison.

DIAPHORETICS AND DIURETICS.

Those of the older practitioners who regarded erysipelas as arising "from a peccant matter mixed with the blood," thought "that the matter secreted from the blood should be invited out and discussed;"[41] and in order to do this, sweating was considered to be one of the most efficacious and advisable methods; "for whatever," as Heister says, "is corrupted of the juices in an erysipelas, as it lies near the skin, seems to be much more easily dischargeable by sweat."[42] That perspirations are sometimes critical in erysipelatous affections, appears certain. There is a very interesting case showing this in a most marked manner, related by Dr. Duncan, of Mr. Whitelaw. It is said, "the early part of this night was spent in great distress, with considerable delirium at times. Pulse about 130, much head-ache; burning heat all over the body. After midnight the patient's strength became much exhausted, when a gentle diaphoresis began to break out, and he gradually fell into a more easy and quiet state, approaching to sleep. The diaphoresis increasing, terminated in a most profuse dark-coloured clammy sweat, of a smell so exceedingly fœtid and disagreeable, that it could neither be borne by the patient himself, nor by his attendants. It was in such abundance, as not only to wet his body-clothes, but also the bed-clothes, and stained them of a dark colour, so that they could with difficulty be washed white again. When the patient awoke out of this state of slumber, in which he had continued during the perspiration, he felt great relief of all the symptoms. The fever was much moderated, and the pain of the shoulder much relieved."[43]

When we consider the natural functions of the skin and

[41] Sydenham's Works, by Swan, p. 281.

[42] Heister's Works, p. 213.

[43] Edinburgh Med.-Chirg. Trans., vol. i. p. 505.

kidneys, how large a quantity of matter is passed off from the body by them, and to what a degree the secretions of these parts are suspended in erysipelas, as in most febrile diseases where there is much heat and dryness of the surface, it cannot but be an important indication to restore them to their healthy condition; or even, to excite their action somewhat in excess, in order to afford a drain for the unhealthy fluids, and to carry off the supernatural caloric.

The combination of such remedies as tend to excite a perspiration and a secretion of urine, at the same time that they open the bowels, is certainly desirable; but how far we should, considering the condition of the skin in external erysipelas, administer such remedies as tend to increase the flow of blood towards the surface, or endeavour to excite perspiration by additional warmth, is questionable, particularly the latter. Nor do I think we should, as Sydenham recommends, cover the patient with a greater quantity of clothes than usual, and give stimulating drinks, for the purpose of effecting this object.[44] On the contrary, the patient should be kept cool, and repeated doses of the antimonial preparations, or of ipecacuanha, be given. But one of the best diaphoretics in this, as in most febrile complaints, where there is great heat and thirst, is to allow the patient to drink freely, (as the cravings of nature prompt him,) of simple water. It should not be given immediately after being drawn from the well, as it is then so cold, that, if taken copiously and quickly, as it almost always is if the patient can get it, a sudden chill of the whole system is very liable to be produced, which can with difficulty be removed; when there would be great danger of the secretions being suppressed, and the local action transferred

[44] Sydenham's Works, by Dr. Swan, 5th edit., p. 285. The learned editor seems to be of the same opinion, since, in his commentary upon the passage, he says, "The patient should always be kept in a perspiring way, and the parts affected particularly warm, to prevent a sudden and prejudicial sinking of the swelling, &c."

from the surface to one of the membranes or viscera, from the shock of which the patient might never rally. The water should be allowed to remain in the room until it has acquired the same temperature as the apartment, or be at once raised to it (from 45° to 55° Fahrenheit, according to the time of the year,) by the addition of a very small quantity of warm water, when it may be taken ad libitum. It then forms the best diluent I know of, and by its action, alone or in conjunction with antimonials, upon the skin and kidneys, becomes a most effectual diaphoretic and diuretic. I have, on more than one occasion, known patients who were hot and restless, soon after drinking freely of water, fall into a comfortable doze, during which the skin has become moist, or even wet, with perspiration, to the great alleviation of all unpleasant symptoms. Nor have I ever witnessed any metastasis, or other untoward accident occur, when these precautions had been taken.

Of all the antimonial preparations none equals the tartrate, which may be given in doses of from the eighth to the fourth of a grain, with calomel and opium, every four hours, unless it should act too violently upon the bowels; when, if it does, it may be changed for the pulvis antimonialis, compound ipecacuanha powder, or James's powder. Sometimes, if there be any debility, the liquor ammoniæ acetatis, with double the quantity of decoction of bark, is advantageously given. The nitrate, or supertartrate, of potass, are useful adjuncts. Indeed, all that class of remedies, which at the same time control the rapidity of the circulation, and act upon the skin and the kidneys, are useful in the treatment of erysipelas.

COLCHICUM, DIGITALIS, AND ANTIMONY.

In the treatment of erysipelas, the different preparations of these remedies are of great importance; first, because they enable us to control both the force and frequency of the heart's action, and thus to lessen the impetus of the circulation of the blood; and, secondly, as they act upon the secreting organs, more especially the kidneys and those of the chylopoietic viscera, often occasioning very copious and watery discharges, they much diminish the volume of the circulating fluids, without withdrawing from the blood its red particles, upon which there is great reason to believe its vivifying properties more immediately depend, and which, consequently, should not be removed unless it is absolutely necessary. At the same time an outlet is afforded for the escape of any peccant matter, if such there be (and the older pathologists have not been proved to have been wrong in supposing such to have existed) which has been intermixed with the blood, and which it is necessary to remove, in order that health may be restored; or, at any rate, that the blood may acquire its natural and healthy constitution, which in a state of disease it cannot be supposed to possess, whether the departure from it arise from an actual admixture of some foreign matter, as pus, from some error in its chemical composition, or from impaired and deficient vitality. Properly administered, colchicum and digitalis, with purgatives and sedatives, will in most cases obviate the necessity for having recourse to venesection; and I am fully convinced, will enable us to carry through with safety, many cases where bleeding, even during the acute stages of the complaint, would have been fatal; and, in the majority of patients, materially shorten the convalescence, and much diminish the long train of ill effects which so frequently ensue in conse-

quence of a bad attack of erysipelas, and which are hardly to be less dreaded than the disease itself.

In advocating the utility of colchicum in erysipeloid disorders, I must, however, protest against the employment of it in such heroic doses as have been recommended by some, and more especially by Mr. Bullock, whose paper has since been referred to with commendation.[45] Acting so violently as colchicum sometimes does, by producing vomiting and severe purging, accompanied with much depression of both the nervous and vascular systems, it ought to be prudently employed in moderate doses, and not in such quantities as the following extract from the paper just referred to exemplifies, as administered in a case of erysipelas of the scrotum and neighbouring parts.

"Four p. m. ℞ Pulv. Colchici, gr. xv. Sodæ Carbon. ℥ ʒ.[46] M. ut ft. Pulv. statim sumendus.

"In about a quarter of an hour, the frequency of the pulse, redness, and burning heat of the skin very sensibly diminished, and the patient at the same time said he was cooler and much more comfortable. At the expiration of an hour, the heat and crimson hue of the skin, the frequency and fulness of the pulse augmented considerably.

"Five p. m. Pulv. Colchici gr. x. Sodæ Carbon. ℈ij M. ut ft. Pulv. statim sumendus. This dose was followed by effects as beneficial, but more lasting, efflorescence and other symptoms not recurring so rapidly or in so aggravated a form. It was necessary to repeat the last powder at seven o'clock. This had the desired effect of thoroughly subduing the fre-

[45] Medical Quarterly Review, vol. ii. p. 183; Bullock on the Use of Colchicum in Erysipelas.

[46] Query, should not this be ℥; an ounce of Carbonate of Soda even given alone, is not to be carelessly administered as a single dose: though I confess, I do not think an ounce of Carbonate of Soda, a more extravagant dose than thirty-five grains of powdered Colchicum within three hours, nor more likely to be injurious, provided the Colchicum was good for any thing.

quency and the fulness of the pulse, the heat and redness of the skin, and swelling of the scrotum."

In another case five grains of colchicum with a scruple of carbonate of soda were given every two hours. In doses like these I cannot consider colchicum either a safe or desirable medicine, nor can I wholly disconnect the death of one of the patients, (case 5) from the large doses of colchicum given. Mr. Bullock says, it is the only unsuccessful case he has seen of those treated with colchicum Yet the following remark, made in detailing the case from whence the above extract is taken, will show, that even among the successful cases the symptoms were sometimes alarming. "These large and frequently-repeated doses of colchicum so rapidly and decidedly reduced the action of the pulse, that it became an imperative duty to watch its effects with the most scrutinising attention, and delay the exhibition of another dose till a tolerably well-established re-action took place."

An instance has recently been related of death from large doses of colchicum. The patient, a female, was under the treatment (care it cannot be said) of Dr. Forget, of Montpellier for rheumatism; most intense vomiting and purging took place from which she never recovered.[47]

Mr. Haden and Mr. David Rice have both warmly advocated the use of colchicum, not particularly in erysipelas, but as generally applicable in most cases of acute diseases, as a substitute for bleeding, and related many cases of its successful exhibition.[48]

The well known action of digitalis in controlling the force and frequency of the pulse is most advantageous in all

[47] Medico-Chirurgical Review, No. 65, for July, 1840, p. 215.

[48] On the use of Colchicum as a substitute for Bleeding in Inflammatory Affections, by Mr. T. H. Haden, 1820.

Cases of Acute Diseases treated by Colchicum Autumnale, by Mr. David Rice, in London Medical Repository, vol. xv., January, 1821.

cases where we wish to avoid general depletion, and in no disease is it more applicable than in erysipelas.

The colchicum and digitalis may be given with salines, either together or separately. Either the vinum or acetum colchici may be thus administered, in repeated doses of from twenty to forty drops; or from two to five grains of the powder may be given with an opiate at bed-time. During its employment, and which is one of the criteria as to the quantity to be used, a number of copious, dark, slimy, evacuations, are commonly discharged from the bowels, and it much assists the mercurial preparations in procuring an improved condition of the biliary secretions.

With this class of medicines should be placed the tartarised antimony, when employed in such doses, and in the same manner, as was first recommended and is still practised by the Italian physicians, for it is by its depressing effect upon the circulating powers, and its acting upon the secreting organs, that it is beneficial: what peculiar advantages it possesses over other remedies of the same class I am unable to say, from the want of comparative trials, as the result of those cases of fever, which I saw so treated in Paris some years since, was not sufficiently favourable to induce me to put much faith in so uncertain a preparation, as when carried to such extreme doses tartarised antimony becomes. The combination of it, in more moderate doses, with the medicines above spoken of, seems to me to ensure, with more certainty, the effects we wish to procure, than we could expect to have produced by it alone; and thus used tartarised antimony is to be regarded as a most valuable and important remedy, which is applicable to almost every case of erysipelas. I believe that the combination of two or more remedies of the same class, in moderate proportions, acts much more beneficially, as well as safely, than the use of one carried to excess. Simplicity in formulæ is a very good thing, but like many others, in avoiding one evil may itself be carried to an injurious extent.

It is a hobby which I am sure some of our continental brethren ride too hard, and in which I fear some of our own practitioners are imitating them. That error, and gross errors were prevalent formerly in loading a prescription with numerous medicines, many of them often incompatible with each other, and constantly pouring down the throat of an unfortunate patient a heap of nauseous drugs, is no doubt true, as though the whole practice of medicine consisted in this;—a glass of wine, or a mutton chop may be the best medicine that can be prescribed, or total abstinence from medicine may be so; but it does not follow, that because this abuse of valuable drugs has been carried to an absurd extent, that the neglect of them may not be pushed to a degree equally ridiculous and injurious. Formerly medical men were always interfering, as though every thing depended upon them, and nothing upon nature; it is, however, possible, that while confiding much in her salutary efforts we may sometimes be led to forget, that in disease the system itself is in an unnatural state, and requires, so to speak, to be put into a condition to be able to rectify itself.

NARCOTICS.

If there be any one point connected with erysipelas in which there is any thing like an agreement, it is with respect to the propriety of giving narcotics in one form or other. At some period of the disease, most medical men regard them as useful. They relieve the pain, tranquillise the system, and procure rest. The form of narcotic, the extent of dose, and the mode and time of administering it, must depend upon the symptoms and the part involved. In the very early stages of the complaint, the more powerful narcotics are not so useful as they are at a later period; and opium alone should not then be given, as it can rarely be used in sufficient quantity to procure sleep, and in smaller, it only adds to the febrile

excitement, and renders the head more liable to be affected. Moderate doses, for the first few days, of extract of hyosciamus, extract of poppy, or the compound tincture of camphor, combined with calomel, salines, and colchicum, may be employed with advantage; or the form already spoken of, the antim. tart., hydr. chlor., and opium may be used with the best effects, unless the head be much affected; but, even then, it is questionable if the opium so combined has the same tendency to produce delirium as when given alone, at least I have not found it to have this effect.

At a later period of the disease, a full dose of opium, or, still better, of the acetate of morphia, at bed-time, is of the most important benefit in procuring rest. Independent of the pain, there are no peculiar indications, which render it necessary to give or to withhold the use of opium, than in corresponding febrile affections, where there is much irritation. In both cases, we must be guided by the restlessness and irritation, the excitement or depression, the sthenic or asthenic character of the symptoms, with the degree and kind of local affection, as well as the structure and functions of the part involved. When opiates lessen the pain and irritation, procure sleep, and diminish the excitement, which in most cases of erysipelas they do, they are of decided use, and ought to be freely given.

In the milder cases of simple cutaneous erysipelas, the strong opiates may generally be dispensed with, but in the cellulo-cutaneous variety, opiates in some form or other, alone, with salines, or with stimulants, are useful,—at times absolutely essential throughout the course of the disorder, except, perhaps, during the first two or three days; but even at this period, the excitement and irritation may often be somewhat controlled by repeated doses of hyosciamus. In the later stages of the disease, when the strength fails, and there is great suppuration with sloughing, in large doses at bed-time opium often acts like a charm, by allaying the great irritation

and pain, procuring refreshing sleep, and enabling the stomach to bear both tonics and stimulants, with nutritious food, when otherwise they could not be taken.

In combination with ammonia, opium in very large quantities is, sometimes from the very first, necessary in the treatment of such cases of the cellular variety of erysipelas as have been described by Travers as the effect of poison upon the system, and by Colles and Duncan as diffuse cellular inflammation; and in those most malignant forms of the affection which arise from the poisonous fangs of a snake, with stimulants and calomel, the system will bear excessive quantities, and it affords our only means of salvation.

As drugs, which are in some measure intermediate, and combine the different properties of the last two classes of remedies, the preparations of aconite and belladonna may with propriety be used. Small and repeated doses of the extract of either of these plants, are often of much service in reducing the arterial excitement, and quieting the whole system. While they act as sedatives, they appear to have a direct and powerful influence over the heart's action, and at the same time increase the secretions. Of these remedies, the aconite is the most powerful in subduing the impetus of the heart's systole, and thus more resembles digitalis, while the belladonna partakes more of the nature of the direct sedatives; so that one or the other must be selected according to circumstances. However, with remedies of such activity, it is necessary to be exceedingly careful in commencing with small doses, and also in the selection of cases, as it is evident where much depression already exists, they ought on no account to be administered. Mr. Liston speaks thus strongly in their favour:—"The exhibition of the extract of aconite, in this and other inflammatory affections, is often followed by great abatement of vascular excitement, so that the necessity for abstraction of blood is done away with. The medicine may

be given in doses of half a grain in substance, or dissolved in pure water, and repeated every third or fourth hour. The sensible effect is relaxation of the surface, and frequently profuse perspiration; the arterial pulsations are diminished in frequency and force. The extract of belladonna, in doses of one-sixteenth of a grain, may then be substituted with great advantage, and often with the most extraordinary effect upon the disease."[49]

TURPENTINE AND CAMPHOR.

Turpentine and camphor are remedies of a very different class from the last, nor are they so universally applicable, yet, in some cases, they have been warmly recommended, both as general and local applications. The latter of the two is an old fashioned remedy, formerly much valued in those febrile attacks which are attended with malignity, as it was called,—such as is the condition in the later stages of erysipelas, in which it was thought, when given internally, to be of most powerful efficacy; and in many of the older works, as a local application in erysipelas, we find it spoken of with praise; but it has now fallen into disrepute, and is seldom employed internally, at least in the forms and with the intentions for which it was chiefly valued, for certainly our tinct. camph. comp. does not possess the qualities, and the mistura camphoræ is a mere menstruum. If formerly it was overvalued, it certainly now is too much neglected.

The former, turpentine, has recently been strongly advised in the advanced stages of erysipelas, and cases are on record, which really seemed desperate, and yet under its use the patients recovered. Indeed, if we examine the therapeutic action of the oleum terebinthinæ, we shall find strong reasons to justify its employment. It is a powerful stimulant of the nervous system, without acting in a corresponding degree upon

[49] Liston's Elements of Surgery, 2nd edit., p. 61.

the vascular system; it is also an excellent counter-irritant, and an effectual, without being a drastic, purgative. Its local action may also be beneficial by supplying that stimulus which is required to cause the dilated, and perhaps, torpid capillaries, to contract, and thus expel the blood with which they were engorged, and by so doing restore a much more healthy and natural action in the part. By its action as a counter-irritant upon the alimentary mucous membrane, it may, I conceive, prove beneficial in those cases of coma for which it seems peculiarly adapted, by withdrawing the affection from the brain to the mucous membrane. Whether these may be the true explanations of its action or not, certain it is, that in some cases, where coma has been intense, the pulse sinking, the tongue dry and glazed, and the teeth imbued with sordes, after other remedies had been abandoned in despair, the administration of the oil of turpentine has apparently saved the patient.

About twenty-seven years since Dr. Brennan, of Dublin, first recommended the use of turpentine in puerperal fever,[50] and more recently, Dr. Douglas, in his Report on Puerperal Fever, has also spoken of it as a remedy of great efficacy, and said that in many febrile attacks, particularly when there exists any inflammation of the viscera, it would be found useful.[51] Dr. Copeland,[52] in his Dictionary, (that miracle of industry) has since, in the strongest manner, advised its use in erysipelas, combined with an equal quantity, or with one half, or two-thirds, of castor oil, and a small quantity of liquor potassæ. It should be administered as an electuary, or in any other form the patient can be sufficiently roused to swallow it, and repeated every three or four hours, until

[50] Thoughts on Puerperal Fever, and its Cure by Spirits of Turpentine, &c. by John Brennan, M.D., London, 1814; and also in the London Medical Repository, vol. vi. p. 468, December 1816.

[51] Douglas on Puerperal Fever, in Dublin Hospital Reports, vol. iii. p. 159.

[52] Copeland's Dictionary, p. 831.

the bowels begin to act, when its action may be promoted by enemata. Dr. Copeland gives three or four drams as a dose. Under its action copious offensive evacuations are procured, the pulse becomes less frequent in its pulsations and stronger, the coma less profound, the teeth and mouth cleaner, and the senses are restored. No ill effects have been witnessed from its administration.

A striking case is related by Mr. H. Cox, in which, at Dr. Copeland's suggestion, the oil was given to a young woman, twenty-one years of age, in apparently a hopeless condition, from erysipelas of the scalp and face. The coma was profound; she recovered under its employment.[53] In five days she took five ounces of turpentine by the mouth, and six drams in an enema, besides three ounces of castor oil. It is a remedy which is not in general use, but which is fully entitled to a fair and cautious trial, taking care that the cases in which it is administered are properly selected; for it is clear it is not a medicine that should be rashly and indiscriminately given in every case of erysipelas, whether of the surface or internal membranes. The mere knowledge that one drug purges, that another is a tonic, and a third a stimulant, is not sufficient to direct their proper administration. The form of preparation, the mode of combination, the extent of dose, and many considerations, as applicable to individual cases of illness, are of essential importance, and must be carefully studied, in order that due advantage may be taken of their various properties.

[53] Case of Erysipelas successfully treated with the Oleum Terebinthinæ, by Mr. Harry Cox, in London Medical Repository, vol. xxiii. p. 298, April 1825.

The "Case of Puerperal Fever successfully treated by Oil of Turpentine, by Henry Payne, M.D.," in Edinburgh Medical and Surgical Journal, vol. xxii. p. 53, shows the large quantity of turpentine which may be administered in some instances with advantage.

LOCAL TREATMENT.

In a disease like erysipelas, where the whole system is concerned, but in which the violence of the disorder is thrown upon an individual part of the body, it is necessary not to trust alone to general remedies, but assiduously to have recourse to local means, which are scarcely, if at all, of less importance, than those which act through the whole system. Indeed, with whatever judgment and skill the general treatment be directed, unless the local be equally attended to, it will very often be unavailing, and the patient will die, or be seriously maimed for life.

The remedies and applications advised as local measures, are as various and as contradictory, or even more so, if possible, than those of general powers, and require as careful a consideration as they do.

BLEEDING.

It might have been supposed that, although medical men could not agree upon the propriety or safety of general blood-letting, there would not have been the same difference of opinion in regard to the local abstraction of blood. Physicians and surgeons are, however, by no means unanimous upon the question. Formerly there was a much greater disinclination to take blood from the inflamed part than exists at the present day: this in a great measure arose from the fear of increasing the inflammation which already existed, by the means used, for as the application of leeches upon a sound part is not unfrequently followed by erysipelas, it was argued that in a part already erysipelatous this disposition would be increased by so doing. This fear was with many the principal

cause which withheld them from removing blood from the inflamed part, and not the dread of the mere loss of blood, because some of the same writers, who are strong advocates for general bleeding, expressly guard us against the application of leeches. Of course those who regarded erysipelas as altogether a disease of debility, and in its nature differing essentially from inflammation, as Wells, Fordyce, and Pearson, would on this ground object to the local abstraction of blood, as they did to general blood-letting; for although the latter of these authors does not absolutely forbid "the application of the cupping-glasses between the shoulders, so as to abstract a few ounces of blood, in some few cases, at an early stage of the disease," he tells us, the propriety of local bleeding is chiefly applicable to those cases where there is danger of an affection of the brain, and that very great nicety is required in determining upon this evacuation, where there is the least disposition to a metastasis, because he had seen the most dangerous symptoms immediately supervene to the loss of a very small quantity of blood.[54]

B. Bell, who is one of the most decided advocates for general blood-letting, is quite opposed to local bleeding: he says, "it is proper, however, to remark, that local blood-letting, which in other varieties of inflammation proves highly useful, is not here admissible; for the orifices by which it must be drawn off are very apt to degenerate into those troublesome ulcers which erysipelas, when it terminates in effusion, is very apt to produce."[55] Mr. Blackett declares that "local bleedings are always attended with the greatest peril, as the skin where it has been punctured ever disposes to gangrene; cupping, leeches, &c., should therefore be exploded entirely in the treatment."[56] Bateman tells us that "it is

[54] Pearson's Principles of Surgery, p. 214.

[55] B. Bell's Works, vol. v. p. 380.

[56] Blackett on Erysipelas in London Medical and Physical Journal, vol. lv. p. 293.

usual to forbid leeches to be applied upon, or very near the diseased surface."[57] Mason Good says that "the application of leeches always exasperates the efflorescence."[58] Willan[59] and Thomson[60] give quite as decided opinions as to the impropriety of applying leeches to an erysipelatous part, and for the same reasons; and even quite lately, Mr. Liston has declared that, "bleeding by leeches is not admissible, for the leech-bites prove a source of irritation and are liable to suppurate; erysipelas has often been produced by leeching."[61] So also we are told in the latest essay on erysipelas which I have seen, that, "should leeches be employed they must be applied beyond the boundaries of the inflamed surface and not on the part itself."[62]

This fear at the present day is by most thought to be groundless; Lawrence,[63] Dupuytren,[64] S. Cooper,[65] and many others, have shown that leeches may be applied, not only without any risk of thereby necessarily increasing the erysipelatous inflammation, but oftentimes with a decided diminution of its intensity, and the practice is pursued, by Drs. Mackintosh[66] and Craigie[67] and recommended in their recent works.

I think it will now be generally admitted that, whatever the constitutional symptoms may be, the local are those of inflammation, or at least of "hyperemie;" that whether the vessels be in a state of over action or of deficient action they

[57] Bateman's Synopsis, p. 186.

[58] Good, Study of Medicine, vol. iii. p. 78.

[59] Willan on Cutaneous Diseases, p. 518,

[60] Thomson's Lectures on Inflammation, p. 186.

[61] Liston's Elements of Surgery, p. 62.

[62] Library of Practical Medicine, vol. i. p. 374, 1840.; art. Erysipelas, by Dr. H. E. Schedel, of Paris.

[63] Med.-Chirg. Trans., vol. xiv. p. 43.

[64] Leçons Orales, vol. ii. p. 157.

[65] Cooper's Notes to 3rd edit. of Good's Study of Medicine, vol. iii. p. 79.

[66] Mackintosh's Practice of Physic, vol. ii. p. 70.

[67] Craigie's Elements of the Practice of Physic, vol. ii. p. 476.

contain too much blood; and that, in order to restore the natural condition of the parts, the quantity of blood actually in them must be diminished. This may be accomplished in four different ways: 1st, by the abstraction of some part of the blood; 2nd, by the effusion of serum, pus, or lymph; 3rd, by general means acting through the system; or 4th, by such local applications as shall cause the dilated vessels to contract and expel their contents. Which of these four methods may be most advantageous will depend upon the stage of the complaint, the situation and functions of the part attacked, the extent to which it is involved, and the constitutional symptoms. In by far the majority of cases these latter are such as to allow of local depletion with much advantage; nor is the advantage of abstracting blood locally confined to one stage of the complaint. In the earlier it acts by diminishing the vascular excitement, and thus tends to lessen the disposition to spread, as well as to prevent those effusions which nature effects as a means of relieving herself, but which often occasion the most serious apprehensions to the medical man, and which as a rule he ought to endeavour to prevent when possible. In the later period of the disease the abstraction of even a very small quantity of blood from the engorged vessels, though at the same time we may be using stimulants, both locally and generally, will often enable the vessels to contract, and surprisingly expedite the cure. It is true that in many cases it is not a sine qua non that blood be locally abstracted, because either refrigerants or astringents, stimulants or pressure, may suffice; but it is equally true that in some they would not, and in the great proportion these applications are infinitely more useful when preceded or accompanied by the abstraction of blood from the part itself.

In speaking thus strongly in favour of taking blood from the part inflamed, I would wish to be understood as not recommending either that the quantity removed should be large or quickly taken away; if this be permitted it can

signify little, so far as the effects upon the system are concerned, whether the blood be taken from the part itself, or from a vein in a distant part of the body, it is to all intents and purposes a general bleeding, in which as much care is necessary as if one of the brachial veins were opened; a pound and a half or two pounds of blood flowing from a large incision will produce, if it flow as quickly as it does in most cases, the same effects, both immediate and ultimate, as if it were allowed to flow from a punctured vein. Moreover, I am inclined to think that the most important indication in local blood-letting, that of emptying the loaded and debilitated blood-vessels, is not accomplished. If the blood be allowed to escape very rapidly, there immediately takes place an increased flow towards the orifice from the vessels of the surrounding parts, or even from the principal trunks, and instead of the affected part being emptied of its blood, after the hæmorrhage has ceased it is liable to contain more than it did at first, from the impetus with which the blood rushes into its weakened vessels; at least unless the quantity abstracted is so great as materially to affect the whole system, in which case, as I said before, it might as well be taken from the veins of the arm in a more simple manner. But even the partial emptying of the whole vascular system by no means ensures the removal of a distended condition of the vessels of a particular organ; it requires something else to do this; namely, to give the affected vessels sufficient tone to enable them to contract upon their contents. By itself the debility occasioned by the loss of a large quantity of blood rather disposes to local congestions than not. It is in the infirm and debilitated, whether from age, illness, depletion, or any other cause, that a congested condition of the different organs is met with; in the young and robust this is rarely observed: on the contrary, if the blood be removed slowly and not in too great a quantity at once, the effect in a great measure is limited to the immediate locality; the

vessels directly concerned are alone unloaded, and are not prevented from contracting to their natural calibre, by the rushing towards them of more blood, from their anastamosing branches. This is a point which I am inclined to apprehend was, in practice, more attended to by some of the older practitioners, with their derivatives and revulsives, (whether their theories were correct or not, is another question,) than it is generally at the present day. It is in this manner that I think is to be explained the utility of puncturing the inflamed parts in erysipelas; the quantity of blood obtained is frequently very small, and yet the effect of the punctures is often quite surprising.

Blood may be abstracted from an erysipelatous part in four ways: 1st, by cupping; 2nd, by leeches; 3rd, by punctures; 4th, by incisions.

1. *Cupping.*—The abstraction of blood by cupping is that method which is least applicable, and, at the same time the most objectionable. In the great proportion of cases the parts are such, as for instance, the head and face, as not to admit of the application of the glasses; and the pain and uneasiness occasioned by their pressure are so great, as to add much to the irritation, to counterbalance which, it possesses no corresponding advantage over other methods. Pearson says, cupping glasses may be applied between the shoulders, in case the head becomes affected; doubtless blood might, in some cases, be so removed with much benefit; but this hardly comes within the strict interpretation of local bleeding in the sense we are now speaking of it. It is, perhaps, not altogether unworthy of consideration, if dry cupping might not, in some particular cases, when it would be improper to abstract any blood whatever, be employed for the purpose of preventing the extension of the disease, by confining it to the space already affected, or by temporarily withdrawing the blood from the engorged vessels.

2. *Leeches.*—Though it must be fully admitted that

Lawrence, S. Cooper, Dupuytren, Craigie, Mackintosh, and others have shown that leeches may at times be applied to an erysipelatous part, not only without thereby increasing the disorder, but often with considerable benefit; and though we may farther allow that the old argument, because erysipelas sometimes follows the application of leeches upon the sound skin, therefore leech-bites upon a part already in an erysipelatous condition, will increase the affection, is not conclusive reasoning; it is yet a fair subject for consideration if leeches be the best medium which can be employed for the abstraction of blood.

Leeches can be applied upon any part, in any number, over any extent of surface, and they remove the blood from the affected vessels in that manner which seems to be most desirable; but it does not appear to be fully shown that the bites themselves are altogether free from prejudice; true, singly they form but small wounds, but when multiplied by dozens,[68] they must become a considerable source of irritation; even on the healthiest skin the bites are always surrounded by some degree of uneasiness and irritation, nor is it improbable that in a part already diseased, this will be the case to at least an equal extent. A leech-bite is followed by more irritation than a simple punctured wound of the same size. My experience of the effects of leeches upon an erysipelatous part is not very extensive, because, I confess, I have had the feeling respecting their use, which I have just mentioned, and in those cases where I have seen them applied, it has rather been confirmed. It seems probable, that the objection so generally entertained against them, did not wholly arise from the occasional effects of them when applied upon the uninflamed skin, but that it is to some extent the result of what has been observed, when placed upon an erysipelatous part; an opinion which appears

[68] "In a case attended by the editor, about a year ago, not less than five dozen were put on the head and face in the course of the first week of the disorder."—S. Cooper's edition of Good, vol. iii. p. 79.

to be supported by what has been noticed in the practice of M. Blandin, in the Hôtel Dieu, at Paris, who is in the constant habit of applying leeches in great numbers to the erysipelatous part, or in the course of the lymphatics, between it and the trunk, but which often seems to induce erysipelas in the part where they are placed.[69]

Were there no other means of abstracting blood locally, we should not hesitate to apply leeches, and to repeat the application if necessary; but, I believe, in by far the majority of cases, blood may be much more advantageously removed by punctures, or by incisions. Should the patient, however, object to these, he may probably not refuse to allow leeches to be put on: under such circumstances they may properly be applied.

3. *Punctures.*—Of all the means recommended for local bleeding in erysipelas, that by small punctures appears to be the most generally applicable, and the most useful, (not but that in some cases of the cellulo-cutaneous and cellular varieties, upon the extremities, incisions may be more advantageous.) Undoubtedly the merit of recently introducing the practice of puncturing the skin, in erysipelas, belongs to Sir R. Dobson, of the Greenwich Hospital, to whom it is generally referred. But the plan is not so novel as he and most others supposed it to be, as the following passage from Freind's History of Physic will show: "Therefore in an *Erysipelas*, *Small-Pox*, *Measles*, *Scarlet-Feaver*, *&c.* if the symptoms run high and affect the head, the lungs, or any other part, so as to give intense pain, *bleeding* will be found a very rational and safe practice. And, in fact, though I have tried no experiment more frequently, I never once observed that any of these *eruptions* struck in upon *bleeding*, when the disease required that treatment. In inflammatory cases, and in an *Erysipelas* particularly, it is often seen by

[69] Observations on the Surgical Practice of Paris, by W. O. Markham, M. D.

experience, that *scarifying* upon the part, when the membranes are loaded and thickened, will remove the inflammation in a very sudden and surprising manner."[70] Whether this practice, recommended by Freind, found imitators or not, it appears to have been quite forgotten until Sir R. Dobson again introduced it.

The following extract from Sir R. Dobson's paper, though rather long, will best explain his method of proceeding. "With regard to the nature of erysipelas in which I use the punctures, I answer in all cases, whether simple, traumatic, or phlegmonous, the number of punctures I make at any one time varies according to the extent of the disease, but is rarely under ten, and seldom exceeding fifty; the depth and extent of each puncture vary also according to circumstances, being made deeper when the parts are more tumid, but more superficial when the tumefaction is not so great; from two to four-tenths of an inch may, however, be considered the proper answer to that part of your enquiry. I repeat the punctures to the number and extent required, mostly twice a day, and often in bad cases three or four times in the twenty-four hours, and in the whole course of this practice, which has been resorted to by me in several hundred cases, having adopted it more than a dozen years ago, I have never seen any bad consequence resulting from its employment. The quantity of fluid, (for it is not blood alone, but blood and effused serum,) which these punctures discharge, although sometimes considerable, need never create any alarm, for however freely it may flow at first, it gradually diminishes and soon spontaneously ceases. I use these punctures in every part of the scalp, or face, body, or extremities, and never more freely than about the eye-lids, and I have often found a patient with both eyes closed, which by freely puncturing, he has been able to open in a few minutes; and what will be found not less true, than it may appear surpri-

[70] Freind's History of Physic, vol. i. p. 75.

sing, these punctures mostly heal in a few hours, and never entail any material mark upon the patient."[71]

This practice, though it has not been by any means universally adopted, has been very highly spoken of by those who have fairly tried it. Mr. Liston speaks in praise of it,[72] and Dr. Bright "considers it one of the greatest improvements in modern medicine." He even carries the plan still further than Dr. Dobson, as appears by the following passage: "This consists in making fine punctures, in number amounting to several hundreds, or even thousands, with the point of a lancet, over the whole inflamed part, then fomenting with warm water in a sponge to encourage the bleeding; and repeating this operation two or three times in the twenty-four hours, if the parts look red or tense. If done early it shortens the disease; at all events, it relieves the vessels in a manner which nothing else in my experience has effected."[73]

All practitioners, however, do not entertain the strong opinion which Dr. Bright does, in favour of the puncturing method, as the following decided expression of Mr. Travers shows: "Of the puncturing practice I have no favourable opinion. It irritates without effectually unbinding or unloading, and is a cruel prolongation of suffering, especially when the disease is situated on the face and head."[74]

There is no part of the body, nor any stage of the complaint, in which punctures may not be practised with benefit; and in erysipelas of the face, where other methods of abstracting blood are extremely inconvenient, or, indeed, with the

[71] On the Treatment of Erysipelas, by numerous Punctures in the affected part, by R. Dobson, M.D., in a Letter to W. Lawrence, Esq. F.R.S., in Med.-Chirg. Trans., vol. xiv. p. 207.

[72] Clinical Lecture, by Liston, in Lancet, vol. xxix. p. 328; also in Elements of Surgery, p. 63.

[73] Bright's Reports, vol. ii. p. 97.; see also Johnson's Med.-Chirg. Review for October, 1831, vol. xv, where a very strong opinion in favour of the practice of puncturing is expressed.

[74] Travers on Constitutional Irritation, vol. ii. p. 148.

exception of leeches, quite inapplicable, they are very useful. The blood flows more freely from the face than from any other situation, on account of the skin being thin and more vascular. I am accustomed to puncture in almost all cases of erysipelas of the face, which are at all severe, and not unfrequently upon the trunk and extremities. I have not seen one in which it did not appear advantageous, or where any unpleasant effects followed. The comfort produced in a very short time is often perfectly surprising; the heat and burning pain become much less, the swelling is diminished, and the tendency to spread moderated. Another important advantage is, that it does not interfere with, nor prevent, any other application. The pain produced at the moment of making the punctures is severe, but it is of very short continuance; and I have known instances where the relief has been so great, that the patient, who at first was much opposed to the punctures, requested they might be repeated.

The best method of making the punctures is to hold a sharp lancet tightly between the finger and thumb, at such a distance from the point as we wish it to penetrate, thus making the finger and thumb the shoulders of the lancet blade. The depth to which we penetrate must be greater or less, according to the degree of swelling and the extent of inflammation. It should vary from one-fifth to two-fifths of an inch in depth; the latter depth will rarely be required, unless upon the limbs, where the swelling is considerable, and we wish not only to abstract blood, but also freely to evacuate the effused serum. Upon the face the former will effect all that we can expect to obtain, as it is of no use going much beneath the vascular layer of the integuments. The skin should then be rapidly tattooed; a hundred punctures, should so many be required, may easily be made in less than a minute, from which the blood freely ooses out: the flow of it should be promoted, as Dr. Bright mentions, by a sponge and warm water; or, as Mr. Liston prefers, be fomented with bags

containing chamomile flowers or hops. Sir R. Dobson speaks of repeating the punctures three or four times in the twenty-four hours, and Dr. Bright of making several hundreds or even thousands of them. I have never seen it necessary to inflict any thing approaching to this latter number, and very rarely to repeat the operation more than three or four times in the whole; if effectually made at first, twice is generally sufficient at an interval of about twelve or eighteen hours. The quantity of blood which flows is inconsiderable, so much so, that it is only on the supposition of its passing from the dilated vessels, without inducing a diversion from the neighbouring anastamosing branches, and thus, by removing the distending force, enabling them to contract, that we can account for the effect which is so soon produced. The diminution in the heat and pain is immediate, and as the effused serum continues for some time to drain off, the swelling quickly subsides. Puncturing is, as I have already stated, not only peculiarly applicable in erysipelas of the face, but it is more effectual here than on the limbs, and when it is adopted freely, from the commencement of the attack, suppuration will never, or very rarely, take place, even in the loose texture of the eye-lids.

Punctures are more advantageous in the cutaneous and cellulo-cutaneous varieties, than in the cellular, because in this latter, the affected vessels lie so much deeper.

4. *Incisions.*—The modern practice, of making incisions into an erysipelatous part in an early stage, before suppuration has taken place, is undoubtedly due to the late Dr. Copeland Hutchinson; at least to its full extent, and for the express purpose of preventing or limiting the suppuration and sloughing; for the practice, with this intention, was entirely unknown, previous to his publication.[75]

So long since as 1765, O'Halloran, in three cases of severe erysipeloid inflammation following venesection, prac-

[75] Med.-Chirg. Trans., vol. v. p. 278.

tised incisions, numerously and deeply made, in the inflamed part, as he tells us, in hope that the activity of the stupes and poultices would sooner pervade these parts.[76] In speaking of bad cases of erysipelas, Mr. Pott says, "Here is no need for evacuations of any kind: recourse must immediately be had to medical assistance; the part affected should be frequently fomented with hot spirituous fomentations; large and deep incisions should be made into the diseased part; and the applications made to it should be of the warmest and most antiseptic kind."[77] So also in certain cases of erysipelas, Mr. Pearson seems to have made use of incisions; for he says, "The erysipelas that arises from the puncture of a membrane, or tendinous expansion, very often requires a free and extensive division of the parts, before any application can be attended with advantage."[78]

From these passages it is quite clear that these gentlemen did not make incisions, either at the same stage of the disease or for the same purposes, as Dr. Hutchinson. The great object to be gained by them was, that their applications might come in direct contact with the affected part, which did not enter into Dr. Hutchinson's calculation in recommending them. They made incisions to let out matter already formed, he to prevent its formation. "I have practised," says this gentleman, "the plan of making several free incisions with a scalpel, on the inflamed surface, in a longitudinal direction, through the integuments, and down to the muscles, as early in the disease as possible, and before any secretions had taken place. These incisions may be about an inch and a half in length, two or three inches apart, and vary in number from six to eighteen, according to the extent of surface the disease is found to occupy. These incisions not only yield the operator between fifteen and twenty ounces of blood from

[76] O'Halloran's Treatise on Gangrene, &c. p. 96, 1765.

[77] Pott's Works, vol. iii. p. 58.

[78] Pearson's Surgery, p. 219.

the vessels most actively engaged in feeding the disease, but they will give considerable relief to a tense and over-distended skin; which is clearly evinced by the great retraction that takes place between the lips of the incised wounds, immediately after the instrument is withdrawn; and further, they form ready channels through which any fluid may pass as soon as secreted; and thus the formation of bags of matter, and the insulation of the integuments, will be effectually prevented."[79]

Though Dr. Hutchinson speaks of making incisions before any secretions have taken place, I presume he cannot intend this to be literally understood, for the effusion of serum occurs at a very early period, and the extent of it is one of the indications as to the severity of the disease; and I cannot conceive that any one would be justified, under any circumstances, in inflicting a number of wounds, without knowing whether they were, or would be, required.

Mr. Lawrence has modified this plan, by recommending one long incision, continued throughout the whole extent of the affected part, instead of several shorter, on the ground that "the multiplicity of cuts is painful and alarming."[80] To this modification there appear, to my mind, several most important objections, without any corresponding advantages, to recommend its employment. Whatever the pain might be,

[79] On the Treatment of Erysipelas by Incision, by A. C. Hutchinson, M.D., in Med.-Chirg. Trans., vol. v. p. 282.

[80] Dr. Young, of Glasgow, seems to have been the first to adopt the single long incision, though not in point of priority of publication; for in a paper in the Glasgow Medical Journal, vol. ii. p. 241, 1829, which he says is the substance of a paper read before the Glasgow Medical Society, in the spring of 1823, in highly applauding the plan of incisions in phlegmonous, or, as he thinks it, spurious erysipelas, he says, "Accordingly, I made not a number of small cuts, as recommended by Mr. Hutchinson, but a longitudinal one, through the fascia, on the outside of the man's thigh, of about ten inches long."....."Both from general reasoning, and the experience I have already had, I would incline to prefer long incisions: by them the tension of the parts appears to be more effectually relieved."

the alarm would certainly be greater in the long than in the shorter incisions. The disease is by no means confined to one side of a limb, and although an incision throughout its length will certainly take off the tension, it will not afford the same facility for the escape of the effused matter, as three or four smaller made in the parts most affected will; for in the earlier stages of the complaint the deposits do not freely communicate with each other, at least so as to escape from a distance, as Mr. Lawrence himself has particularly pointed out; and it is one of the greatest recommendations of incisions, that they prevent the general undermining of the skin, by affording a ready exit to effusions as soon as formed. When, therefore, there are three or four sufficiently free incisions, at some distance from each other, a continual discharge goes on, and the tension is not only immediately removed, but it is effectually prevented from again taking place; whereas, when there is only a single incision upon one side of the limb, though that tension which arises from the stretching of the skin may be as immediately relieved, yet from the outlet for the effused matter not being so direct or ready, the fluids are very apt to accumulate on the side opposite to the incision, and suppuration or even sloughing to occur, so that sooner or later an incision becomes necessary. The long incisions do not admit of repetition, which the shorter do, and which are often most advantageously practised. Should the patient recover, and the wound not heal by the first intention, which we cannot expect it invariably to do, so long a cicatrix must prove a great inconvenience, and sometimes an impediment to the free motions of the limb. The hæmorrhage from such long incisions is often very alarming; nor can I wholly disconnect the death of some of the patients, whose cases Mr. Lawrence has with much candour related, from the loss of blood occasioned by the incisions. Two, three, or four pounds of blood, suddenly abstracted, are not lost with impunity, by the generality of people, even in the best condition of health,

and this is especially the case when suffering under a complaint like erysipelas, which of itself is an indication of want of power. The operation is a much more serious one than the shorter incisions are; a wound extending throughout the entire length of a limb, down to the fascia, or even through the fascia, is of itself no trifling evil, even in a healthy condition of the parts. It is only on the strongest evidence of their necessity, that I should feel justified in inflicting such cuts as are recommended by Mr. Lawrence, the extent of which the following quotations will show.[81] "I therefore made two cuts with a scalpel through the skin and cellular substance, in the whole length of the inflamed part, from above the elbow nearly to the wrist; one of these was twelve, the other ten inches long." (case 23). "He has inflammation of the skin and cellular substance of the right leg in nearly its whole length and circumference;.....I made an incision through the skin and cellular tissue, the whole length of the inflamed part, about forty ounces of blood flowed from the wound." (case 27.) "I saw her about eight o'clock in the evening, and made an incision through the skin and cellular membrane, over the middle of the calf, extending from the ham to the heel." (case 28.) "Considering that the case must terminate fatally, from the unfortunate combination of so severe an inflammation with a serious wound, unless the former could be stopped, Mr. Lawrence made two incisions through the skin and cellular membrane of the fore-arm, extending nearly the length of the limb. Blood flowed from them at first rather freely, but not more so than is desirable for procuring relief to the inflamed and distended parts; the bleeding gradually stopped, and had ceased in about three quarters of an hour, when the patient fainted: before any means could be adopted for his restoration, the state of syncope had terminated in death." (case 32.)

[81] Observations on the Nature and Treatment of Erysipelas, in Med.-Chirg. Trans., vol. xiv.

In a woman, in the Glasgow Infirmary, where Dr. Anderson made a long incision in the fore-arm, the hæmorrhage was so excessive that it became necessary to tie the brachial artery above the elbow. The fingers afterwards sphacelated and were removed, but the patient died.[82]

Mr. Earle is equally strenuous with Mr. Lawrence in advocating incisions in phlegmonous erysipelas, and has related the case of a young woman "in which an incision was made which extended from an inch below the great trochanter to within an inch and a half of the ankle."[83]

If these long incisions can be proved to be necessary, and that under their employment less mischief ensues than where they are not practised, of course, they ought to be zealously and promptly used, for though severe, they then would be so in appearance only. I cannot, however, conceal from myself, that sometimes medical men are liable to forget, that what are called remedies, are in themselves positive evils, and only benefits relatively. The employment of them can therefore only be advantageous when they overcome a greater mischief than they inflict; and, consequently, that we are never justified in employing a more severe means than is necessary to remove a disease. If of two remedies of different severity, but equally efficacious in curing a disease, we select the more severe, we commit a positive wrong to the patient, by so much as the remedy chosen exceeds in intensity the one not employed. That such would decidedly be the case with the long incisions of Mr. Lawrence, is, I think, certain, even were they shown to be equally useful with the shorter and more numerous cuts, as originally introduced by Dr. Hutchinson, which is far from being done.

[82] Glasgow Medical Journal, vol. i. p. 319.

[83] Earle on Cellular Inflammation in Medical and Physical Journal, vol. lvii. Though the case was not under Mr. Earle's own care, yet, from the manner in which he has related it, he shows that he quite approves of the treatment pursued.

Mr. Lawrence and Dr. Hutchinson are decidedly in favour of the incisions being made at the very commencement of the disease, thinking if then made they prevent its increase, and ward off suppuration and sloughing. In this Mr. Liston and Baron Dupuytren differ from them and wait until matter is formed. The former of these two says, "You should therefore make the incisions at an early period, that is, as soon as the presence of matter is indicated."[84] Dupuytren advises us to wait until the suppuration is definitively established and then to make free incisions, in situations favourable to the escape of the pus, which he directs to be very carefully removed each time the dressing is changed, which should be often. At an earlier period Dupuytren says incisions often increase the inflammation.[85]

Perhaps the most judicious time for making the incisions is between the two periods. In the earliest stages, so far as the local abstraction of blood is concerned, we may content ourselves with leeches or punctures, which, with cold evaporating lotions will often accomplish all we wish; but if the inflammation still proceed, uncontrolled by these means, we

[84] Clinical Lecture before referred to: Mr. Liston in his Elements of Surgery, second edition, 1840, appears to advocate having recourse to incisions at an earlier period than in the passages quoted in the text; he says, "Incisions then are made both in the early stages of the disease, and after effusion has occurred: in the former case they are justifiable, because they arrest the progress of the disease; in the latter, they are absolutely necessary, to prevent its injurious effects."—p. 64.

[85] "Vers le quatrième ou cinquième jour, le tissu cellulaire commence presque toujours à être frappé de suppuration. Laisserat-on le pus séjourner dans ses cellules, ou doit-on se hâter de l'évacuer par des incisions? Ces incisions diminuent quelquefois l'inflammation et la suppuration qui en est la suite, mais souvent aussi elles les accroissent. Il fault donc encore insister à cette époque sur les applications de sangsues et sur les réfrigérans. Mais si la suppuration est définitivement établie, n'hesitez plus, incisez largement les points que leur situation déclive rend aptes à recevior le pus; renouvelez fréquemment les pansemens; ayez soin, chaque fois que vous panserez le malade, d'absterger tout le pus avec des éponges."—Leçons Orales, tome ii. p. 159.

should not wait until suppuration be fully established and the cellular membrane broken down, but at once make two, four, or six incisions, each two or three inches long, in the most prominent places, or where matter and sloughs are most likely to form, down to the fascia. The cases in which is it necessary to exceed this latter number must be very rare; in the majority three or four incisions are quite sufficient to afford an outlet for the blood and any effusion there may be, as well as effectually to relieve the tension.

The incisions will be of comparatively little use, unless they penetrate to the fascia; and if there be reason to suspect the inflammation has passed beneath the fascia, it also should be divided. In a recent case of diffuse inflammation of the upper arm, and chest about the pectoral muscles, from a puncture received upon the middle finger in a post mortem examination, and where it was not quite certain whether matter had formed or not, I made an incision on the inner side of the arm immediately below the axilla down to the fascia; the cellular membrane was loaded with white milky effusion with a few globules of pus, but which did not flow from the wound. The scalpel was then passed through the fascia, when about two ounces of pus escaped.

At a later period of the disease there can be no difference of opinion as to the necessity of making incisions, the safety of the patient depends upon it: wherever there is any bogginess an incision should be instantly made, without waiting for the skin thinning or pointing, which do not occur. It is infinitely better to make fresh incisions, wherever they may be required, than to attempt to force the matter by pressure towards one already made, or to drag from a distance a sloughing portion of cellular membrane through it. By making these incisions, the mischief may often be confined to the spot; but, if neglected, the cellular tissue of the whole limb may be struck with gangrene, and the skin be detached from its connections so as necessarily to be destroyed.

It can hardly be requisite to say that incisions are not to be made when the inflammation is limited to the skin; the most strenuous advocates for their employment would not then advise them. In the varieties of erysipelas, where the inflammation affects the skin and cellular membrane, or the latter alone, the introduction of the practice of making incisions must be regarded as most important;[86] as it enables us to save many patients who would otherwise certainly be destroyed, and to conduct others through the illness, comparatively unharmed, who without them would have been maimed for life. How far the utility of incisions arises from the mere letting out of the effused serum, which Sir B. Brodie and Mr. Liston[87] seem to regard as of a poisonous nature, is rather uncertain; that the relief of the tension materially lessens the inflammation is well known, but that the serum is generally of such an acrid nature, as to poison and destroy the cellular membrane is, I think, far from certain; that in many cases it is not, is quite clear; and in those instances where the sloughing of the membrane is very rapid and extensive, the intensity of the inflammation and the constitutional derangement afford a much more probable cause than the nature of the fluid effused.

In consistency with every other question connected with erysipelas, the propriety or not of using topical applications to an erysipelatous part, and, if proper, of what nature they should be, is a disputed point. While many think very

[86] "Your only chance of preserving the vitality of the cellular membrane beneath the skin, is to give free exit to the poisoning fluid which it secretes; for it is a law of the animal economy, that when any part situated beneath another is destroyed, the structure super-imposed also suffers."—Clinical Lecture at St. George's Hospital, "On Erysipelas, with Diffuse Cellular Inflammation," by Sir B. Brodie, reported in the Lancet, vol. xxvii. p. 934.

[87] "But in many cases there is a secretion of an exceedingly acrid nature, dark and putrid, which passes into the cellular tissue, and very rapidly destroys it, ultimately destroying the skin too."—Lecture before quoted.

highly of local remedies, others are disposed to regard them as ineffectual and useless, and a third party reject them as positively injurious and prejudicial. Those who consider the eruption as critical, are much afraid, lest, by any local measures it should be repelled; and although this fear is not so much entertained now as it formerly was, still, many practitioners are prevented from using external applications, lest metastatis should be induced.

Hoffman says, "most kinds of topics repel the erysipelatous humours with the same ill events, (as emetics, purgatives, and bleeding,) those which have in many cases appeared serviceable, or at least innocent, have in others been manifestly prejudicial."[88] Cullen is hardly more favourably inclined towards their employment. He says, "various external applications to the part affected have been proposed, but almost all of them are of doubtful effect. The narcotic, refrigerant, and astringent applications are suspected of disposing to gangrene; spirituous applications seem to increase the inflammation, and all oily or watery applications seem to occasion its spreading. The application which seems most safe, and which is now most commonly employed, is that of a dry mealy powder frequently sprinkled upon the inflamed parts."[89] Bateman and Copeland think if external applications in the early stages of erysipelas are not useless or even prejudicial, their effects are certainly not beneficial, and they do not recommend them, the latter excepted, in some few cases at a more advanced period. Velpeau considers that local treatment in simple erysipelas has very little effect, and declares, "I do not believe that any local application with which we are now acquainted can extinguish simple erysipelas, and I even doubt whether there be any capable of arresting its progress."[90] However,

[88] Hoffman's Practice of Physic, vol. i. p. 201.

[89] Cullen's First Lines, vol. ii. p. 266.

[90] Clinical Lectures in Medical Gazette, vol. xxvi. p. 830.

by far the greater number of authors, local applications of one kind or another are approved of, but the agreement by no means extends to the kind of application, in which there is much contradiction.

COLD LOTIONS.

Cold evaporating lotions appear to be of considerable benefit in the treatment of erysipelas. In the majority of cases they tend much to relieve the distressing heat and burning pain, which are so annoying to the patient. In favour of their employment might be quoted Dupuytren,[91] Peart,[92] Wilkinson,[93] James,[94] Good,[95] Bateman,[96] Tweedie,[97] and others. Some, as Dr. Schedal, even do not hesitate to recommend the continued application of iced water in phlegmonous erysipelas of the extremities.[98] On the contrary, Heister tells us, that "an erysipelas is more particularly dangerous when it is treated with external applications which are cooling, fat, or oily.[99] Pearson is decidedly against the use of cold.[100] Liston says, that though cold lotions may afford temporary relief, their use is fraught with the utmost danger.[101] Dr. Bright disapproves of cold lotions when the head is affected.[102] Copeland thinks they should be very carefully used, as they are somewhat hazardous;[103] and Symes, that they are

[91] Leçons Orales, vol. ii. p. 158.
[92] Practical Observations on Erysipelas.
[93] Remarks on Cutaneous Diseases.
[94] James on Inflammation, p. 393.
[95] Good's Study of Medicine, vol. iii. p. 78.
[96] Bateman's Synopsis of Cutaneous Diseases, p. 189.
[97] Cyclopædia of Practical Medicine; art. Erysipelas.
[98] Library of Practical Medicine, vol. i.; art. Erysipelas.
[99] Heister's Works, chap. vi. p. 211.
[100] Pearson's Surgery, p. 217.
[101] Elements of Surgery, p. 65.
[102] Bright's Medical Report, vol. ii. p. 97.
[103] Copeland's Dictionary; art. Erysipelas.

unsafe until the constitutional disorder has been removed.[104] Alibert declares that to apply cold is madness.[105] When there is great depression of the system, the patient is old, or exhausted by previous illness, or there is tendency to metastasis, and the inflamed part is not much swollen, hot, or burning, but rather of a dull livid colour, than of a bright, shining, red, appearance, the abdominal secretions much deranged, the viscera or their membranes already involved, cold should not be applied. Even in some few cases where the indications are such as lead us to suppose its application would be useful, on trial it is found to be disagreeable to the feelings of the patient, increasing the pain in the part and producing a general feeling of chilliness; in such cases it ought to be immediately discontinued and warmth substituted for it. With these exceptions cold lotions will generally be found soothing and efficacious applications.

Many practitioners, who use cold lotions freely upon the extremities, hesitate to apply them when the face and scalp are the seat of the complaint, fearing lest it may be repelled from the surface upon the brain and its membranes.[106] How far this may be true must be determined by experience, but from what I have seen I am inclined to draw quite a contrary conclusion. So far from the disease having been repelled, the brain has been less affected, cæteris paribus,

[104] Symes's Principles of Surgery, p. 617.

[105] "Les bains chauds sont avantageux, parce qu'ils portent manifestment à la diaphorése le tegument inflammé; mais il serait insensè de proposer les bains froids, qui comptent déjà plusieurs victimes, depuis qu'on a eu l'imprudence de les employer. J'ai vu un cas bien sinistre de ce genre; et déjá on avait connaissance de celui cité par Hagendorn, au sujét d'une femme qui pour se soulager d'une sensation brûlante qu'elle éprouvait a ses joues, les couvrait de linges préabablement trempés dans l'eau fraîche: elle mourut d'une frénésie. Tous les astringens ont un inconvénient analogue, et sont repudiés avec juste raison." —Alibert's Traité complet des Maladies de la Peau, p. 20; fo. Paris, 1833.

[106] Dr. Craigie adopts the contrary practice; he directs cold lotions to be applied when the head, face, or upper extremities are affected; warm when the chest or belly are involved.—Elements of the Practice of Physic, vol. ii. p. 478.

where cold has been freely applied to the whole scalp, than where it has not been used, and in cases where the brain has been much affected previously to the application of cold, I have seen it become much relieved under the use of it. Practitioners do not fear to apply the coldest lotions, or ice itself, to the whole scalp in phrenitis, nor do I understand why they should not do the same in erysipelas, seeing that in nearly all cases there is already more or less affection of the same parts. Besides, the degree to which the brain and its membranes are involved, is commonly in direct proportion to the extent of the external inflammation, and not, as the fear of cold would lead us to suppose, in the inverse ratio. Of course cold is not to be applied to the scalp indiscriminately, any more than it is to the extremities, but when there are none of the indications against its use, which are above noticed, it forms a valuable remedy. In all cases where the scalp is affected, one of our first directions should be to have all the hair removed; if this be followed by a diminution of the head-ache, as it generally is, it affords a pretty plain indication that the practice may be followed up by the application of cold washes.

The lotion which is commonly recommended is a solution of acetate of lead in distilled water, and on account of its sedative properties it is perhaps one of the best; but cold water, or vinegar and water, when the inflammation is very intense, seem to be equally efficacious applications.[107] Some

[107] I subjoin the account given by Celsus of the treatment of erysipelas, who seems not to have had many fears respecting the use of external cold or stimulants, and whose management of this complaint seems to have been most judicious.

"Id autem, quod ἐρυσίπελας vocari dixi, non solum vulneri supervenire, sed sine hoc quoque oriri consuevit: atque interdum periculum majus affert; utque, si circa cervices aut caput constitit. Oportet si vires patiunter, sanguinem mittere: deinde imponere simul reprimentia et refrigerantia; maximeque cerussam solani succo, aut Cimoliam cretam aqua pluviali exceptam, aut ex eadem aqua subactam farinam, cupresso adjecta; aut, si tenerius corpus est, lenticula.

combine with the lead a weak stimulant, as a little spirit of wine, distilled vinegar, muriate of ammonia, liquor ammoniæ acetatis, or the subcarbonate of ammonia; any of which may be used, and often with much benefit, particularly in those cases where there is any doubt as to the propriety of using cold applications, and in the later stages of the disorder, when the stimulant tends much to dissipate the congested state of the vessels. In many cases, especially in the young, the debilitated, and the old, where we fear to apply the saturnine lotions cold, or where they induce any unpleasant feeling, they may often with much advantage be used tepid.

Dr. Peart recommended the following form, ammoniæ subcarbonatis, plumbi superacetatis aa. 3i., aquæ rosæ Oj. This, which has been much praised by Mr. Wilkinson, Mr. James, Dr. Tweedie, and others, is certainly useful, but it is little more than diluted acetate of ammonia, on account of the decomposition which takes place. An aqueous solution of opium, or acetate of morphia, may sometimes, where there is much pain or itching, be usefully added to the lead.

Cold sedative lotions, with punctures or incisions, form, in my opinion, the best local treatment which, under ordinary circumstances can be adopted in the cutaneous and cellulo-cutaneous varieties of erysipelas, when they affect the head and face; when the latter variety is seated upon the extremities, as has already been said, incisions are more frequently necessary.

Quidquid impositum est, betæ folia contegendum est, et super linteolum frigida aqua madens imponendum. Si per se refrigerantia parum proderunt, miscenda erunt hoc modo: sulphuris p. ℥. 1. cerussæ et croci, singulorum p. ℥. xii. Z. eaque cum vino conterenda sunt, et id his illinendum: aut, si durior locus est, solani folia contrita suillæ adipi miscenda sunt, et illita linteolo superinjicienda."—Celsus de Medicina, Liber 5, c. 26, p. 33, Milligan's Edition.

STIMULANTS.

Some of the older practitioners were in the habit of applying very strong stimulants to an erysipelatous part. The forms recommended by Sydenham[108] and Heister[109] are much stronger than most at the present day would feel justified in using, unless under very extreme cases of depression, when gangrene is threatened; or when the inflammation has disappeared from the part originally affected, and fixed upon some internal organ, and it is desired to recall it, in which case we have much more effectual means. Pott and Pearson also, both recommend stimulating embrocations, and it was not an uncommon practice to add to the warm fomentations a portion of opodeldoc.[110] We have seen that more recently milder stimulants have been much employed, by Peart, Wilkinson, James, Tweedie, and others. Good, indeed, speaks favourably of "stimulant epithems of æther, alcohol, and camphorated spirits, applied in the first stage of the disease to the part affected, as having been found the most beneficial practice,"[111] and Copeland recommends creosote water and epithems of spirit of turpentine.[112] How far these strong applications, in the early stage of the disease, under ordinary circumstances may be good treatment, is, I think, more than doubtful; but it is very possible, in extreme cases, where gangrene threatens, and there is excessive nervous depression, or where it is desirable to rouse the system and excite the part affected, such applications may be useful and ought

[108] ℞ "Spirit of wine half a pint, Venice treacle two ounces, long pepper and cloves reduced to powder, of each two drams, mix together; cover the part affected with brown paper, moistened with this mixture."—Sydenham's Works, by Swan, p. 283.

[109] Heister, p. 212.

[110] White's Surgery, p. 13.

[111] Good, vol. ii. p. 374.

[112] Copeland's Dictionary, p. 854.

to be tried. I am, however, inclined to think, that if the patient has been properly treated at first, he will not be reduced to such a state as to render these applications necessary; or, being so reduced, it will be found they cannot save him. When the case has not been attended to until such extreme symptoms are developed, strong stimulants, local as well as general, are then our only means of giving the patient a chance of recovery.

The milder stimulants may frequently be added with benefit to the common saturnine evaporating lotions. The degree of concentration must be regulated by the stage of the complaint, the patient's age and constitutional powers, as well as the condition of the part. In young plethoric persons, and in the earlier stages of the complaint, they are better altogether omitted; in infants, or old weakly persons, and in the later periods of the disease, especially when it is seated upon the more distant parts of the body, as the hands, feet, or scrotum, the stimulants should be strong enough to make an impression. Nothing, in such cases, answers better than the subcarbonate of ammonia, with a little camphorated spirit.

FARINACEOUS POWDERS, &c.

Farinaceous and absorbent powders, such as flour, starch, hair-powder, prepared chalk, and impure carbonate of zinc, were formerly much employed for covering erysipelatous parts, and many who, like Cullen, objected to all other external applications, did not forbid their use; latterly, they have fallen into disrepute, and are now very little employed; by many they are even considered as highly injurious. In favour of their use there is Heister, Bell, Good, James, and Copeland; while Pearson, Callisen, Bateman, Liston, and nearly all the moderns are opposed to them. Pearson goes so far as to say that he has seen very disagreeable and

dangerous consequences to ensue from their use.[113] If formerly these powders were too indiscriminately used, it is certain that at present they are too generally rejected. This has arisen from not ascertaining to what cases, and in what periods of the disease, they are applicable.

In the earlier stages of the disorder, when there is much inflammation, the heat great, and there is little or no vesication, they are injurious, by increasing the heat and irritation; but at a later period of the disease, when the part is covered with vesications, they afford much relief to the patient. By absorbing the fluid, they prevent the surface over which it would otherwise flow, being excoriated; and by the crust which is thus formed, the denuded cutis is protected from the air, and a painful source of irritation avoided. The great comfort flour and other absorbent powders are in burns and scalds, fully warrants our using them in the analogous condition of the cutis, when vesicated by erysipelas.

When the skin is not much vesicated, and the inflammation affects the cellular membrane rather than the dermis, these absorbents are not indicated, and by increasing the heat, without conferring any corresponding advantage, may be positively injurious; it is, therefore, in the cutaneous variety of erysipelas, and especially as it appears in the face, that they are more useful than elsewhere.

The selection of the powder is not a matter of much moment. A mixture of equal parts of flour and the impure carbonate of zinc, or prepared chalk, answers as well, or perhaps better, than any other. Whatever powder be employed, it should be sprinkled upon the vesicated parts by means of a flour dredger, so freely as entirely to cover it, and as the crusts fall off, more should be applied so long as the oosing continues. When this ceases, as it usually does in two or three days, the dried matter becomes detached, falls off, and leaves the parts underneath sound.

[113] Pearson's Surgery, p. 218.

Enveloping the erysipelatous part in raw cotton has been very highly commended by M. Reynaud, as being of great benefit and comfort; and Dr. F. M. Robertson, of Augusta, Georgia, has also reported in very favourable terms of the use of it in erysipelas.[114] Raw cotton is, without doubt, highly useful in burns and scalds, and probably by protecting the inflamed skin from the air, would act in the same manner in erysipelas.

WARM FOMENTATIONS AND POULTICES.

Occasionally, when cold applications are unpleasant to the feelings of a patient, or are, from the causes above mentioned, not suitable, warm fomentations have a soothing tendency, and are useful; but, as a rule, their constant application is to be condemned. The occasional washing of the vesicated surface with some warm mild sedative or alkaline decoction, is grateful to the feelings of the patient, and lessens the irritation. Decoctions of elder flowers and quince seeds were formerly held in great repute for this purpose. After leeches have been applied, or punctures or incisions made, warm fomentations or a poultice for a time, are useful, by encouraging the bleeding. But as warmth and moisture increase the action in a part, and relax it, as well as augment the quantity of blood in it, in the early stages of erysipelas they are decidedly injurious, by encouraging the disposition to effusion; and at a later period, from their tendency to keep up suppuration, they should be avoided.

In phlegmon, when we wish for suppuration to be hastened, and for absorption of the parts, in order that the matter may be evacuated, fomentations and poultices are most serviceable; but in erysipelas, where the matter does not point, they only increase the diffusion of it. Willan, Pearson, Mer-

[114] Southern Medical and Surgical Journal for July, 1839, (American), and also Medical Gazette, vol. xxv. p. 255.

riman, James, and Liston are, on the whole, rather in their favour; and Alibert, who lauds warm fomentations, says, emollient poultices are particularly indicated; but Bell, Dupuytren, and most of the best informed modern surgeons reprobate their use.

In most cases of erysipelas, even at a late period, pressure, with mild stimulating applications, is preferable. When used at an earlier period, a decoction of poppy capsules, or a warm solution of acetate of lead with opium, are more soothing, and certainly allay the pain and irritation more than warm water alone; or, if poultices are applied, the addition of bruised hemlock, or henbane leaves, to the bread, may be made with advantage.

OINTMENTS.

Instead of using lotions or powders, by some, we are recommended to smear the inflamed surface over with ointments of various kinds. B. Bell speaks favourably of the ointment of acetate of lead,[115] and White recommends the simple cerate.[116] While many, fearing lest the pores of the skin should be obstructed by the oiliness, decidedly condemn ointments of every kind, as Heister,[117] Pearson,[118] and Good.[119]

In the earlier stages of the complaint, ointments, whether simple or medicated, are amongst the worst applications which can be used, as they tend so materially to increase the heat of the part, by preventing all evaporation. At a later period of the disease, when the cutis is exposed by the breaking of the vesications, they do not more effectually protect it than do the absorbent powders, while they do not take up the acrimo-

[115] Bell's Surgery, vol. v. p. 378.

[116] White's Surgery, p. 13.

[117] Heister, p. 211.

[118] Pearson, p. 218.

[119] Good, vol. ii. p. 380.

nious discharge, for which, however, if preferred, they may be substituted, as being more cleanly.[120]

In the later stages of erysipelas, or rather when its effects are to be treated, stimulant or absorbent ointments, with properly regulated bandages are, combined with a horizontal or raised position of the limb, (which, from first to last, ought to be carefully maintained,) the best treatment, and hasten the cure much more effectually than warm relaxing applications. The ceratum resinæ, ung. elemi comp., ceratum calaminæ, or an ointment composed of cretæ ʒii., camphoræ gr. xx., ceratum cetacei ʒvi., are the most useful. Ointments into which some of the aromatic balsams enter, according to the degree in which the parts require stimulating, may be applied with advantage, as they often expedite the healing process more quickly than many other preparations.

MERCURIAL OINTMENT.

A few years since, the practice of smearing the part affected by erysipelatous inflammation over with newly prepared mercurial ointment, was introduced and strongly recommended by M. Ricord, in Paris.[121] Since then it has found many admirers in this country, as James, Copeland, Reid, and M'Dowel;[122] and many cases of its successful application are reported in the different periodicals.[123] Dr. Schedel, who is one of the latest writers on erysipelas,

[120] I have found a combination of flour with some oily preparation, often very advantageous in burns; first sprinkling the part over with prepared chalk or starch, and then enveloping it in thin bandages imbued with oil and lime-water, or with simple cerate, so as more effectually to exclude the air, and thus act as an artificial epidermis.

[121] M. Ricord is not allowed the undisputed claim of having first suggested mercurial ointment. M. Velpeau says that he was the originator of the practice; and by some, the credit is given to Drs. Dean and Little, of Philadelphia.

[122] Dublin Medical Journal, Nov., 1834.

[123] See especially the Lancet, vol. xxvii., for 1835.

speaks highly of the beneficial effects of mercurial unction in phlegmonous erysipelas, and recommends that it should be used in the manner first directed by Drs. Dean and Little, of Philadelphia: viz. that the ointment should, without friction, be gently spread over and beyond the parts, and renewed every two hours, pieces of linen being placed over it.[124]

I have seen the ointment tried in Paris, by Ricord himself; in the London hospitals; and have often used it in private practice, but I cannot say that I ever saw more than a doubtful, if any, good ensue from its application; and in some cases, the heat and swelling became greater after its application. In those cases where it has been thought beneficial, I believe it has excited salivation, and that it is only in this way it is beneficial. The skin appears to absorb the mercury more quickly, when inflamed and vesicated, than it does in a healthy condition, when the epidermis is entire; and from the heat, the ointment is constantly kept in a fluid state, and absorption facilitated. It is thus, by its general action, rather than its local, that mercurial ointment has been useful. But this action of mercury may be much more readily and advantageously obtained, by the internal administration of it, and the excessive degree of ptyalism which has often supervened under the use of the ointment, be avoided, as well as the dirt and disagreeable nausea arising from the smell of it.

After two or three days, the skin usually becomes pale and wrinkled, and the pain and heat less, as it would have done without any application. And I may here remark upon what has been a fruitful source of error to many of those who have advocated a particular mode of treatment; under the use of their favourite remedy, in a few days, more or less, according to the period of the disorder, the patient becomes better, and the improvement is forthwith set down to the credit of the remedy, whereas it is only the natural course of

[124] Library of Practical Medicine, vol. i. p. 374.

the disease. About the sixth or seventh day, in the majority of cases of erysipelas, the inflammation ceases to extend and disappears; and even before this time the parts which were first affected are much less inflamed. I do not mean to say that in some cases, under proper treatment, the inflammation does not cease sooner, but I am sure that this most important consideration has been overlooked by more than one of those who have propounded specifics for erysipelas, as a reference to the dates of cases furnished by themselves will show.

Mr. Liston ridicules the use of mercurial ointment,[125] and Rayer tells us, that he has many times covered one side of the face with mercurial ointment, and the other with lard, or butter; and that at other times he has covered one side of the face with the ointment, and left the opposite side untouched, and that he has not been able to perceive any difference in the rapidity of amendment in the two sides.[126]

Even Velpeau, who boasts of being the introducer of the practice of smearing the inflamed surface with mercurial ointment, and of having already had a dozen or two of successful cases before any body else thought of the plan, has now abandoned it, and says, what he formerly took for success was mere coincidence; that now, if he had to choose between applying hog's lard and mercurial ointment, he should prefer the former, because he thinks mercurial ointment may often favour the extension of erysipelas, by the irritation which it occasions, while hog's lard possesses the negative properties of excluding the air, and keeping the skin soft.[127]

ACTUAL CAUTERY AND BLISTERS.

The actual cautery was first recommended in the treatment of erysipelas by its determined advocate, Baron Lar-

[125] Lancet, vol. xxix. p. 330. Clinical Lecture.

[126] Rayer's Traité des Maladies de la Peau, par. 233.

[127] Clinical Lectures in Medical Gazette, vol. xxvi. p. 829.

rey,[128] and has since, it is said, been employed by M. Baudens with great success in Africa. Were it not that there exists such a dread of its application, it might probably, in some cases of the cellulo-cutaneous and cellular varieties, be advantageously used. The application is not nearly so severe as is imagined, when the iron is at a white heat and applied only for an instant. Larrey supposed it would concentrate the inflammation to one point, and thus prevent its extension; a supposition which is by no means improbable, when we consider the effects of caustics. The practice has been very rarely tried in England, nor does it seem likely to come into vogue, as the evidence of its success must be very decided before either the patient will be induced to submit to what he so much dreads, or the surgeon to insist upon the application of an extreme measure.

Dupuytren appears to have been the first to recommend the application of blisters upon erysipelatous parts. The report of the great success attending his practice, induced numbers to overcome their prejudice against applying blisters upon the inflamed surface; of which, like leeches, and for the same reason, there was much dread; the result has been favourably spoken of by many who have tried them. In this country, Duncan,[129] James,[130] and Copeland[131] commend their employment. Rayer acknowledges the favourable results of the actual cautery and blisters; but says, comparative trials have led him to prefer general and local bleeding, purgatives, and incisions to them. It would also appear, that the success Dupuytren obtained by blisters was not so great or uniform as was represented, as the following passage from

[128] "Actual Cautery applied to the points which are reddest and nearest the wound, instantly stops the progress of the Inflammation."—Larrey on the Application of the Actual Cautery in Erysipelas following Wounds. Revue Médicale, 1826.

[129] Edinburgh Med.-Chirg. Trans., vol. i. p. 639.

[130] James on Inflammation, p. 395.

[131] Copeland's Dictionary, p. 834.

his Clinical Lectures will show. "If the symptoms continue and increase, I dare not recommend blisters; such different effects have been obtained by them that I fear to employ them. Sometimes I have by this means fortunately determined resolution; at other times, although very rarely it is true, sloughs have evidently been occasioned. I am the more wishful to insist upon this point, because the success I have obtained by them has been much exaggerated in theses and books. It is not only in the phlegmonous, but in almost every case of erysipelas, that I have recommended and employed blisters with much advantage. But if they are sometimes injurious in the phlegmonous, more frequently they have appeared not to exercise any influence over its development."[132] From this extract, it would appear that blisters are not so useful as by some has been represented, and that they are not to be indiscriminately applied in every case; but there can be no doubt, if the cases are carefully selected, they may be advantageously employed. They should always be preceded by purgatives and local bloodletting. They seem to act, as the actual cautery does, by fixing the inflammation to the part affected; and are, accordingly, especially applicable in the erratic variety, or where there is much inclination to metastasis. It does not appear unreasonable to suppose that blisters, like the actual cautery, may sometimes tend to diminish the disposition of erysipelas to spread, and induce more of a true phlegmonous character, by altering the action of the capillaries, and occasioning the effusion of plastic lymph.

Blisters may either be applied over the inflamed surface itself, or they may be made completely to encircle the inflamed limb as a band, two or three inches broad, placed equally upon the inflamed and sound skin, or applied upon the sound skin at a little distance from the inflamed portion, where a barrier will sometimes be formed, over which the erysipelas

[132] Leçons Orales, vol. ii. p. 158.

does not pass, though at other times they are quite ineffectual. Mr. Lawrence has related three cases, and Dr. C. Hutchinson one, in which blisters applied round the limb in this manner were effectual in stopping the spread of the inflammation. I have seen two or three instances of success, but more of failure.

With regard to the effect of blisters in superficial erysipelas, Velpeau says, "I have myself tried blisters in every possible shape, and in every possible manner, large and small, above or below, around or in the centre of the inflamed surface, and have come to the conclusion that they are of no use whatsoever in erysipelas, properly so called." But in phlegmonous erysipelas, Velpeau warmly recommends the use of enormous blisters to cover the whole inflamed surface, which he declares are not much more painful or severe, but incomparably more beneficial than smaller blisters placed on the middle of the inflamed surface. "I have, I believe in several instances saved the life or the limb of my patient, by adopting this plan of treatment. I remember very well a case of this kind which occurred in my wards last year. The patient, an old man of a weak constitution, was affected with phlegmonous erysipelas, extending over the leg and a part of the thigh, and was in a very critical state. As it was impossible to have recourse to general bleeding, I applied an immense blister on the entire leg and thigh in the form of a pantaloon, and the patient was cured."[133]

In the later stages of the disorder, if there be pus, and it be not very extensively diffused, blisters may sometimes occasion its absorption, and thus prevent the necessity of an opening; an effect often seen in chronic abscesses and suppurating buboes. While we must guard against applying blisters in the earliest stages, so long as there is much febrile excitement, we must also take care that the patient be not too much exhausted, as happens in some cases of erysipelas, attended

[133] Medical Gazette, August 21, 1840, vol. xxvi. p. 831.

with considerable œdema in old persons, where there is great fear of gangrene being induced by them.

When the viscera are affected, and more especially the brain, blisters applied near to the part, are amongst our most certain and efficacious means, and should never be neglected, whether the part of the skin to which they are applied be erysipelatous or not. Should the disorder have suddenly left the surface and affected an internal part, blisters must be directly applied upon the original seat, or some other portion of the skin, for the purpose of inducing, if possible, a re-translation of the local affection, which may otherwise probably prove fatal.

NITRATE OF SILVER.

The nitrate of silver was first recommended by Mr. Higginbottom[134] as a local remedy of great power in the treatment of erysipelas; it has since been much used, and on the whole, opinion is in favour of it. Mr. Higginbottom does not hesitate to apply it freely over the whole inflamed surface, and also a short distance upon the sound skin, so as to produce slight vesications: he recommends that the inflamed part be first well washed, and that a stick of the nitrate should be drawn in a flat direction over every portion of the diseased surface. But a more convenient method, and an equally efficacious one, is to paint the surface over with a solution of the salt, by means of a camel hair pencil. From eight to twelve grains of the nitrate to an ounce of distilled water, or six to eight grains in the same quantity of rectified spirit, answers very well. It has been asserted, that if applied all round the limb upon the sound skin, about an inch or two from the inflamed surface, it will check the progress of the disorder; this I have seen it do a few times, but I have more frequently seen it fail to exercise any such influence. Dr. Craigie, however, declares

[134] Essay on the Use of the Nitrate of Silver, 8vo., 1829; 2nd edit. p. 28.

that, "among the means employed to arrest the extending progress of the disease, perhaps none is more effectual than the plan of enclosing an erysipelatous patch in a ring of nitrate of silver:"[135] and Mr. Liston says, that in erythema, if the line be drawn at some distance from the affected tissues, it is seldom that the disease oversteps it.[136]

Though the remedy has not proved so uniformly successful in the hands of others, as represented by Mr. Higginbottom, it certainly, in some cases, acts very beneficially, and is one which I think ought to be tried, if the case be seen at an early stage and matter has not formed, before having recourse to incisions. Mr. Liston speaks highly of the application to the part when the disease is superficial and does not extend over a large surface, nor is seated upon the head or face, but seems not to approve of it if the inflamed surface be extensive, or the cellular membrane be involved.[137] Dr. Elliotson[138] and Dr. Thomson[139] both speak in very high terms of it, and are not deterred from applying it over a considerable extent of skin; Mr. James, Dr. Copeland, and Dr. Tweedie also commend its employment. While, on the contrary, Rayer declares that in his hands it has failed to arrest the progress of the complaint; and Velpeau says, that although he has sometimes seen the nitrate of silver apparently extinguish erysipelas, much more frequently the disease pursued its course, as though nothing had been done, and he thinks it will soon fall into discredit.

Though Mr. Higginbottom says, "I do not at first use the nitrate of silver in slight cases of erysipelas of the face, but resort to every active constitutional means of cure, if these means have failed, I have recourse to the nitrate of

[135] Craigie's Elements of the Practice of Physic, vol. ii. p. 479.

[136] Liston's Elements of Surgery, p. 62.

[137] Lancet, vol. xxix. p. 330; and Elements of Surgery, p. 62.

[138] Lancet, vol. xxv. p. 792.

[139] Lancet, vol. xxv. p. 105.

silver:" in some of the cases he has related, he seems to have applied it on his first visit to the patient; and it would appear probable that it would be more effectual at an early than at a later period.

I do not, however, think that a remedy like the nitrate of silver, whose effect, if it be beneficial, is to suddenly suppress the local action, should be indiscriminately applied in every case, or when a large extent of surface is affected; lest metastasis be induced, and the disorder be thrown upon an important viscus or membrane. In one case which I have lately seen, where the nitrate was freely applied over the face and forehead, the coma immediately became more intense, and the patient soon afterwards died, as though from effusion upon the brain. Brisk purgatives ought almost invariably to precede the application.

Neither should the nitrate of silver be used where matter has already formed, or where the cellular membrane is extensively involved, because, as the influence of the remedy does not usually penetrate so deep, and a hard incrustation forms upon the skin, the mischief may spread rapidly and extensively without our being aware of it.

TINCTURE OF IODINE.

Tincture of iodine is a remedy, which, so far as I know, has not been used in erysipelas except by myself, and those to whom I have mentioned it; but, from what I have seen of its effects, I am inclined to think it will be found a valuable preparation in cases of the *cutaneous* variety of erysipelas. I would wish to speak with some degree of hesitation, because a few cases are not sufficient to authorise any person in being very positive about the effects of a remedy, as circumstances may exercise an influence which may be overlooked; it is, however, an application which deserves a fair trial.

The compound tincture of the Pharmacopœia is not

strong enough. A saturated tincture in pure spirit should be made in the proportion of about forty grains of iodine to the ounce of spirit. This may be applied, either pure or diluted, two or three times, as may be borne, by means of a camel-hair pencil, over the whole erysipelatous surface, and the surrounding sound skin. The application at the moment occasions some little smarting, but not nearly so much as the nitrate of silver; this, however, soon subsides, and is followed by a diminution of the pain, burning heat, and swelling of the part. On the following day, in some mild cases, I have seen the patient quite convalescent; but in more severe attacks it has been found necessary to paint the surface two or three days in succession, but never more than this latter number. In one case, where I applied the tincture upon one side of the face, and left the other untouched, the inflammation was much less extensive and sooner disappeared on the side where it was applied than on the other. In no instance has suppuration taken place, and in one case in particular, I have every reason to think, it was prevented from occurring in the eyelids by the tincture being freely applied. In a case of erysipelas of the fauces, after a single application of the tincture, the œdema and redness of the mucous membrane disappeared in a few hours. For two or three days the skin remains of a yellowish red colour, which is the most unpleasant effect usually seen from its employment.[140] The iodine appears to act much in the same manner as the nitrate of silver, by causing a contraction in the calibre of the dilated blood

[140] In only one case have I witnessed any inconvenience from the tincture of iodine, beyond the temporary smarting. This was in the lady whose case I have alluded to in Note 144, page 112, and arose solely from her skin being excessively irritable under almost any application. Not being aware of this circumstance at the time, the strong solution was used, when diluted one half would have been sufficient. However, although the application produced considerable pain, and increase of inflammation for two or three days, it has been beneficial, for it has so changed the action of the part, that there has been no severe recurrence of the attack since its application.

vessels of the inflamed part; but, in consequence of its being a milder application, and not effecting this in so sudden a manner as the nitrate of silver does, it is on this very account a safer, and, in my opinion, a more judicious remedy, in those cases where the diseased surface is very extensive. I have not trusted to the local application of the tincture of iodine alone, but have always at the same time administered purgatives and salines.

I have had no opportunity of seeing it tried in the erysipelas of infants, but from its modus operandi, I should imagine it especially adapted for this form of the complaint, as well as for that form of it which occurs in the lower extremities of old or debilitated persons, and when accompanied by much œdema.

BANDAGES.

In the year 1815, M. Bretonneau published a thesis, in which compression is highly commended in the treatment of cutaneous inflammation; and in the Archives Générales de Médicine for 1826,[141] Velpeau has very warmly advocated the employment of bandages in phlegmonous erysipelas, and has related several cases of success obtained by them in a very striking manner, after other means had failed; indeed, had others met with corresponding success, no other remedy could have been requisite. Erysipelas would no longer be the serious and formidable disease medical men have been accustomed to consider it; we should only have to apply a bandage for a few hours and the cure would be accomplished. Unfortunately, though as perhaps might have been anticipated, this is not so, and in the hands of some British practitioners, such lamentable results have ensued

[141] "Mémoire sur l'emploi du bandage compressif dans le traitement de l'érysipèle phlegmoneux, de la brûlure et de plusieurs autres inflammations aiguës des membres: par A. Velpeau."—Journal de Médicine, vol. xi. p. 192.

from the use of bandages, that they are now not much employed, at least in this country.[142]

Long before Bretonneau and Velpeau, Heister appears to have used compression in erysipelas, for he strongly advises compresses to be saturated with a stimulating lotion, and to be retained on the part by means of a bandage.[143] On the continent, Guérin speaks in very high terms of the utility of bandages;[144] while Rayer says that they are often useless, and sometimes dangerous in phlegmonous erysipelas; but that towards the end of the disease they may be advantageously applied to diminish the œdema and swelling of the limb; or in œdematous erysipelas, and when it is accompanied with phlebitis.[145]

In a case related by Dr. Duncan, where a bandage was applied by Dr. Nelson to the fore-arm of a young woman, gangrene supervened, from which she soon died;[146] and in

[142] In his recent Lectures Velpeau repeats the high praise he formerly bestowed upon compression in the treatment of phlegmonous erysipelas. If applied before suppuration has taken place, he says it prevents it, and if after this has occurred, it cures it. But he qualifies its use in the following passage, which certainly looks somewhat like preparing to give way still more, and perhaps do with bandages as he has done with mercurial ointment. "Some surgeons have applied compression in the treatment of simple erysipelas. Judiciously managed, compression is a powerful remedy against simple inflammation, but I do not consider it to be of much avail in this form of the disease. It has been said that I was the first to employ it against erysipelas; but this is to be attributed to a misconception of what I said on the subject. I certainly did state in 1826, that compression is an heroic remedy in the treatment of erysipelas, but I distinctly said, at the same time, that I was speaking of the phlegmonous or sub-cutaneous form of inflammation only: I had, indeed, at that time, some idea that it might, perhaps, be efficacious in the simple form of the disease, but experience has shown me that this is not in reality the case; I have frequently tried it, but the erysipelas has nearly always escaped from underneath the bandage."—Medical Gazette, vol. xxvi. August 21, 1840.

[143] Heister, p. 212.

[144] Archives Générales, vol. xv.

[145] Maladies de la Peau.

[146] Edinburgh Med.-Chirg. Trans., vol. i. p. 543.

the only case in which Mr. Lawrence tried the practice, (case 36,) also of the arm, the same fatal result ensued.[147] Dr. Tweedie is most decidedly opposed to bandaging an erysipelatous limb, and says, he has seen more than one case of erysipelas, in which gangrene was induced within twelve hours after a bandage was applied.[148] With such evidence before us, it obviously becomes our duty to be very careful in what cases bandages are used, and to watch their effects with scrupulous care. If this be exercised there are instances where bandages may be advantageously applied, notwithstanding what is said above as to their ill effects; for I apprehend that neither the case of Dr. Duncan, nor that of Mr. Lawrence, would be regarded as of the most suitable description for the use of bandages. It is well known that in all cases of extensive scalds and burns, benefit is derived from supporting the parts by moderate compression; and as it appears highly probable in erysipelatous inflammation, the disorder spreads from the want of the adhesive process, moderate and regularly applied pressure seems likely to occasion the effusion of plastic lymph, rather than of serum alone, by giving that support which the parts so circumstanced require: a view of the case which, as Mr. James remarks, is strengthened by the fact that those parts of the body, upon which a patient rests, are less frequently invaded with erysipelas than others.

When used the bandage should be equally applied, so as to make pressure upon every part of the limb, commencing at its distal extremity; and the bandage should be kept wet with cold water, or saturnine lotion. Even where beneficial, the effects for the first two or three hours, are to cause a slight increase in the pain; but after this time it subsides in a great degree, and all the unpleasant symptoms quickly disappear. If the pain be long continued, or be violent, the bandage should, without further delay be removed, (for it is a

[147] Med.-Chirg. Trans., vol. xiv. p. 195.

[148] Cyclopædia of Practical Medicine, vol. ii. p. 114.

certain sign that the pressure is injurious,) and if persisted in, mortification of the limb may be the result, as actually occurred in Dr. Duncan and Mr. Lawrence's cases.

At a later period of the disease, when there is extensive suppuration, every one must admit the utility, nay, the absolute necessity, of bandages, in order to support and keep in contact the parts which have been separated and weakened, as well as to prevent the burrowing of matter, which otherwise is exceedingly liable to become very troublesome, and indefinitely to prolong the convalescence.

Such are the principal remedies, both general and local, which have been recommended in the treatment of erysipelas; others there doubtless are, because all the usual means ordinarily practised in febrile complaints are often properly applied. It is only those which have been brought prominently forwards, as peculiarly adapted for the relief of erysipelas, that could be separately noticed. Which of them should be selected, how administered, and how long continued, must entirely depend upon the circumstances of the individual case. No universal and absolute rule can be laid down as applicable for the treatment of all cases. As already has been remarked, in a disease which, like erysipelas, varies from a slight ailment to one of the most serious disorders which can effect mankind, which attacks the young and the old, the robust and the debilitated; supervenes upon other complaints, or appears as a primary affection;[149] sometimes being confined to the surface

[149] When speaking of the nature of erysipelas, I alluded to the close connection between fevers of a typhoid character and external erysipelas, and the frequent coëtaneous existence of the two. All who have seen much of fever cannot possibly have failed to notice in how marked a degree the alarming symptoms in typhus, which commonly arise from some local affection, often subside on the appearance of the cutaneous inflammation, and that the internal organs, especially the brain, are surprisingly relieved,—as though metastasis had actually occurred. If this be the case, and I see no other way of explaining the fact in a satisfactory manner, it affords a strong confirmation of the opinions

of the body, at others attacking the most vital organs; the treatment which may save the life of one patient, would certainly, if followed under different circumstances, destroy another. In no disease is the tact and discrimination of the medical man more called into action, than in the management of erysipelatous affections.

No more than very general directions can be laid down as always applicable. Our first attempt should invariably be directed to restore all the secretions to their natural condition, in doing which we should never forget, that erysipelas is a disease in which there is "increased disposition to act without the power to act with;" and that, consequently, in combating this increased disposition to act, we should be careful not to lessen the power, by the undue abstraction of blood. In circumscribed phlegmonous inflammation the power is equal to, if not greater, than the excitement; accordingly, our best means of subduing the latter is to lessen the former by an active antiphlogistic regimen. On the contrary, in spreading erysipelatous inflammation, the excitement is often much greater than the power. And it should constantly be borne in mind, that if this be still further depressed, instead of the excitement being lessened, it very probably may be considerably increased; in many cases, it is true, the deficiency in power may arise from some temporary cause, which being removed, more active measures will become necessary than previously were either proper or safe.

I have ventured to express upon the subject, namely, that the local affections are of a similar character, as the constitutional symptoms are, in many respects, nearly alike in the two complaints.

I know one physician, now an old man, who for a great number of years has been connected with a fever hospital, where a large number of patients are admitted, on hearing that erysipelas has appeared upon any of those who are seriously affected, constantly says, "Oh! then if he has strength to bear it, he will do now:" an expectation which can only have been formed by the repeated observation of the relief I have just spoken of; for certainly this gentleman has no theoretical notions as to the existence of the close resemblance, and similarity in nature between the two affections, which I have endeavoured to show.

TREATMENT OF THE DIFFERENT VARIETIES OF ERYSIPELAS.

CELLULO-CUTANEOUS VARIETY.

For the purpose of speaking of the treatment of erysipelas, the course of an ordinary uncomplicated case of the cellulo-cutaneous variety may be divided into three stages. The first stage extends from the commencement of the disorder, to the period when it is about to terminate in resolution or suppuration, and occupies from five to seven days. The second stage extends from the first indications of suppuration, to the time of the pus being discharged. The third occupies the period during which the sloughs are in the act of being separated and discharged, and the wounds are healing. In this latter period we have rather the effects of erysipelas to contend with than the disease itself.

Our efforts should be directed towards limiting the disease to its first stage, by inducing resolution; which, if the patient be seen early, may, in the majority of cases, be accomplished.

At the commencement, unless the patient be old, or much debilitated, or there be previous illness, or some peculiar circumstances, as organic visceral disease, which forbid it, we should immediately administer an emetic, and follow it by a brisk purgative of calomel and jalap, or some of the neutral salts with senna, so as effectually to clear out the primæ viæ, and dislodge their irritating contents. This is the more especially necessary when erysipelas has followed the ingestion of any irritating or improper article of food or drink. In some cases, where there is not much nausea or disorder of the stomach, and the tongue is not loaded with

fur, the emetic may be omitted; and if there be irritation of the bowels with diarrhœa, the drastic purgatives should be avoided. But even in these cases, a dose of castor oil, or of rhubarb and magnesia, should generally be given; for often this very state of the bowels depends upon the presence of some acrid matters. It is very seldom, if ever, that tonics or stimulants are requisite during the first stage of this variety; commonly salines, in a mixture with digitalis and colchicum, and a pill containing a grain of calomel, the fourth or a sixth of a grain of tartarised antimony, and the same quantity of opium, may be given every four, six, or eight hours; or, if there is objection to opium, the extract of poppy, lettuce, or hyosciamus may be used instead; or, what answers still better, twenty or thirty drops of the compound tincture of camphor, may be added to each dose of the mixture. Small and repeated doses of the extract of aconite, or of belladonna, may sometimes, where there is much arterial excitement, be given with advantage, in place of the opiates.

In those cases where the patient is young and plethoric, the inflammation acute, the pain pulsating, the colour bright and florid, the pulse being full or hard, and not excessively quick, venesection may be advantageously practised. The bowels should be kept open two or three times in the twenty-four hours, and the calomel continued until either the evacuations lose their dark offensive character, or the gums are slightly affected, when it should be discontinued. It not unfrequently happens that the gums are affected and the evacuations changed at the same time. The inflamed part should be kept constantly wet with the saturnine lotion; and if the face or scalp is affected, the hair should be removed. Puncturing should be freely practised. The nitrate of silver may be applied, should the affection not extend over a large space, and the disease continue to spread after the bowels have been freely opened; but until the bowels have been freely evacuated, or if the inflamed surface be very extensive,

I do not think this application, which so suddenly represses the cutaneous inflammation, is altogether unattended with danger, particularly during the first two or three days. Towards the fifth day, if the vesications be numerous, and the discharge copious and acrid, flour or some other absorbent powder may be substituted for the lotion, which, however, will not often be requisite. In those cases where the patient is old, or weak, and depressed from the commencement, we should be more sparing in the use of purgatives, and the digitalis may be omitted; a stimulating lotion may conveniently be used instead of the simple evaporating; and the part, if it admit of it, may be moderately compressed by a bandage. It will seldom be necessary to have recourse to blisters at this period, but if the brain should be much involved, a few leeches may be applied behind the ears, or upon the temples, and a blister to the nape of the neck: the most effectual way, however, of removing the internal affection is, to diminish the external.

Second stage.—If resolution be about to take place, all the symptoms will become milder; the pain, heat, redness, and swelling subside; the evacuations become more natural; and the tongue moist and cleaner; but the most important indication is the pulse. Although the other symptoms become mitigated, if the pulse keep up in frequency, we should be very suspicious, lest the improvement be only in appearance, and we be lulled into a false security; for, as before stated, it is by no means uncommon to find a cessation in the activity of the disease at the period when suppuration is about to occur.

In erysipelas, suppuration is seldom indicated by any pointing or by rigors, as it is in circumscribed phlegmon; but the part feels softer and boggy. When this is the case, incisions, as recommended by Hutchinson, or perhaps rather longer, from two to four inches in extent, should at once, without hesitation, be made; but if punctures have

been freely practised in the early stage, and evaporating lotions carefully applied, it is surprising how seldom, especially in the head and face, matter will form or incisions become requisite.

Our topical applications should now be warmer and more stimulating. Pressure or blisters may be applied, and the iodine or nitrate of silver, if not previously used, and suppuration has not actually taken place, may be put on. The salines must now often give way to, or be combined with, decoction of cinchona, serpentaria, or ammonia. An opiate at bed-time is often most beneficial. It is at this period that the patient is most apt to sink from internal affections; the viscera and their membranes are more liable to be involved than in the earlier stage. In bad cases, at this period, it sometimes becomes necessary to administer the most powerful stimulants, as porter, wine, spirits, turpentine, camphor, and ammonia, in considerable doses.

Third stage.—When suppuration is fairly established, great care is still requisite in diet, as well as in medicine and general conduct, for many who have passed through the more active stages of the complaint, fall victims to its effects.

The diet should be light and nutritious; at first, farinaceous foods, with broths and jellies, agree better than more solid or rich food; but afterwards, particularly if the suppuration be very extensive, animal food, with wine, porter, or ale should be allowed. Great care must be taken lest the stomach be overloaded; an error in diet, when all appears to be going on well, not unfrequently, by inducing violent vomiting or diarrhœa, suddenly and inevitably destroys the patient: while exposure to the cold will often induce suppuration in some of the cavities or viscera. The secretions must be carefully watched and regulated; a mild mercurial, as the hydr. c. creta., will often be useful; and a gentle aperient will commonly answer better than constantly keeping the bowels in a relaxed condition. Malt liquors, wine, or spirits

must be allowed, according to the previous habits of the patient. The sulphate of quinine, iron, or zinc, form the best tonics; they may be combined with either acids or alkalies; if the tongue be clean, the secretions good, the pulse weak and languid, and there are perspirations, the former are most suitable; but if the stomach be not in good order, if there be acidity or diarrhœa, with a scanty secretion of high coloured or turbid urine, then alkalines are more advantageous. A change of air is often of the greatest use.

The utmost care is necessary in dressing the limb: wherever there is any indication of matter, an opening should be immediately made in the most depending part. It is far better to make an additional opening, than by pressure and rough handling to force the matter out at a distant opening. The dressing should be performed with the utmost caution, and as gently as possible, lest we farther destroy the small vessels and nerves which may still remain between the skin and the parts underneath, and thus increase the loss of integument. The importance of this direction cannot be too highly estimated. The diffusion of the matter, and the sloughing of the cellular membrane, have so undermined the skin and separated it from the parts under it, from whence its blood vessels and nerves are derived, that the skin is much oftener destroyed, owing to its supply of blood and nervous energy being cut off, than from the violence of the disease in the cutis itself. However, after even very extensive suppurations and sloughing of the cellular tissue, there will still be found small thread-like portions passing to the cutis: these are the small blood vessels and nerves which are not so readily destroyed by inflammation as the cellular tissue is, but which, now that they are isolated and unsupported, as well as softened by the inflammation, the least disturbance is sufficient to break; when, as a necessary effect, the destruction of the skin, with its long train of disastrous consequences, follows.

The position of the limb should be that which is easiest to the patient, and at the same time affords a free outlet for the matter; this is generally the horizontal, or one which is a little inclined. An absorbent or stimulating ointment is better than warm fomentations and poultices. Well regulated pressure is of the greatest importance; a bandage and compresses should be carefully applied, so as to support and keep in contact the parts, prevent the lodgment or burrowing of matter, and assist the circulation. The sloughs of dead cellular membrane, which often are very large, may be removed when they become detached, but no violence should be used in separating them: above all, an opening must be made in the most depending part, otherwise the matter will burrow in spite of us, often to a prodigious distance.

If the integuments be extensively destroyed, weak fungus granulations will spring up; these must be repressed by astringent washes, as the chloride of soda, or weak nitric acid; or, if they prove obstinate, the nitrate of silver must be applied. Lint, moistened with the tincture of benzoies, is often useful, which, besides facilitating the cicatrization, tends to render the new skin stronger and less liable to be destroyed by ulceration. If the granulations discharge pus too abundantly, covering them with prepared chalk or impure carbonate of zinc, under compresses and straps of adhesive plaster, will be of great service, and prevent the necessity of painful disturbance and irritation, by so frequent dressing;—a point of no small importance.

For long the cicatrix remains weak and irritable; nor is it uncommon for it, from very slight causes, as a little too much exertion, a blow, or some less palpable cause, rapidly to disappear; a small vesication is seen, and in a few hours an extensive ulcer occupies the place of the cicatrix; this recurs sometimes more than once or twice, but each time to a less extent than before, and in the end, the new skin becomes more firm and stronger. Under the best treatment, when

there has been extensive sloughing, with long continued suppuration, it is by no means uncommon for the functions of the part to be considerably impaired, or altogether lost. For, if the mischief has passed beneath the fascia, the muscles may become agglutinated together; or the bones and neighbouring joints involved in the destruction. Even though the fascia be not destroyed, the unnatural adhesions and contractions between the skin and it impede that free play of the parts which the elasticity of the cellular web so admirably permits in the healthy condition.

Such is an outline of the treatment in ordinary cases of cellulo-cutaneous erysipelas; if this be complicated with any affection of the viscera, it must still be treated upon the same plan, only attention must be directed to the organ affected, and the treatment be proportionately prompt to the violence of the attack, and the importance of the part. Of those who die from erysipelas, the great proportion are cut off between the sixth and twelfth day; and in almost all, the immediate cause of death, is either from the membranes of the brain, or the thoracic or abdominal organs, being the seat of diffuse inflammation or of purulent infiltrations. We should, therefore, carefully watch for the earliest symptoms which denote complications of these viscera, and endeavour to confine the local affection, as far as may be, to the surface, if it has not left it; or, if metastasis has taken place, to recall the morbid action to the skin. In most cases, counter-irritants, as blisters or turpentine, should be freely applied near to the region affected, and general or local bleeding, by leeches or cupping, may be practised; more especially, in case the lungs are involved, and provided the symptoms are sufficiently sthenic to warrant the abstraction of blood. Our treatment must be as active as the severity of the symptoms demands, always bearing in mind that erysipelatous inflammation does not bear depletion to the same extent as phlegmonous. Purgatives, with colchicum and digitalis, should be freely given,

unless the alimentary mucous membrane be affected, when demulcents, with small doses of ipecacuanha, or Dover's powder, and hydr. c. creta, the white of eggs, gum, or starch, ought to be administered. If the fauces and pharynx be the seat of the disease, and there be much œdema of the mucous membrane, and the uvula be elongated, punctures should be made, or the apex of the uvula removed; and the tincture of iodine, or nitrate of silver, freely applied to the inflamed surface, with a blister to the nape of the neck, and turpentine or sinapisms to the lower part of the throat and chest. In case suffocation suddenly occur, (by no means an uncommon occurrence, and of which I have seen three examples,) tracheotomy should be instantly resorted to, for there are no cases of suffocation from disease which present a fairer prospect of success by this means. It should be borne in mind, that it is from the mechanical effects of the effusion, and not from the disease having rendered the parts unable to perform their functions, that the patient dies: and if we can prolong life until this effusion, which is only temporary, be removed, there is a probable expectation of eventual recovery.

CUTANEOUS VARIETY.

In the cutaneous variety of erysipelas, generally an active purgative, followed by salines and diaphoretics, with cold evaporating lotions to the part, are all that is required. If there be much heat of the inflamed part, punctures should not be neglected, nor should the tincture of iodine, or nitrate of silver, particularly the former, be omitted, for it is in such cases that these applications are especially applicable, and with which the whole surface, if not very extensive, may be painted.

When the local symptoms are erratic, much attention to the general ailment is requisite, as this forms by far the most important consideration. The local mischief, for the most

part, is unimportant; but if the inflammation becomes more stationary, the constitutional symptoms are relieved; it should, therefore, be one of our objects to fix the affection to a certain part, and for this purpose a blister may be applied upon it. While, on the one hand, we give mercurials, colchicum, and sedatives, to improve the secretions and tranquillise the system, it is often necessary, even at an early period of the disease, to administer some light tonic, or stimulant, with wine or spirits. I have rarely seen erysipelas with much disposition to be erratic where there was much constitutional power, nor without it being accompanied by great derangement in the secretions; often the prostration is considerable. Altogether, it indicates a bad state of things, and frequently terminates unfavourably, the patient sinking as from typhus.

In those chronic cases of erysipelas which are sometimes met with, and more frequently found infesting the face than other parts of the body, and are more common in females than in males, it is often difficult to effect a cure. The pain, heat, and redness are not invariably alike, but they never altogether disappear, and the paroxysms are apt to recur at very short intervals, upon the least irregularity in diet, exposure to cold or heat, &c.: sometimes at each return of the menstrual period; and often without any manifest cause. It will often be found that the functions of the stomach and the chylopoietic viscera are disordered, and the secretions generally unhealthy. It is, of course, necessary to rectify these conditions; for which purpose a change of air, with a course of saline and chalybeate waters, are often beneficial; or mild tonics, as the preparations of zinc and iron, with carbonate of soda, or hydriodate of potass, may be given: to these should be added mild mercurials, and the bowels should be sufficiently acted upon by doses of the neutral salts. Counter-irritation is, however, often absolutely necessary. For this purpose small blisters may, from time to

time, be applied at a little distance from the affected part; but I have known cases where these have failed, which have afterwards yielded to the more permanent drain of an issue placed upon the arm.

CELLULAR VARIETY.

In the cellular variety of erysipelas,—diffuse inflammation of the cellular membrane, we must, as in the preceding varieties, be guided by the symptoms in each case. When the disease arises from a poison, or rather when a poison, which is likely to give rise to the disease, is inserted into a wound, we should obviously endeavour to prevent the absorption of it, whatever it may be; or, in case the disease arises from simple irritation, we ought to limit, as far as may be, its effects to the part injured. The removal of the part is evidently the readiest way to accomplish these objects; but where this cannot be done, or may not be thought to be necessary, we should either destroy the part, or change its action. If the latter be our object, or the injury be superficial and extensive, the nitrate of silver will answer well; but if, on the contrary, we wish to destroy the part, as in the majority of poisoned wounds is necessary, then the nitrate is a very inefficient application, as it cannot accomplish this. The potassa fusa, or the mineral acids, are the best adapted; of these, the nitric acid is commonly recommended; in many cases it may be sufficient, but there is none which reaches to the same depth, and which is so effectual in completely destroying the parts, as strong sulphuric acid.[150] So important

[150] I am more impressed with the destructive powers of sulphuric acid, than even a consideration of its action upon dead animal and vegetable matter have shown it to possess, by having lately witnessed two cases in which it was accidentally applied to the body. In the one, a woman had given to her child a tea-spoonful of oil of vitriol, in mistake for syrup of poppies, (it was nearly dark, and she took a bottle from a cupboard which stood where she had placed the syrup,) a portion was spilled upon the chest and throat; the sloughs were

is it to prevent any entrance into the system of a particle of the poison, that where there is a suspicion of such existing, and a puncture or scratch, however small it may be, is made, (as in examining a body recently dead from puerperal fever, or diffuse inflammation of any tissue where there is sero-purulent effusion into any of the cavities,) one or other of these applications ought to be instantly made, and the part covered with gold-beater's skin, or some adhesive unirritating envelope, to protect it from the air. This may to some who do not allow that the atmospheric air has any irritating properties, appear to be of no importance; but I believe I have seen many cases where the neglect or the observance of it, has made all the difference, between the most serious consequences and no ill effects whatever. I do not suppose the protection of the wound has any effect over the absorption of the poison; but I believe it to have very considerable influence in preventing irritation and its consequences.

There can be no question as to the utility of removing the atmospheric pressure in the case of a poisoned wound, either by sucking with the mouth, or by the cupping glasses. The application of a tight ligature above the part wounded, and also causing the blood to flow through the wound, which should be enlarged, ought never to be omitted; by this, two objects are gained—the poison is washed out, and absorption goes on more slowly. In making the incision into the wounded part, it is better to use a sharp-pointed history, and, by plunging it under the wound, to cut outwards, than to make an incision from without inwards, as by this

very deep; the dermis was completely destroyed to the cellular membrane, and even some of this, although in consequence of the child's struggles but a small portion of the acid had touched the skin, and this had been immediately removed. In the other case, a man was moving a carboy of sulphuric acid, when it broke, and a portion was splashed upon the leg and arm; a large vessel of neat's foot oil happened to stand near, into which the leg and arm were instantly plunged; but the whole thickness of the dermis was extensively destroyed.

there is danger of carrying the poison still deeper, and consequently lessening the probability of its being washed out by the blood. The earlier this is done the better, but it should not be neglected after some hours; it may do good, and can do no harm. This is especially the case in a wound received in a post mortem examination, (should the application of some chemical agent not be thought sufficient,) where there is reason to think the poison is not so readily absorbed, or at least that it does not act until some quantity is taken up, for its effects are not manifested for several hours: even in bites from venomous serpents, where the poison is more rapidly absorbed, or, what is more probable, is more virulent, and consequently acts more instantaneously, it should not be neglected; it may still prevent some entering the system, or cause it to enter more slowly, and thus lessen its ill effects.

No more than very general rules can be laid down for the treatment. In some cases the disease is limited to the part injured, or extends only to the neighbouring absorbent glands, where there is circumscribed abscess, with high sympathetic fever; here active antiphlogistic treatment, both local and general, are requisite. But where the mischief is more extensive, either from the potency of the cause, as the bite of the rattle-snake, or the previous condition of the person, so alarmingly and instantaneously are the whole powers depressed and overwhelmed, that the most powerful stimulants and narcotics are necessary. These it is often requisite to repeat in very large quantities, and our whole efforts are demanded to prevent the patient sinking, which he frequently does, before the local symptoms have time to develope themselves. At the same time calomel should be given in sufficiently large doses, to speedily affect the system, so that, if the patient does not sink under the first depression, he may be, so to speak, in the most favourable position to brave the alarming morbid condition which certainly follows;

as there is strong reason to conclude that, in this pathological state of the system, mercury affords more effectual relief than any other remedy which we possess.

In those cases which we most commonly meet with, and which result from a wound received in a post mortem examination, venesection, the ligature to a vein, or some mechanical injury, as a contused wound, &c., and which, for the most part, hold an immediate place between the two extremes, our treatment must vary according as the symptoms approach the one or the other. If the disease does not extend very rapidly, and spreads regularly from the wound, or if there be much swelling, heat, pain, and redness, then the nitrate of silver may be freely applied, and the part be moderately supported and compressed by a bandage, kept wet with the saturnine lotion, to which a little spirit may be added. If, on the contrary, the mischief should extend very rapidly, and distant parts be involved, the inflammation not proceeding regularly from the wound towards the trunk, and if there be not much heat or swelling, then warm narcotic fomentations or poultices, and strong stimulants to the part, are required.

If it should be thought desirable, and most commonly it is so, to abstract blood locally, incisions should be had recourse to, and that at an early period. They should be made boldly, down to the fascia, or through this, if there be reason to think the muscles, or inter-muscular cellular membrane are affected. Leeches and punctures are not so well adapted to this form of erysipelas, as they are to the more superficial. The blood should, if possible, be taken from the vessels actually concerned in the local disorder, which can only be accomplished by incisions made into the cellular membrane; punctures abstract the blood from the skin, which is not in this variety the principal seat of the disease; or if from any cause, which must be rare, there is objection to the longer incisions, the cupping scarificator, with the lancets set so as to cut deeply into the cellular tissue,

may be used. In all cases, if the incisions have not been made at first, they ought to be immediately there is the least indication of suppuration; hesitation and delay may prove fatal to the patient.

The actual cautery appears to be well adapted to these cases, and more likely to localise the affection, and prevent the spreading of it to the trunk, than any milder remedy, though I am not aware of its ever having been applied in England, where there is an unconquerable prejudice against its employment. Blisters are certainly serviceable, both in the earlier and later periods of the disease, and, as they are not objected to, should be used.

ERYSIPELAS IN INFANTS.

When erysipelas appears in infants, the treatment of it admits of less dispute than it does in adults. It will be necessary to evacuate the bowels by a mild, but effectual, mercurial purgative; as three or four grains of the hydrargyrum c. creta, with the same quantity of calcined magnesia, or a little castor oil, for a young infant; or three or four grains of calomel, with the same of jalap, for an older child. Emetics are not so important in these young creatures, as in adults.

Whether bark and stimulants should be immediately resorted to, as Drs. Bromfield, Gartshore, and Underwood, strenuously contend for, or not, must be determined by the circumstances of each case; but, in most instances, it will be necessary to resort to this practice at an earlier period than it is in older persons.

In all cases, especial care should be taken to improve the condition of the secretions, which usually are much disordered; upon this much depends; if they be neglected, bark and other tonics may be given without any effect, or only with that of adding to the febrile excitement; attended to,

they are often unnecessary, or if necessary, are advantageously borne by the stomach, and lessen the excitement.

Dr. Copeland speaks very highly of the chlorate of potass in decoction of bark, which may be administered. Small and repeated doses of the ferrum tartarizatum, with a few drops of syrup of poppies, is often advantageous; or the stronger preparations of bark may be had recourse to. In combination with the latter, the mineral acids are very serviceable to children, and of them, perhaps, the muriatic is the best. Where there is a disposition to sloughing, as not unfrequently happens when the genitals are the seat of the attack, the following form, or something like it, answers exceedingly well; quin. sulph. gr. iij., syr. papav. alb. ʒii., acid. muriat. ɱij., decoct. cinchonæ. ℥iss.; from one dram to four, to be given every two or three hours, according to the age of the child.

For the purpose of correcting the secretions, the hydr. c. creta, with carbonate of soda, may be given night and morning; to which a little magnesia or rhubarb may be added, in case the bowels are confined; or if they are relaxed, a few grains of the pulv. kino comp., or pulv. cinnam. comp., are proper.

If there be reason to think the disorder has arisen from any local causes, they should immediately be removed; or, if possible, the child should be placed in a purer atmosphere. The greatest cleanliness ought scrupulously to be observed. It is of the utmost importance to attend to the diet; if it be a young infant it should be restricted to its natural food,—the breast-milk of a healthy nurse; or, if an older child to good nutritious unirritating diet, as arrow-root, sago, or other farinaceous articles; and, if requisite, beef tea, strong broths, or jellies, may be given, but the stomach should not be overloaded with much solid food.

Cold lotions, which are simply evaporating, do not in general answer with infants; warm stimulating washes, or narcotic fomentations and poultices, answer much better. As

the part is usually much congested, a few punctures may be made in it with benefit, and without any fear of producing debility. Tincture of iodine, sufficiently diluted, would, I conceive, be a most useful application, but I have had no opportunity of trying it in infants; in young children, where, however, I have applied it, the effect has been satisfactory. Dewees is a warm advocate for the application of strong mercurial ointment, both in adults and infants; he says, it "almost immediately arrests the progress of the disease, and therefore, when practicable, it should be had recourse to early."[151] Blisters are favourably spoken of by many, and may be tried: much care is, however, required in applying them. Young infants do not bear blistering well, convulsions are very apt to be produced, and the skin is very liable to become gangrenous. Turpentine is a better application, and usually powerful enough to produce vesication.

A solution of oxymuriate of mercury has been recommended, and certainly appears, not only in the erysipelas of infants, but in that of adults also, to be a more desirable form of applying mercurials, than in the shape of ointment; we have the mercurial effects, with the stimulating properties of the oxymuriate; or, if preferred, it may be used as an evaporating lotion.

When suppuration has taken place, and the skin is gangrenous, a weak solution of chloride of soda, or of nitric acid, is useful; or, if the gangrene be more profound and extensive, powdered bark, port wine, yeast, peruvian balsam, tincture of benzoies, or resinous ointments, may be properly applied, with poultices and fomentations.

With regard to those complaints which are commonly described as different diseases, but which I consider as being of the same nature as that disorder of the external surface

[151] A Treatise on the Medical and Physical Treatment of Children, by W. P. Dewees, M.D., 1826, p. 313.

which forms the subject of this work, and which is, by common consent, called erysipelas, and the reason for so doing I have before stated at some length, it is not my intention to enter upon the treatment proper to be pursued for their cure. Most of them have received a considerable share of attention, but not more than their importance deserves; and there are so many circumstances which it is necessary to take cognisance of before the details of their treatment could be discussed, because in regulating the management of any cases of illness, it is important to take into consideration, not merely the general nature and relations of the disorder, but also the structure and functions of the part attacked, as well as the peculiar circumstances of the individual suffering, (as, for instance, a puerperal woman,) that it would lead us very far from what I have prescribed to myself as the limits of the present treatise. If the arguments which are advanced in the preceding pages are valid, and the facts upon which they are based indisputable, as I believe them to be, the general rules for the management of these forms are sufficiently palpable, but the particular application of the rules must be sought for in works more especially devoted to the subjects.

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