

On the nature, causes, statistics, and treatment of erysipelas / by Peter Hinckes Bird.

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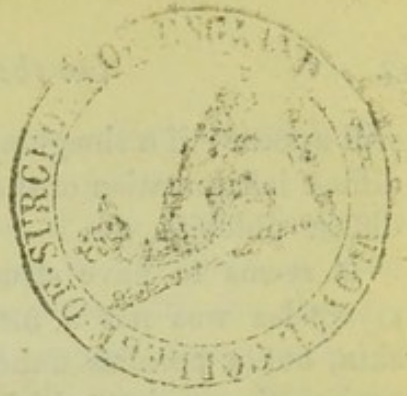
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ON THE
NATURE, CAUSES, STATISTICS,
AND
Treatment of Erysipelas.

BY PETER HINCKES BIRD, F.R.C.S.,
&c., &c.,

AUTHOR OF THE JACKSONIAN PRIZE ESSAY ON ERYSIPELAS.

Reprint

It would be difficult to find in the whole range of nosology a disease which requires more accuracy of discrimination in the adoption of the treatment necessary to arrest the destructive ravages which follow the unchecked progress of its severer forms than the one which forms the subject of this paper; and yet there is perhaps no subject of practical importance upon which there has existed such contrariety of opinion as to its nature and treatment, and especially as to the precise signification and extent of the word.

The design of this paper is, to establish that the distinctive characteristic of erysipelas and the diseases allied to it, is their origin in a morbid poison in immediate connexion with an unhealthy condition of the system. A subtle poisonous matter enters the blood, constituting, in fact, a true blood-poison disease; and the almost universal rule, that the presence of a poison in the blood is productive of a direct and special operation on the skin follows, in this particular instance causing erysipelas.

But what I particularly wish to insist upon is, that the characteristics of this diffuse inflammation may be manifested in other tissues than the skin or subcutaneous cellular membrane, and that there is no conclusive reason why this species of inflammation should be confined to the external surface of the body; indeed, many acute and experienced observers have recorded instances without number, of internal parts presenting every specific mark of that diffuse inflammation which, when confined to the skin, is termed erysipelas. Some accidental cause may determine in which tissue it shall appear. In a person predisposed to this form of inflammation, it may become developed wherever the immediate excitement may be thrown. Thus, if it be a wound, erysipelas

will appear ; if a sloughing bubo, strangulated hernia, or recent delivery, diffuse inflammation of the peritonæum will result ; if a punctured vein, diffuse phlebitis, &c.

It seems to have struck the sagacious mind of John Hunter that erysipelas was not a mere example of ordinary inflammation of the skin, but a peculiar unhealthy form of inflammation which may attack various tissues, but which, wherever situated, exhibits certain characters that distinguish it from ordinary healthy inflammation. "In some constitutions every inflammation, wherever it exists, will probably be of this kind." "Whatever the inflammation may be, it is certainly attended with nearly the same kind of constitutional affection. The fever in both appears to be the same, viz., accompanied with debility, languor, &c."*

The blood has been described and submitted to repeated investigations by various authors.† All agree that it contains an excess of fibrine ; but it is well known that excess of this substance in the blood is by no means a measure of the amount of power in the system, nor is it necessarily indicative of inflammation. All that can be positively stated on this subject is, that the blood has undergone some change rendering it incapable of elaborating healthy pus.

Dr. J. C. Williams‡ observes that the adynamic or typhoid symptoms present in erysipelas show the presence of something more than a form of inflammation, and that something must be considered a poison. It is possible that this poison sometimes originates in infection ; and this effect is much promoted by unknown epidemic conditions of the atmosphere. The most probable hypothesis we can form of this matter is, that under certain circumstances the products of inflammation become poisonous, and capable of acting (as many animal poisons do) as local irritants and general sedatives or depriments ; that they then modify the character of the inflammation, depress the whole vital powers, and that their effects, and the general and local reaction against them, lead to the various degrees and forms which we find that erysipelatous inflammation presents. The same morbid matter being transferred by any of the three modes of infection to other persons, may induce erysipelas in previously existing inflammations, or if strong enough may develop it anew in the body. The fact that patients sicken with fever, rigors, vomiting, headache, quick pulse, delirium, &c., before the erysipelatous inflammation appears, is a sufficient proof that the poison acts on the constitution as well as on a part ; and the fact that weakly persons, and those affected with structural disease (espe-

* Hunter on the *Blood*. 1794 ; p. 270.

† Burserius. *Inst. Med. Pract.* ; vol. ii, p. 22. Sennertus. *De Febr.* ; lib. ii, c. 16. Andral. *Rindskopf*. Heller. *Simon's Animal Chemistry* ; vol. ii, p. 270. Goodman. *Transactions of British Association*.

‡ *Principles of Medicine* ; p. 313.

cially of the kidney) chiefly suffer from the worst effects of erysipelas, shows the essentially depressing operation of the poison.

Dr. Williams further states, that in several of the worst forms he has found pus globules in considerable numbers in the blood of parts remote from the affected textures: this corresponds with the observations of Mr. Gulliver, who adds, "this might suggest that pus is the poisonous matter."* But although it is highly probable that these pus globules do partake of the septic tendency belonging to foul kinds of matter, yet it is likely that the noxious matter occurs and spreads in a more subtle form, in solution, or even in vapour, as shown by the pernicious properties of the liquor puris and its fœtid odour.

The only instances in which I have with certainty detected pus globules in the blood, were cases of cellulo-cutaneous erysipelas of the extremities. In all the cases of erysipelas of the face in which I have examined blood taken from the diseased part and some distance from it, I could never feel assured of the presence of pus globules. But it does not follow when, on microscopical examination of the blood, pus globules are not detected, that they do not exist, as the quantity of blood examined is so remarkably small in comparison to the amount in circulation.

As I have never yet bled a patient with this disease, I have had no opportunity of examining a large quantity of blood taken from patients early in the attack. I think it highly probable that in many cases of erysipelas which continue beyond the seventh day, in which the symptoms are asthenic and indicative of pyæmia, pus globules exist in the blood as an effect of the erysipelas; the blood globules becoming converted into pus, a change which may take place in the capillaries as well as out of them; what the primary change is, which the blood undergoes on the receipt of the miasm of erysipelas, we are unable precisely to determine.

Erysipelas is, then, a mode of inflammatory action requiring a particular constitutional state for its development, and called into operation by various and opposite causes. In this view, a person in that condition predisposed to erysipelas would have it excited either by cold, by errors of diet, by injuries, or by contact with another individual labouring under it, by fomites, by infection, perhaps by other less obvious excitants. Of the former we can furnish no direct proof; in favour of the latter the testimony is strong and conclusive: and indeed this doctrine appears to be most consistent with the facts, and most easily reconciled, in the present condition of our knowledge, with the evidence and the phænomena.

It has been proposed to distinguish erysipelas and its allied diseases by the term *ochletic*† (from ὄχλος, a crowd; the crowding together of

* London and Edinburgh Philosophical Magazine. 1838. † Dr. Gregory: *Lancet*; July, 1848.

the sick being a prolific source of the ochletic miasmata), but the ochletic miasm merely renders the patient subjected to it more liable to be seized with erysipelas, puerperal fever, &c.; it does not act upon a wound or injury as the exciting cause, but only determines the accession of the disease.

The blood, then, being poisoned, the operation of this erysipelatous poison is not confined to the skin, but may attack all the tissues; it is the same morbid cause in all, modified in its action by different structures and by the individual peculiarities of each case.

In proof of the correctness of this view, I will cite a case of a patient who died on the tenth day after an attack of erysipelas of the face and neck.

The superficial cellular tissue of the head and neck, indurated and infiltrated by sero-purulent fluid. Near the ear and around the parotid gland the cellular tissue completely disorganised, soft and pulpy; this pulpiness extends below the ear into the upper part of the sterno-mastoid muscle, implicates the platysma, and is especially evident in the masseter; purulent matter seems to have been deposited in and amongst the fasciculi, so as greatly to increase their bulk; in many places they are semi-fluid. The coats of the external jugular vein thickened, white, and opaque; tracing it upwards these changes become more manifest, the small branches are easily seen, their thickened and whitened coats forming a strong contrast to the semi-fluid mass situated in front of the ear. The parotid gland quite disorganised and pulpy from purulent infiltration. The periosteum of half the horizontal ramus of the lower jaw, of the ascending ramus, of its condyle, of its coronoid process (except a very small portion of the apex, where some tendinous fibres of the temporal muscle still remain attached), of the zygoma, of the glenoid cavity and of the meatus auditorius externus, separated by a thin layer of unhealthy purulent matter; here and there a small vessel entering the bone only being left. The pterygoid muscles, the posterior belly of the digastricus, and the styloid muscles completely disorganised; the pulpiness extending deeply towards the base of the tongue and pharynx. A lymphatic gland situated immediately behind the clavicle, upon the carotid sheath, presents in its interior an abscess implicating nearly the whole of its structure; the continuity of its capsule is unimpaired. A bronchial gland suppurating in its interior, at the root of the right lung.

ALLIANCES OF ERYSIPELAS.

Under this head I would include instances of diffuse inflammation of the various structures of the body originating in, or in connexion with, this disease. There is no doubt that most, if not all structures

are liable to that species of inflammation which, when confined to the skin, is called erysipelas, such inflammations being called erysipelatos. "The conjunctiva, membrane of the fauces, of the air tube, of the rectum, and, I believe, of the pulmonary and intestinal surfaces throughout, are occasionally the seat of this species of inflammation."*

"Some asthenic inflammations of mucous and serous membranes and internal organs, exhibit many of the constitutional effects of the worst forms of erysipelas and may be traced to the same infection. This may be said especially of puerperal metritis, and peritonitis, erysipelatos tonsillitis, and laryngitis, and suppurative phlebitis."†

Some writers go so far as to include all diffuse inflammations under the word erysipelas,‡ but I greatly doubt the advantages of stretching the application of the term so far, and I think the term "diffuse inflammation" is wide enough to include the facts and liable to no misconception or obscurity; agreeing with Hildenbrand, who justly observes, "Absente dermatis typo, etiam *erysipelatis* characterem amittunt."§

These alliances of erysipelas may then be thus grouped together;

1. Diffuse inflammation of the cellular tissue.
2. Diffuse inflammation of the mucous membranes.
3. Diffuse inflammation of the serous membranes.

1. DIFFUSE INFLAMMATION OF THE CELLULAR TISSUE.

There is much evidence in favour of the opinion of the close affinity between erysipelas and diffuse inflammation of the cellular tissue. The general and many of the local symptoms of diffuse inflammation of the cellular tissue closely resemble those of erysipelas.|| The commencement of the disease is marked by the same general derangement, and the constitutional symptoms are of the same character; the changes locally produced by erysipelas in its cellulo-cutaneous form and diffuse cellular inflammation are wonderfully alike:¶ the predisposing causes are the same, the results identical if resolution does not take place. Diffuse cellular inflammation occurs, in connexion with puerperal fever, a disease which, as will be afterwards shown, is closely allied to erysipelas.** Diffuse cellular inflammation and erysipelas prevail epidemically at the

* Travers: *Further Inquiry*; p. 126.

† J. C. Williams: *Principles of Medicine*; p. 314.

‡ Nunneley: *On the Nature, Causes, and Treatment of Erysipelas*.

§ *Inst. Pract. Med.*; tom. iii.

|| Earle: *Medical and Physical Journal*; vol. lvii, p. 1. Dr. Duncan: *Transactions of the Edinburgh Medico-Chirurgical Society*; vol. i, pp. 439 and 451. Watson: *Principles and Practice of Medicine*; p. 775. Lawrence: *Medico-Chirurgical Transactions*; vol. xiv, p. 167.

¶ Compare Lawrence's description of the former, *Medico-Chirurgical Transactions*, vol. xiv, p. 10, with that of the latter by Dr. Duncan: *Transactions of the Edinburgh Medico-Chirurgical Society*; vol. i, p. 609—613.

** Copland: *Medical Dictionary*; p. 303.

same time.* One form of the disease is extremely liable to produce the other in a second person;† and the two forms of disease are mutually capable of exciting each other.‡

Many circumstances connected with the coincident appearances and causes, the circumstances under which it is most rife, its mode of propagation, its accompanying local and constitutional phenomena, the prevalence of the two diseases at the same time, induce a strong suspicion of a close alliance between hospital gangrene, malignant pustule, and erysipelas.§

2. DIFFUSE INFLAMMATION OF THE MUCOUS MEMBRANES.

Numerous writers refer to the close affinity between erysipelas and diffuse inflammation of the mucous membranes.||

There is strong evidence in favour of the opinion that emanations from those with erysipelas will produce diffuse inflammation of these membranes; and I have met with several cases in which a direct extension of the diffuse inflammation had manifested itself from the fauces to the external skin by the anterior nares and lachrymal passages, and *vice versâ*; and the extension of the diffuse inflammation down the throat, has been observed to appear around the wound of tracheotomy in the form of erysipelas.

A diffuse inflammatory state of the fauces has been mentioned as a precursor of erysipelas;¶ and this is so frequently the case that it was observed in nearly 60 per cent. of the cases of idiopathic erysipelas of the face of which I have taken notes, and is therefore included in the definition of the term; it was sometimes observed in idiopathic, and occasionally, but much more rarely, in traumatic erysipelas of the extremities. How is this more frequent occurrence in idiopathic than in traumatic erysipelas to be accounted for; is it that the miasm in being inhaled into the lungs makes a direct impression on the throat,

* Duncan: *Transactions of the Edinburgh Medico-Chirurgical Society*; vol. i, p. 586. Butter. Douglas: *Dublin Hospital Reports*; vol. iii.

† *London Medical and Physical Journal*; vol. i, p. 177.

‡ *Edinburgh Medical and Chirurgical Transactions*; vol. iii, p. 96.

§ South: *Chelius*; p. 70. Rolls: *A Short Account of a Morbid Poison acting upon Sores*; Lawrence. *Lancet*; 1825-6, p. 127. Rankin; vol. iv, p. 323.

|| Hippocrates notices the connexion between erysipelas and sore throat. As do also Aretæus: *Opera Omnia*; edit. Kühn; p. 13. Cælius Aurelianus: *De Morbis Acutis et Chronicis*; lib. iii, cap. ii. Stevenson: *Edinburgh Medical and Chirurgical Transactions*; vol. ii, p. 128. Gibson: *ibid*; vol. iii, p. 94. Fordyce: *Elements of the Practice of Physic*; p. 311. Copland: *Medical Dictionary*; p. 814. Arnott: *Medical and Surgical Physical Journal*; vol. lvii, p. 193. Travers on *Constitutional Irritation*; vol. ii, p. 61. McDowel: *Dublin Journal*; 1834. A. Thompson. Tweedie: *Cyclopædia of Practical Medicine*; vol. ii, p. 108. Alison: *Library of Practical Medicine*; vol. i, p. 88. Baillie: *Transactions of a Society for promoting Medico-Chirurgical Knowledge*. Farre: *Medico-Chirurgical Transactions*; vol. iii, p. 86. Hawkins: *London Medical and Physical Journal*; vol. xlix, p. 275. Gull: *Medical Gazette*; June, 1849. Ryland: *Treatise on Diseases of the Larynx, &c.* Watson: *Op. cit.*; vol. ii, p. 827. Nunneley: *Op. cit.*; p. 115.

¶ Forrestus: *Opera* lxx; *Obs.* xx. Latour. Arnott. Stevenson. Gibson: *Op. supra cit.*

while in its entrance into the circulation by means of a wound this mode of contact is avoided?

Some interesting cases have been witnessed of erysipelas spreading down the throat, and also of extending up the vagina and rectum.*

I remember the case of a woman who, after rigors, had diffuse inflammation of the throat, which spread upwards from the nostrils and mouth to the face; and from the violent retching and distressing sickness, excessive flatulence and relaxed bowels, it seemed probable that it even spread down the alimentary canal to some extent. Wine, which was the only thing that could be retained on the stomach, was liberally given, and she recovered.

Diffuse inflammation of the mucous membrane is not unfrequent in those attending on cases of puerperal fever: the value of this fact will be appreciated when the alliance between erysipelas and puerperal fever is determined.

There are occasionally observed in the surgical wards of hospitals, other cases which seem to point out clearly the alliances of erysipelas; thus, supposing there are several cases of erysipelas of the head, face, or extremities, patients who have taken neither mercury nor iodine, become subject to acute stomatitis, others have swelling and tenderness of the tongue, accompanied with diffuse inflammation of the fauces, and considerable constitutional disturbance.

From the occurrence of these cases of cynanche with ordinary erysipelas, from the fact that we can often trace the continuity of inflammation from the fauces to the face, through one or several of the passages by which the mucous membrane is continuous with the skin, and *vice versâ*, from the connexion of these with occasional glossitis and stomatitis, from the condition of the mucous membrane accompanying these affections, and from the general testimony in favour of its contagiousness, we can but conclude that these affections are instances of these structures being attacked by diffuse inflammation, which when limited to the skin is properly termed erysipelas.

3. DIFFUSE INFLAMMATION OF SEROUS MEMBRANES.

Various writers have included these affections under the term "erysipelas," and the evidence to be produced will serve to prove the strong alliance existing between them.

A. Diffuse Arachnitis. It is difficult to say how far diffuse arachnitis is allied to erysipelas; but it is pretty certain that in many cases of erysipelas of the head this alliance can be traced. Alibert evidently inclines to the opinion that the membranes of the brain may be

* Brodie: *Diseases of Rectum*, *Medical and Surgical Gazette*; vol. xviii, p. 136. *Medico-Chirurgical Review*; July, 1835, p. 320.

affected by diffuse inflammation in connexion with erysipelas.* Nunneley believes† that the frequent purulent deposits in various viscera will never or rarely be found to follow accidents to the head unless preceded by diffuse arachnitis; but in patients who have died from erysipelas of the head I have by no means found this condition of frequent occurrence.

B. Diffuse Inflammation of the Peritonæum, Pleuræ, Pericardium, &c. Diffuse inflammation of these membranes have been frequently noticed supervening upon erysipelas.‡

C. Puerperal Fever. Writers even from an early period suggested, and the limited testimony of later authors confirm, the connexion which exists between erysipelas and puerperal fever. It was first observed and insisted upon by Pouteau, in 1750, who considered the puerperal fever as it then prevailed in Paris as an epidemic erysipelas of the peritonæum, and others subsequently maintained this opinion.

The following is striking evidence in favour of this opinion. The local symptoms during life and the appearances after death are identical, allowance being made for the different situation and texture of the parts attacked;§ both puerperal fever and erysipelas arise under the same circumstances, in crowded and close wards;|| both diseases are marked by great disposition to the formation of unhealthy pus; the same danger attends inoculation with the fluids effused in puerperal fever, and the immediate development of erysipelas or malignant pustule in the part inoculated; both erysipelas and puerperal fever may exist in the same patient; they prevail at the same time; and may during life mutually produce each other in a second person.¶

D. Diffuse Inflammation of Veins, Arteries, and Lymphatics. Diffuse phlebitis. The alliance between these affections and erysipelas may at first glance appear slight, but many circumstances tend to point out a closer connexion.

So similar are the constitutional and even the local symptoms of

* *Maladies de la Peau*; p. 16. *Van Swieten*; vol. ii, p. 400.

† *On the Nature, Causes, and Treatment of Erysipelas*; p. 119.

‡ Underwood: *Diseases of Children*; vol. i, p. 35. Sir A. Carlisle: *Medical Gazette*; 1828, vol. i, p. 400. Abercrombie: *Pathological and Practical Researches on Diseases of the Stomach*; 1830, p. 205. Warren, *On Tumours*; p. 251. Nunneley: *Op. cit.*; p. 96. Storrs: *Provincial Medical and Surgical Journal*, April 23, 1842. Hodgkin: *Lectures on the Morbid Anatomy of the Serous and Mucous Membranes*; vol. i, p. 150.

§ Douglas: *Dublin Hospital Reports*; vol. iii, p. 159.

|| Douglas: *Op. cit.*; vol. iii, p. 149.

¶ Paley: *Medical Gazette*, 1839; p. 397. Lee: *Medico-Chirurgical Transactions*; vol. xvi, p. 444. Ceely: *Lancet*; vol. xxvii, p. 813. *Medical Circular*, 1857; p. 57. Ingleby: *Edinburgh Medical and Surgical Journal*; vol. xlix, p. 419. Idem: vol. li, pp. 91 and 96. Hutchinson: *Medical Gazette*, 1840. West: *British and Foreign Review*; vol. ii, p. 487. Lever: *Medical Gazette*; vol. xliii, p. 1003. Peddie: *North Journal of Medicine*, January, 1846. Holmes: *New England Quarterly Journal*; April, 1843. Copland: *Medical Dictionary*; p. 509. Ramsbottom: *Principles and Practice of Obstetric Medicine*. Rigby. Merriman: *Lancet*, 1840. Nunneley: *Op. cit.*; p. 89. Akerly: *London Medical Gazette*; vol. xxii. Storrs: *Provincial Medical and Surgical Journal*, 1842.

diffuse phlebitis and erysipelas, that even the best observers have made errors in diagnosis. In both these diseases there is the same disposition to the deposition of pus in different organs, and for inflammation and imperfect suppuration to be set up in distant parts of the body; there is the same tendency for the serous membranes to become affected; both diseases depend upon constitutional causes, more than upon the immediate exciting cause; one form of complaint is very liable to produce the other; and it has been observed that the same condition of atmosphere conduces to erysipelas, and diffuse phlebitis. Abundant evidence has already been brought forward to substantiate the opinion, that puerperal fever prevails most when erysipelas, and other diffuse inflammations are rife—produces them, and is produced by them; and as one form of puerperal fever consists in diffuse inflammation of the uterine veins, much of the evidence in proof of the close alliance between erysipelas and puerperal fever is applicable here.*

Diffuse inflammation of arteries. It is probable that like other serous membranes the internal structure of arteries may be subject to diffuse inflammation, in connexion with erysipelas, but I have not met with any instances. Guthrie speaks of erysipelatous inflammation of arteries, and gives three instances.†

Diffuse inflammation of lymphatics. As the lymphatics, owing to their general and dense distribution within as well as between all the organs of the body, necessarily take part in every inflammation, they are no exception to the general rule.‡

The two diseases are occasionally observed to be complicated to a remarkable extent; many patients affected with angioleucitis being soon after attacked with cutaneous or cellulo-cutaneous erysipelas, and and *vice versâ*, those who were first attacked with erysipelas soon presenting it complicated with angioleucitis.

ON ERYSIPELAS.

Before proceeding to the consideration of this disease, it will be desirable to say a few words on the much debated term, erythema, which might be advantageously employed, as was originally done by Hippocrates, simply to denote redness of the skin, and not as indicative of a constitutional disorder. By erythema, I would understand congestion of the skin; and it is therefore certain that every case of

* Duncan: *Edinburgh Medical and Chirurgical Transactions*; vol. i, p. 439. C. Bell: *System of Dissections*; vol. i, p. 281; 3rd edit. Dupuytren: *Leçons Orales. Phlegmon Diffus.* Alison: *Library of Practical Medicine*; vol. i, pp. 86 and 95. Tonellé: *Archiv. Gén. de Méd.*; tom. xxii, p. 356. Cooper's and Travers' *Surgical Essays*; part i. Caswell: *Cyclopædia of Practical Medicine*; vol. iii, p. 120. Nunneley: *Op. Cit.*

† *Gunshot Wounds*; p. 96; 3rd edit.

‡ Sæmmering: *De morbis vasorum absorbentium corp. hum.*; 1795. Abernethy: *Surgical Works*; vol. ii, p. 136. Velpeau: *Gazette Médicale*; 1837.

erysipelas must, at its commencement, necessarily be erythematous, because active congestion must precede inflammation.

The definitions of erysipelas by authors are as varied as can well be imagined.* It would appear that the difficulty of accurately defining this disease arises principally from the question, whether all idiopathic forms of simple diffuse inflammation of the skin, should be included under the generic title of erysipelas, or whether this term should not be limited to spreading inflammation of the skin and subcutaneous cellular tissue.

I define erysipelas to be—diffuse inflammation of the skin, generally preceded by rigor and fever; contagious; frequently attended with diffuse inflammation of the throat and subcutaneous cellular and adipose tissue. The term erysipelas, then, indicates a certain morbid condition of the skin, which is termed diffuse inflammation. The term erysipelas has reference to the local disease alone; no matter what may be its causes, complications, or symptoms, all of which do in reality vary much in different cases; whatever may be the cause of the disease, whatever may be its symptoms or coincident maladies, if there be diffuse inflammation of the skin, then erysipelas exists. But, on the other hand, if there be no diffuse inflammation of the skin, then erysipelas does not exist; no matter from what causes the disease may have originated, even if it has been produced by the erysipelalous virus itself.

The divisions proposed by various authors are even more varied than the definitions; but it must be obvious, from the nature and this position of the parts subject to erysipelas, that any division of disease depending for its accuracy upon the individual structure involved must be more fanciful than just; and that the skin and subjacent cellular structure are so immediately connected that one cannot be long or seriously attacked with diffuse inflammation without implicating the other. For the sake of description, I prefer the terms *cutaneous* and *cellulo-cutaneous* which Mr. Nunneley has proposed, and which I think more eligible than the terms simple and phlegmonous. The term phlegmonous should be abandoned, as it is often used in contradistinction to erysipelalous, to express a different kind of inflammation—the former being circumscribed and adhesive, the latter diffused. Mr. Guthrie uses these two words in this opposite sense in speaking of inflammation of the blood vessels.

In using the terms cutaneous and cellulo-cutaneous, it must be borne in mind that these varieties of erysipelas are not separated from each other by any clear and well defined boundaries, but run gradually and imperceptibly into each other; in fact, they are but the extremes of

* For the various definitions and divisions, see my MS. *Jacksonian Essay on Erysipelas*, deposited in the library of the Royal College of Surgeons.

the same affection, and are applied as the disease predominates in one or the other tissue.

SPECIES I. UNCOMPLICATED ERYSIPELAS.

Var. α , of the face and head. β , of the trunk. γ , of the extremities.

SPECIES II. COMPLICATED ERYSIPELAS.

Var. α , with diffuse inflammation of the subcutaneous cellular and adipose tissues. β , with inflammation of fascia, inter-muscular cellular tissue, and joints.

General description. As a general rule it may be observed, that the local symptoms never manifest themselves unpreceded by some disorder referable to the vital sources and centres, although this may exist in so slight a degree that the patient may neither notice, nor mention it; it will also be observed that the local symptoms supervene earlier in traumatic, than in idiopathic erysipelas, and that occasionally in the former class of cases precursory general symptoms are not observed at all. I, therefore, by no means assent to the assertion of Mr. Travers, that the inflammation of erysipelas precedes the fever. "So also the fever of scarlatina, measles, and small pox, precedes the eruption, and the inflammation of erysipelas precedes the fever."* Wiseman more justly observes, "Sometimes the Fever is vulgarly esteemed a symptom of it, viz., when the Erysipelas is first taken notice of, as if it had preceded the Fever; whereas, indeed, there is no Erysipelas that has not a Fever, either visible or latent, going before it."† Erysipelas is said to be *erratic*, in contradistinction to its usual progressive march, when it propagates itself by irregular impulses; *universal*, when it attacks the whole body at once; *periodical*, when it returns at regular intervals; *symmetrical*, when its course is alike on both sides of the body; and *chronic*, when limited to extent and slow in progress, repeatedly attacking the same part.

A great and characteristic peculiarity attached to erysipelas is, that when once it has attacked the frame, it leaves behind a certain morbid diathesis, rendering the patient liable to be attacked by it, at more or less distant intervals; differing thus in a marked degree from the true exanthemata, a second attack of which in the same individual is an exception of the general rule.

A diversity of opinion exists with respect to which elementary tissues of the skin are more immediately the seat of erysipelas. Some‡ affirm that in the superficial form of the disease the morbid phenomena are developed on the sub-epidermoid tissue, while others§ that even in

* *Further Inquiry*; p. 131.

† *Chirurgical Treatises*; p. 35.

‡ Coster: *Dictionnaire de Santé*; tome i.

§ Rayer: *Traité theoretique et pratique des Maladies de la Peau*; tome i.

the most simple erysipelas, not only the vascular layer, but the entire substance of the skin, and even of the subcutaneous cellular tissue, are affected. Some* assert that the fascia is the principal seat of the disease. Lawrence, however,† truly observes, that this opinion is not substantiated by the post mortem results, these membranes having been found to be almost always unaffected, and that the fasciæ are merely involved by consequence, and only in cases unusually severe. Some‡ consider that the anatomical, or proximate cause of erysipelas, consists in acute inflammation of the minute lymphatic vessels of the skin, which are first affected, and that inflammation of the substance of the skin itself afterwards follows. More lately the venous capillaries have been fixed upon as the seat of inflammation.§

The result of the observations I have made on the integument of patients who have died of this disease is, that in the most superficial form, it is seated in the papillary layer of the dermis, and that as the disease becomes more complicated, the more deeply situated parts are involved; thus, beginning at the papillary layer of the dermis, it extends into the deep stratum or corium, then to the adipose or cellular tissue, it may thence involve fascia, muscles, and inter-muscular cellular tissue. In simple erysipelas there is merely serous effusion; in complicated erysipelas, destruction of the capillaries and all the tissues it invades.

STATISTICS.

The following analysis of 260 cases of erysipelas, of which I have notes, may prove interesting:

notes, may prove interesting :

	Men.	Women.	Total.
Idiopathic of face, head, &c.	34	51	85
Traumatic of ditto	27	13	40
Idiopathic of extremities	27	22	49
Traumatic of ditto	59	27	86
			<hr/> 260 <hr/>

		Rigors and constitutional Symptoms were observed in		Constitutional Symptoms without Rigors in		Precursory Sore Throat.		No precursory Symptoms.	
Idiopathic of face	{ Men	23 or 67.6 per cent.		6 or 17.6 per cent.		14 or 41.2 per cent.		4 or 11.8 per cent.	
	{ Women	38 74.5 —		7 13.7 —		31 60.7 —		3 5.8 —	
Traumatic of face	{ Men	8 29.6 —		10 37.0 —		2 7.4 —		9 33.3 —	
	{ Women	6 46.2 —		5 38.5 —		1 7.6 —		2 15.4 —	
Idiopathic of extremities	{ Men	12 44.4 —		10 37.0 —		3 11.1 —		2 7.4 —	
	{ Women	13 59.1 —		4 18.2 —		3 13.6 —		1 4.5 —	
Traumatic of extremities	{ Men	25 42.4 —		15 25.4 —		2 3.4 —		17 28.8 —	
	{ Women	11 40.7 —		10 37.0 —				6 22.2 —	

Of forty-nine cases of idiopathic erysipelas of the face in women, and of thirty-two in men, it was observed that the disease attacked the different parts of the face in the following order of frequency:

* Arnott. Earle. Hutchinson: *Practical Observations in Surgery*; p. 114. Baroiden. Lepelletier: *Traité de l'Erysipelas*.

† *Medico-Chirurgical Transactions*; vol. xiv, p. 16.

‡ Ribes, Dance, Chomel, Blandin. *Journ. de Connaiss. Med. Chir.*; July, 1837.

§ Cruveilhier. Copland: *London Medical Journal*; vol. xxvi, p. 814.

	Women.			Men.		
Right side of face . . .	29	or 56.9	per cent.	17	or 50.0	per cent.
Left side of face . . .	10	19.6	—	10	29.4	—
Middle line of face . . .	7	13.7	—	4	11.8	—
Both sides at same time	3	5.9	—	1	2.9	—

In these 260 cases, twenty deaths occurred, or 7.5 per cent. Of these, one case was complicated with severe burn, one with dropsy after scarlet fever, one with advanced phlebitis, one with a severe scalp wound, two were in articulo mortis when seized, another was dying from extreme neglect before admission.

These 260 cases occurred in the seasons in the following order :

Spring, 66. Summer, 49. Autumn, 56. Winter, 89.

Thus it would appear that erysipelas is more frequent in winter and spring ; and that it is more fatal in the metropolis during these seasons, the following extracts from the returns of the Registrar General will prove :

	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	Total.
Spring . .	95	71	116	196	137	119	81	120	86	96	1117
Summer . .	80	78	107	129	114	103	74	98	74	115	972
Autumn . .	56	92	126	128	99	65	76	54	80	109	875
Winter . .	77	106	176	126	109	87	116	67	84	128	1076

TREATMENT.

The treatment of erysipelas may be divided into *preventive* and *curative*. The former will include all means which tend to obviate the causes, and prevent the extension, of erysipelas and its allied diseases, the prevalence of which forms a test of the sanitary arrangements of hospitals ; in which institutions, unfavourable locality, dampness of the surrounding soil, imperfect drainage, choked sewers, deficient ventilation, cleanliness, and over crowding, concur for the production and spread of these diffuse inflammations. Hospitals should have large and airy wards for patients to feed, exercise, and amuse themselves ; the floors should be dry rubbed, and polished, not washed, for damp favours miasmata ; and every precaution should be taken against fomites and infection, by the closing and fumigation of infected wards, the total destruction of all dressings and bandages used, and the substitution of tow, &c., for sponges in the dressing of wounds. Charcoal, hung around the bed in coarse muslin bags and trays of the same placed by the bedside, is well worthy of trial.

Having so fully proved the alliance existing between erysipelas and puerperal fever, no practitioner can be sufficiently cautious in going from a case of this disease, to a woman in the parturient or puerperal state ; the annals of medicine contain fearful and heart-rending evidence of the mortality caused by inattention to this most important fact.

The profession is not now "quite at a loss to discover in this affection those marks of debility which some have so much insisted

upon,"* but believing it to be a disease of debility, that is occurring in an enfeebled constitution, almost universally treat it by stimulants and by the free and steady administration of nourishment: frequent and large doses of brandy, beef tea, quinine, ammonia, chloric ether, &c., should be given, and attention paid more to the state of the pulse, than to that of the secretions. In rural districts, among a hardy and robust population, a more marked inflammatory form will be benefited by purgatives, and slight but not too lowering antiphlogistics; and an intermediate class of cases will require some modification of treatment; each case presenting its own peculiarities and indications on which the necessity, and the proper time for the administration of stimulants must depend.

Opiates must be given with great caution—they are contra-indicated in cerebral congestion and coma; in one case of this kind, death so rapidly followed their administration as to appear to be the cause of the unfortunate event—in these cases the milder preparation of hyoscyamus, is to be preferred; but to lessen pain and irritation, tranquillise the system, and procure sleep, they are of much service in the latter stages, and more severe forms of the disease. For this, they should be given in sufficiently large doses to produce the desired effect, small doses only adding to the febrile excitement, and rendering the head more liable to become affected. In cases attended with violent delirium, I have seen the hydrochlorate and acetate of morphia, in grain doses, produce a most beneficial effect.

In desperate cases, with intense coma, and typhoid symptoms, turpentine has produced good results; its purgative action should be decided, otherwise it is apt to cause unpleasant head symptoms; it should be given in doses of \mathfrak{z} ij to \mathfrak{z} iv, with one-half or two-thirds the quantity of castor oil.

When diffuse inflammation is spreading down the larynx and trachea, tracheotomy is imperatively called for; indeed it is the only means, combined with the free administration of stimulants, which offers any chance of success.

The experience I have had of the new vaunted remedy, tincture of the sesqui-chloride of iron, is not at all in its favour when compared with alcoholic stimulants, to which it may in some cases be a useful adjunct. It is especially indicated in albuminuria coincident with, or consequent on general erysipelas, of which I have met with three cases.

Cases of chronic erysipelas are very difficult to cure; the local symptoms never altogether disappear, and are apt to become aggravated at short intervals on the least irregularity of diet or from external impressions, and often without any evident cause. In these cases the functions of the stomach and liver are often disordered, and the secretions consequently vitiated; these conditions must be rectified by a course of

* Lawrence: *Medico-Chirurgical Transactions*; vol. xiv, p. 17.

alteratives, aperients, and tonics—such as iodide of potassium, alkalies and sarsaparilla, preparations of zinc and iron.

With regard to local treatment, I am not aware of any that will cut short the disease; in the uncomplicated variety, collodion, or gutta percha dissolved in benzole, forms an elegant remedy; and in uncomplicated erysipelas of the face, punctures relieve the distention; but the most agreeable application will be found to be that of lard and cotton wool, after relaxing the skin by warm fomentations. In uncomplicated erysipelas of the extremities, a perfect line of nitrate of silver, at least three inches above the line of disease, in nine cases out of eleven proved a sure barrier. Where an interstice has been left, I have seen it creep through, and spread.

In the variety complicated with diffuse inflammation of the cellular tissue, the early use of small incisions when the skin is hard, tense, and resisting, and the pain severe and throbbing, is much to be recommended; the grand object of these should be the prevention, rather than the removal, of the effects of inflammation; or in other words, they should give exit to blood and serum, rather than pus and sloughs.*

From all I have seen and read of this disease, I can discover no argument for delaying, but many for immediately resorting to them; by thus acting and combining frequent syringing with tepid water, and repetition of incisions if necessary, we may be truly “at a loss to name a more valuable accession to the art, of modern date, than that for which the profession stands indebted to Mr. Copeland Hutchinson.”† M. Chassaignac, of the Hôpital Lariboisière, drains off the matter by means of India rubber tubes, perforated at various parts of their length, so as to facilitate the flow of the discharge along them.

In chronic erysipelas, a solution of the nitrate of silver should be frequently applied, or small blisters at short intervals at a little distance from the affected part; occasionally when these fail, an issue in the arm affects a cure.

To conclude, then, erysipelas is merely an example on the skin, of that diffuse inflammation, which in other tissues constitutes diffuse inflammation of the mucous membrane, diffuse phlebitis, puerperal fever—all of which have a common origin, a poison in the blood, are infectious and contagious, and may mutually produce each other.

The term erysipelas should be confined to diffuse inflammation of the skin, and subcutaneous cellular tissue.

Erysipelas is best treated by stimulants and support, and when complicated with inflammation of the subcutaneous cellular tissue, by early incisions which should extend to the depth of the disease.

* Paulus Ægineta recommends them; vol. ii, pp. 65-67. Oribasius, and Octavius Horatianus, both recommend “free incisions.” *Comment on Paul. Egin. sec. xxi, Erysipelas*; p. 69.

† Travers: *Op. Cit.*; p. 147.

APPENDIX.

Many important points in connection with the nature, causes, and symptoms of erysipelas, still remain unconsidered. The work of Fenger—*De Erysipelate Ambulanti Disquisitio*—(which is but little known in England), contains much information of statistical, etiological, and pathological interest; this, with the results of my own experience, and other matters relative to this protean disease, I have condensed into the following pages.

I. With regard to the *eruptive fever*, it has been very generally observed by authors to be so slightly precursory that no degree of certainty could be obtained respecting it. In forty-one cases in which attention was directed to this point—

None was present in	.	.	5 cases.
Presence uncertain in	.	.	2 „
Not exceeding 12 hours duration in	15	„	
„ „ 24	„	„	9 „
„ „ 48	„	„	6 „
„ „ 72	„	„	1 „

But it was undoubtedly precursory in three cases, in one of which it lasted four days; in the other two, one day. Thus in three cases alone was the precursory fever unquestionably observed; in all the others the erysipelas was already manifest at the time. On inquiry, however, it was found that most had precursory febrile symptoms of one, two, or three days; although it could not be clearly determined at what precise time the first indications of erysipelas appeared. Now, if in these cases it is decided that the fever preceded the eruption, it is to be remarked that in twenty-four out of thirty-one cases its duration did not exceed twenty-four hours; in six, two days; and in one, three days. Likewise, of 173 cases collected from hospital records—

In 66 no mention is made of precursory fever ;
 In 21 remarked as uncertain ;
 In 34 not exceeding 12 hours duration ;
 In 26 „ „ 24 „ „
 In 20 „ „ 2 days „
 In 5 „ „ 3 „ „
 In 1 lasting 7 days.

In twenty-nine cases of erysipelas, on board the “Dreadnought,” supervening upon some external irritation, the local inflammation was manifested within twenty-four hours after the premonitory rigor. In some cases it is delayed five days. (*Van Swieten: Opera; vol. ii, p. 78. Aubrée: Thèse de l'Erysipèle; 1857; p. 18.*)

With regard to the time of day at which the symptoms were first observed, in eighty-two cases—

	Day.	Night.
Men	19	15
Women	18	30
	<hr/> 37	<hr/> 45

It would, therefore, appear that more cases commenced in the night or evening, especially in women.

The precursory fever usually commenced with rigors: of thirty-six cases, in six only were they not observed, and in these they were remarked after four hours slight feverishness; in two alone were they wanting; in one, however, they were decidedly absent. In the remaining twenty-nine their presence was decided—in twenty-five constituting the first symptom of the disease; in three, headache followed; in one, headache and fever; this, in seven cases, was very intense—in two, with two regular stages, like quotidian ague.

Increased heat was somewhat less constantly observed than rigors, for the diffuse inflammation of the skin sometimes directly followed the rigor; it was remarked in twenty-two cases; in two, it constituted the first symptom of the disease.

The increased heat was not generally followed by perspiration: in eight cases it was remarked as present; in two absent.

Thirst was present in eighteen cases; in one noted as wanting.

Headache was one of the most constant phenomena of the fever; for in twenty-one cases it was present—in none absent; in three it was most severe; in four the first symptom of the disease.

Sleep was very frequently disturbed, especially in all cases in which the disease commenced at night, the patients constantly awaking with rigors and headache, unable to sleep again; when the fever was protracted two nights before the appearance of the diffuse inflammation, the patients sometimes slept better on the second night. In isolated

cases somnolence was observed, and complete anorexia in almost all cases. Vertigo, delirium, tinnitus aurium, restlessness, lassitude, unsteadiness, pain in the joints, were less frequent symptoms of this fever.

State of the Pulse. Although this point could not be determined from the patient himself, still, in some few cases, it could be by chance ascertained. In these it was evident the pulse immediately increased in frequency: thus, in six cases, it was twice observed to be 110; in the rest, 120, 131, 156, 175. Hospital cases give a less number; in cases of which notes were taken it varied between 70 and 140. The frequency of the *respiration* was also noticed to be increased in those cases in which attention to this particular point was directed.

The so-called *gastric* or *bilious* symptoms were observed in twenty cases; the tongue usually coated with a white or yellow fur, but sometimes dry, brown, and fissured—very rarely clean; taste altered, bitter; nausea, and sometimes vomiting of greenish matters, chiefly in women; a sense of weight and pain in the cardiac region, less frequently distention and pain on pressure; bowels confined, diarrhœa being very rarely observed.

The *lymphatic glands* nearest to the affected part were sometimes swollen and painful. Chomel considered this to be so frequently the case as to be pathognomonic. (*Chomel and Blache: Dict. de Méd.*—art. *Erysipèle*; t. xii, p. 220. See also *Galen: Method. Medendi*; lib. xiii, cap. iv. *Sydenham: Op. Universa*; sec. vi., cap. vi. *Hoffman: Medicinæ Rationalis Systematicæ*; vol. iii. *De Febre Erysipelaseâ*. *Frank: De Curandis Hominum Morbis Epitome*; lib. iii. *Burserius: Inst. Med. Pract.*; vol. ii, chap. 2.) But I have only met with it about once in every three cases. Fenger suggests that it may be either that the erysipelas was mistaken for angioleucitis, or that the patients under his observation were exposed to different epidemic influences; for in the above-mentioned cases this was rarely observed, and the same applied to sore throat, in erysipelas of the face.

If the erysipelas originated around a wound, considerable pain is sometimes felt in the part; in those rare cases in which the wound is especially examined just previous to the appearance of the diffuse inflammation, the previously healthily suppurating wound became hot and dry, the pus thin, ichorous, and scanty. When appearing around a recent wound, I have observed the edges of the wound swell and become everted; if adhesion has commenced it is arrested, or the wound re-opens and the suppuration is even completely arrested. Even the precursory fever may commence with head symptoms—convulsive or epileptic attacks, for instance: this is doubtless more frequently observed in children; the same may be observed as regards tetanus, all disappearing soon after the appearance of the erysipelas. It rarely

happened that severe inflammatory symptoms arose, but this may take place with a fatal result.

Of fifteen cases of simple erysipelas, collected from hospital records 1839—40, twelve were idiopathic and three traumatic; of the former, in one, the precursory fever was uncertain, in one absent, in five not lasting beyond three days, in the rest protracted to four, five, seven, eight, and nine days. (*J. P. Frank: Epitome; l. iii, p. 33.*)

Painful enlargement of the lymphatic glands was common, since it was remarked in four cases; in eleven cases of idiopathic erysipelas of the face, in four the precursory fever was attended with pain, redness, and swelling of the tonsils, with exudation and decided pain on swallowing. The fever, intense at first, frequently somewhat diminished after few days, acquiring fresh strength on the appearance of the diffuse inflammation, and accompanied by the preceding symptoms. In one case in which the precursory fever lasted four days and in those cases in which it lasted seven days, all idiopathic; sore throat and swelling of the lymphatic glands were present.

Fenger agrees with me (p. 11) in concluding that most cases of traumatic erysipelas begin with very slight or no precursory fever; but in idiopathic erysipelas, although in some cases the precursory fever was absent or very slight, it was much more frequently observed, and of some days duration.

2. *The diffuse inflammation.*

The temperature of the inflamed part, as felt by the hand, was always decidedly increased, and was greatest in the part itself diminishing later in the disease. In the case of a man with erysipelas, commencing in the left hand, the temperature of the healthy hand was 85° Fah., of the affected hand 94°.

In a young woman with erysipelas of the face—

	Temp. of recent Erysipelas.	Temp. of old Erysipelas.	Temp. of the cavity of the Mouth.	Temp. of the healthy part of Face.
1st day	97.7 . .	. .	99.5 . .	95.3
3rd day	95.9 . .	93.2 . .	97.7 . .	93.2
4th day	95.9 . .	92.5 . .	98.6 . .	

However, the temperature could not be taken sufficiently often to determine the mean increase of heat—Lepelletier (*Traité de l'Erysipèle; 1836*) refers to an increase of three or four degrees centigrade.

Bullæ were frequently observed on the affected part. In fourteen out of forty-four cases; they most frequently appeared early, but occasionally in the middle and towards the termination of the disease; they were especially observed in the face: thus, in eleven cases of erysipelas of the face, bullæ were noted in six. Once Fenger met with them containing purulent, but never sero-sanguinolent foetid, matter, which

many authors ascribe to gangrenous erysipelas—a form he has never met with, but the possibility of the existence of which he does not deny, especially in infantile erysipelas.

Of forty-four cases, in seven the margin of the erysipelas was not defined on the first day, but in all it was so on the second or third day and remained so during the progress of the disease; when it was observed to become less distinct, and gradually fade away,—it was a sign of resolution.

The question of the defined edge is one on which authors are far from being unanimous.

Boyer writes: “L’erysipèle est une inflammation de la surface de la peau, d’une étendue plus ou moins grande, mais sans bornes bien marquées. (*Traité des Maladies Chirurgicales*; t. ii, p. 6.)

Broussais states: “La chaleur est cuisante, la rougeur a pour caractère de s’affaiblir et de se perdre insensiblement par la nuance normale de la peau, &c.” (*Cours de Pathologie et de Therapeutique Générale*; t. i, p. 108.)

Lawrence writes: “This inflammation generally strikes a considerable surface of the skin, the inflamed part being irregularly circumscribed by a defined line.” (*Medico-Chirurgical Transactions*; vol. xiv, p. 5.) Chomel, Blache, Velpeau, and others are of the same opinion.

Donellan says: “Its limits are generally ill defined, especially at the beginning and decline of the disease.” (*Cyclopædia of Practical Surgery*; p. 147.)

Nunneley (*On the Nature, Causes, and Treatment of Erysipelas*), describing simple erysipelas, correctly observes, “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.”—P. 155.

Graves (*Clinical Lectures*) also insists on the raised defined line.

Simple or *ambulant* erysipelas generally spreads from the part first attacked, gradually and progressively diffusing itself over a greater or less portion of the surface of the body, with defined margin and the other above described symptoms.

No rule as to direction could be determined, for in thirty-two cases it

Ascended	7
Descended	6
Spread laterally	3
Ascended and descended	7
Spread in all directions	9
	<hr/> 32

Arising in the same place and from the same cause it was observed to

spread now in this, now in that direction,—still in spreading it pretty constantly followed two rules :

1st. It assumed a *symmetrical outline* : in eighteen cases in which the ambulant erysipelas acquired the symmetrical outline it was found that in

4	this was accomplished on the 1st day of the disease.				
2	“	“	2nd	“	“
2	“	“	3rd	“	“
2	“	“	4th	“	“
1	“	“	5th	“	“
5	“	“	6th	“	“
1	“	“	7th	“	“
1	“	“	14th	“	“
<hr/>					
18					

And this is not unfrequently so perfect that by accurate measurement no difference can be detected,—but it may generally be to some slight extent.

Graves alludes to this tendency of erysipelas (*Clinical Medicine*, p. 677), and I have met with some very interesting and striking examples in the face. (See also *Aubrée, Op. Cit.*, p. 31.)

2nd. *Folds of skin* opposed the progress of erysipelas. Deep furrows not unfrequently formed a barrier, and if it succeeded in passing, it was by the sides where the furrow was less deep, and it thus, as it were, waded over ; this was especially observed in the fold separating the anterior surface of the neck from the sub-mental region ; seldom was the labio-mental fold, still less so, the naso-labial fold, passed ; in other folds this phænomenon was less manifest.

With regard to which side of the body it more frequently appeared :

	Median line.		Right side.		Left side.	
	Men.	Women.	Men.	Women.	Men.	Women.
Fenger's cases . . .	3	4	5	10	9	13
Frederick hospital . .	24	7	31	32	36	34
Other hospitals . . .	3	4	—	4	2	2
	<hr/>		<hr/>		<hr/>	
	30	15	36	46	47	49
	<hr/>		<hr/>		<hr/>	
	45		82		96	

Thus in one-fifth of the cases therefore the disease commenced in the median line, and more frequently on the left side than the right. I have found that at least in erysipelas of the face the right side is more frequently attacked than the left (p. 13). This agrees with the experience of Louis.

With respect to the question, in which portions of the body erysipelas

most frequently appears, it is necessary to separate idiopathic from traumatic cases; of the former, twenty-nine, it appeared:

	Men.	Women.
In the face	13	9
In the upper extremity	1	3
In the lower extremity	2	1

Thus, according to Fenger, simple idiopathic erysipelas much more frequently attacked the face; but, contrary to my own observations, more frequently in men than women. The following is the result as regards traumatic erysipelas:

<i>Head:</i>	Men.	Women.	Total.	
Face	23	12	35	67
Aural Region	4	6	10	
Scalp	14	18	22	

<i>Trunk:</i>	Men.	Women.	Total.	
Neck	3	3	6	44
Breast	—	25	25	
Rest of chest	1	2	3	
Abdomen	1	1	2	
Back	1	1	2	
Nates	1	4	5	
Genitals	—	1	1	

<i>Upper extremity:</i>	Men.	Women.	Total.	
Axilla	1	4	5	42
Arm	6	2	8	
Elbow	1	3	4	
Forearm	2	3	5	
Hand	9	9	18	
Fingers	—	2	2	

<i>Lower extremity:</i>	Men.	Women.	Total.	
Groin	13	3	16	50
Thigh	2	2	4	
Knee	4	4	8	
Leg	11	4	15	
Foot	3	3	6	
Toes	—	1	1	

The face, therefore, and the other parts of the head appear more liable than the rest of the body, but not to such an extent as is observed in simple idiopathic erysipelas; in the face (as in my own recorded observations), more cases occurred in men than in women: and it is worthy of remark how, in the latter, cases affecting the breast

preponderated, and that the observation of most authors that erysipelas of the breast is nearly always phlegmonous is not confirmed.

As regards the question of the extent of the cutaneous surface erysipelas usually invades, dividing the body into four regions—head, trunk, upper and lower extremity—of these regions it extended to

	One region.		Two regions.		Three regions.		Four regions.	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.
Fenger's cases .	10	18	6	5	1	3	—	1
Frederick hospital	47	45	40	25	6	8	1	1
Other hospitals .	2	2	2	6	1	2	—	—
	—	—	—	—	—	—	—	—
	59	65	48	36	8	13	1	2
	124		84		21		3	

It rarely happens, then, that erysipelas extends over more than half of the body, very rarely that it spreads over the entire cutaneous surface. Fenger adds, that a case never occurred to him in which no part of the body escaped as in the oft quoted cases mentioned by Lamotte. (*Traité complet de Chirurgie*; 3rd edit., t. i, obs. 103, p. 404.) I have met with a very interesting instance, and also one of *universal* erysipelas, invading at once the entire periphery, as mentioned by Rennes (*Archives Générales de Médecine*; tom. xiv, p. 533) and Renauldin (*Dict. des Sciences Médicales*; art. *Erysipèle*): in both these cases the urine became albuminous.

As regards the extension of the disease, no appreciable difference existed between men and women.

In sixty-seven cases of erysipelas of the face it was

Confined to the face in	15 cases.
Spread to the scalp in	17 „
Spread to the trunk in	30 „
Spread to the trunk and upper extremity in .	4 „
Spread to the trunk and both extremities in .	1 „
	<hr/> 67

In nearly half of the cases, therefore, it did not extend beyond the head. In twenty-two cases in which it commenced in the scalp, it was

Confined to the scalp in	0 cases.
Spread to the face in	6 „
Spread to the face and trunk in	14 „
Spread to face, trunk, and upper extremities .	2 „
	<hr/> 22

Erysipelas commencing on the scalp appears, then, to be very liable to spread. Chomel has met with three instances in which it was

confined to the scalp; and one is reported by M. Dulmont. (*Union Médicale*; 1847.) In twenty-five cases commencing in the breast, it was

Confined to the breast in	8 cases.
Confined to the upper part of chest and neck	7 „
Spread to the back and abdomen	2 „
Spread to the head	4 „
Spread to the upper extremity	1 „
Spread to the head and upper extremity	1 „
Spread to the head and both extremities	2 „
	<hr/>
	25

Of forty-six cases in which the disease commenced in the arm, it was

Confined to the affected extremity in	23 cases.
Extended to the back	15 „
Extended from the back to the head	3 „
Extended from the back to the other arm	2 „
Extended from the back to the other arm and head	2 „
Extended to the other extremities	1 „
	<hr/>
	46

In half of the cases, therefore, the erysipelas did not extend beyond the affected arm. Of fifty cases in which the disease attacked the lower extremity, it was

Confined to the lower extremity in	32 cases.
Spread to the trunk in	13 „
Spread by the trunk to the other extremity	4 „
Spread by the trunk to the other extremity and head	1 „
	<hr/>
	50

It appears, then, that erysipelas of the lower extremity has no very decided tendency to spread. Nothing could be with any certainty determined as to the degree of celerity of its progress; for it has been observed to spread, sometimes very quickly, sometimes very slowly, in the same part of the body. Besides, it is in many cases difficult to determine the precise time the part is attacked by the disease, and, consequently, the time taken in running its course. Still, the following facts may be recorded.

(A.) The longer erysipelas lasts, the slower its progress: dividing the disease into three stages—commencement, middle, termination—the ratio of celerity with which the disease traversed the same parts in these various stages, was, in twenty-three observations, 5 : 6½ : 8;

nor was it ever observed, as stated by Graves (*London Medical Gazette*; October, 1838, p. 105), that the disease made most progress on the last day.

(B.) Erysipelas originating near the median line of the body spreads more quickly than when commencing on either side: thus, in the face, when from the commencement it spreads symmetrically to both sides, it takes no longer time to cover all this portion, than, originating laterally, would be consumed in covering only half of the same.

(C.) Erysipelas ascends more rapidly than descends.

3. *Accompanying fever*—analysis of its symptoms:

Pulse.

The following table gives the mean frequency of the pulse;

The daily frequency of the pulse;

The influence of sex and age; and the number of observations.—

(Fenger: *Op. Cit.*; p. 58.)

Day of Disease.	Frequency of Pulse.	Number of Observations.	Maximum Frequency.	Minimum Frequency.	In Men.	Number of Observations.	In Women.	Number of Observations.	Over Thirty Years.	Number of Observations.	Under Thirty Years.	Number of Observations.
1	117	83	176	70	110	37	122	46	107	29	122	54
2	108	83	140	75	103	39	113	44	104	29	110	54
3	104	69	140	68	100	28	107	41	99	24	107	45
4	104	76	144	64	98	32	109	44	98	29	108	47
5	103	58	195	60	94	29	111	29	94	23	108	35
6	103	51	155	52	96	22	109	29	95	17	107	34
7	101	48	180	50	97	24	105	24	—	—	—	—
8	100	43	132	68	92	22	108	21	—	—	—	—
9	95	33	132	68	87	16	102	17	—	—	—	—
10	98	25	140	68	85	8	104	17	—	—	—	—
11	93	24	132	60	81	10	102	14	—	—	—	—

After the eleventh day the number of observations was so small as to be of no value.

From the above table we learn that—

(A.) The pulse, in simple erysipelas, is much increased in frequency; more so in women than in men, and in the young than in the old.

(B.) Its greatest frequency is attained on the first day of the disease; on the second and third day it rapidly, afterwards gently, decreases, until the tenth day, when it becomes somewhat more frequent.

(C.) It not unfrequently happened that the pulse, after having fallen for some days, is again increased; for, in the above table, after the first maximum, at the beginning of the disease itself, there was another manifest acceleration, occurring

In women and the young on the . . . 4th and 5th day.

In men and the aged 6th and 7th day.

Fenger has endeavoured to ascertain whether this increase was to be ascribed to the nature of the fever itself or to idiosyncrasy of isolated cases. Of sixty-six cases in which this increase was, on attentive examination, observed on the former or latter day of the disease, in eighteen no cause was detected to which the increased frequency of the pulse could be attributed; in the rest, however, on that day on which the increased frequency of the pulse was observed—

The disease assumed a fatal tendency in . . .	17 cases.
Typhoid symptoms appeared in	6 „
Inflammation of thoracic or abdominal organs . . .	3 „
Complicated with traumatic delirium	2 „
Complicated with hectic fever	2 „
Fresh eruption of erysipelas	6 „
Fresh delitescing, assumed	5 „
Spread from the trunk to the head	7 „
	<hr/> 48

Thus, in by far the larger number of cases, it appears that the increase in the frequency of the pulse coincides with the form proper to the disease itself; but all these causes are unusual, and will be further discussed under the head of anomalies. It may here, however, be decidedly stated that the frequency of the pulse usually decreases daily in this disease.

The pulse having been observed to be more frequent when this disease ascended to the head, attention was directed as to whether erysipelas arising in the head is attended with greater frequency of the pulse than elsewhere.

On the first day of the disease—

Erysipelas of the head, pulse 109—mean of 29 observations.	
„ elsewhere „ 121 „ 54 „	

Second day—

Erysipelas of the head, pulse 104—mean of 33 observations.	
„ elsewhere „ 111 „ 50 „	

The pulse, therefore, appears to be rather less frequent in erysipelas of the face and scalp; but the contrary is observed in erysipelas of the breast; for in this situation the mean frequency from twelve cases, on the first day of the disease, was 131. The number of Fenger's cases are not sufficient to accurately determine the ratio of frequency of the pulse in erysipelas of the various parts of the body.

The rhythm of the pulse is nearly always quite regular; in isolated cases, or fatal ones, or seriously complicated, irregularity and various intermissions were observed. Nothing could be determined respecting

the other qualities of the pulse which varied considerably. The same was the case with respect to the *sounds of the heart*; in some cases louder, and heard over a larger portion of the chest—in others more remote; in some stronger—in others more feeble; in some irregular, &c.

It is worthy of remark that Fenger alludes to an accompanying *bellows sound*, heard at first rarely, then more frequently, and finally in nearly all cases. This was sometimes very slight, only to be detected by the well practised ear; but sometimes so distinct, that no doubt could exist of its presence. It was at times harsh, like the noise of a saw or file. It most frequently accompanied the first sound, less frequently the second, still less so both together. It was not uncommonly heard in the arteries, becoming continuous, very like that which is to be heard in shells. It may be heard early in the disease, and generally disappeared after a few days; but occasionally persisted after all the other remains of erysipelas had vanished. It was never associated with symptoms, auscultatory or otherwise, of inflammation of the external or internal membranes of the heart, nor was any explanation of it derived from *post mortem* examination.

The cases in which I have met with this bellows sound were in young, nervous, anæmic, female subjects, and depended more on the previous chlorotic state of the patients than on the presence of erysipelas itself. Should the latter, however, be found to be the case it will be an additional reason for tonic and stimulant treatment.

State of Blood.

From some cases detailed by Fenger it appears, contrary to the opinion of Callisen (*Syst. Chir. hodiern*; vol. i, § 497), but agreeable to that of most observers (p. 2), that the blood drawn is buffy and cupped, though in some few cases this was not observed;—according to Andral and Gavarret (*Simon's Chemistry*; *Sydenham Society's edition*; vol. i, p. 277) the quantity of blood globules is much diminished, which attenuation of the blood may account for the occasional presence of the above-mentioned bellows sound.

Hæmorrhage rarely occurred; epistaxis was observed in a case of erysipelas of the forearm on the fourth day of the disease to the great relief of cephalalgia; bleeding from around a suppurating bubo was fatal on the ninth day. In another fatal case bloody diarrhoea occurred; the suppurating surface from which the erysipelas spread was observed in isolated cases to exude blood. In one of my fatal cases the external surface of the heart was found covered with minute ecchymoses: occasionally copious spontaneous hæmorrhage has been noted. (*Martin's Hamburger Zeitschrift für die gesammte medicin*; b. viii, h. 4; 1838. *Schmidt's Jahrbücher*; 1838; b. xx, p. 207.)

Menstruation, in the course of erysipelas, was observed to

follow its natural course. The outbreak of erysipelas was never found to coincide with the appearance of this discharge. An interesting case, however, is recorded (*Aubrèe: Thèse de l'Erysipèle; 1857; p. 37*); a young girl, *æt.* 18, was attacked with erysipelas on the face seven times in six months, each attack coinciding with the catamenial return, which was either completely suppressed or very scanty; but although women are supposed to be more liable to erysipelas at the periods of the catamenia than at any other time, when it does occur I believe it is a mere accidental circumstance.

Rigors did not return in most cases after the premonitory symptoms; still it occasionally happened that they were intercurrent until the last days of the disease, they were sometimes felt in one part of the body, as the head or feet.

Increased heat was oftentimes confined to the affected part; it was, however, generally felt in the rest of the body: it was sometimes increased towards evening, seldom putting on the characters of hectic. The temperature of the skin over the abdomen was found to vary between 95° and 104° ; but a sufficient number of observations was not made to be of any value.

I have met with a case accompanied by excessive pain in the affected part.—(See also *Aubrèe: Op. Cit.; p. 18.*)

The *Skin* was usually dry; but in fourteen cases out of forty-three, perspiration, sometimes profuse, was observed, usually coming on at night, with acid reaction, universal, and warm: in nine cases it came on from the first to the fourth day; in five, from the sixth to the tenth. It seldom lasted through the whole disease, often only one or a few days, without consequent relief to the patient. Sometimes rigors, increased heat, and sweating were observed to return in regular quotidian paroxysms like intermittent fever. I have noted one case in which the perspiration appeared to be critical.

An eruption of innumerable *sudamina* was sometimes observed—their diameters one quarter to one half line. They appeared on the abdomen, lower part of chest, and upper part of the thighs; in five cases observed by Fenger they were all seated in the last-mentioned situation. Sometimes they appeared in the affected part, sometimes not, nor were they ever observed after great sweating or with it; in many cases too, accompanied by considerable perspiration, they were in vain sought for. All the cases in which Fenger observed them were very serious ones, two proving fatal. They were never observed to be confluent, but that this may be the case is manifest in a decided case of simple erysipelas related by Louis. (*Recherches sur la Fièvre Typhoïde; 2nd edit., vol. ii, p. 112.*)

The *respiration* was nearly always increased from the first day of the disease, thus—

Day of Disease.	Near frequency of Respiration.	Maximum.	Minimum.	Number of Observations.
1	34	52	20	19
2	30	48	14	15
3	28	40	10	18
4	29	36	20	12
5	30	46	20	13

For the following days the number of observations is so small as to be of no use ; from this table we may conclude—

That the frequency of respiration is greater on the first day of the disease : on the second and third day it slightly decreased : on the fourth and fifth day slightly increased again. What was observed as regards the pulse applies to the frequency of the respiration,—it generally decreases after a few days.

The *Urine* had always an acid reaction. Fenger does not mention the occurrence of albuminuria in connexion with this disease. I have met with three cases coincident with or consequent on general erysipelas ; it has been alluded to by others, and will be more fully discussed further on. (*British and Foreign Med. Chir. Rev.*; July, 1853.)

During the acute stage of the disease the urine always presents the characters of febrile urine : in two out of five cases, during this period, Becquerel detected albumen : in four out of six cases, Dr. Begbie found the urine, at the same stage of the disease, albuminous ; while in three of the four, the albumen was associated with blood. At the period of desquamation, after acute attacks of erysipelas, more especially if a considerable extent of the skin has been affected, it is not unusual to find the urine coagulable : occurring at this, the desquamative stage of the disease, coagulability may last for several days, and while it exists the urine is generally charged with epithelium, derived from the minute renal tubes ; unless very frequent examination of the urine is practised, the coagulability may escape detection. It may be here observed that, as in scarlet fever, every precaution should be taken against a sudden chill, as, not unfrequently, development of organic renal disease occurs in those who have suffered repeated attacks of diffuse inflammation of the skin.

Sleep. This was generally more composed on the third, fourth, and fifth nights, but cases were not wanting in which insomnia was protracted to the twentieth day.

The *state of the tongue* varied : of thirty-one cases, in five it continued clean, but in one of these after the two first days it became coated ; in the remaining twenty-six it was more or less thickly coated. Of twenty-nine cases, the tongue became dry at the commencement of the disease in eighteen, in the remaining eleven it was moist, but in four of these it became dry on the second, fourth, ninth, and eleventh

day respectively; in some of the more severe cases it was fissured, dry, and rough. The tongue generally became moist again after the first week, but examples were not wanting in which the dryness lasted longer, even to the thirtieth day.

Cardialgia was rather frequently observed, and constituted one of the most troublesome symptoms of the disease; usually coming on early, it lasted a long time,—sometimes it appeared later, often with increased sensibility, rarely with enlargement of the cardiac region; it appeared to be in no way related to the seat of the disease. Women appeared more liable than men to nausea, vomiting, *cardialgia*; for of 111 observations in men, nausea was remarked in thirteen, vomiting in seven, *cardialgia* in eleven; whereas in 106 cases in women, nausea was observed in twenty-one, vomiting in twenty-three, *cardialgia* in twenty-five cases.

The *bowels* are sluggish in erysipelas. Out of ninety-five cases, they were regularly moved in seventeen only, in the remaining seventy-eight, confined: fifty-three cases were observed in which liquid motions were present, but in thirty-four of these the diarrhœa was slight, of short duration, the result of purgative medicine; in the remaining nineteen, diarrhœa was present, scarcely ever of great extent, appearing on the first day of the disease, occasionally copious, cholicky, foetid, involuntary, exhausting,—never critical. Investigating the cause of this diarrhœa, in six it accompanied a typhoid form of the disease, in four the complication of hectic fever, in one erysipelas of the whole abdomen, in the remaining eight cases no cause could be detected; it was occasionally remarked to be inimical to entozoa, lumbrici and tæniæ being expelled.

The following then appear to be the phenomena of the accompanying fever. The disease begins with considerable fever, of which the *most constant* symptoms are frequent pulse, uneasiness, febrile languor, insomnia, cephalalgia, anorexia, thirst, sluggish bowels, acid urine, acceleration of respiration; *rather frequent* symptoms—bellows sound in the heart and large arteries, buffy blood of blood, heat and dryness of the skin with chills and intercurrent sweats, nasty taste, coated tongue, dry tongue, nausea, vomiting, *cardialgia*, urine alternately clear and turbid; *rarer* symptoms—irregularity of the pulse and respiration, sudamina, hæmorrhage, salivation, pain in abdomen, diarrhœa, expulsion of intestinal worms.

Of these symptoms the more frequent are generally the most decided on the first day of the disease, then they gradually decrease, and towards the disappearance of the erysipelas totally disappear. It may be here remarked that in an epidemic of erysipelas observed in Africa, the fever was intermittent, low, and often attended with coma: sulphate of quinine gave very good results. (*M. Burdiat: Thèse de Montpellier; 1847.*)

But the course of the disease may be irregular and disturbed, constituting (4) *Anomalies. Erratic.* Fenger has twice observed erysipelas arising in either breast,—skipping the middle of the chest and back, attack the other breast, but has never observed it leap to a distant part of the body; he does not deny that this may take place, but contends that this is much more rarely observed than is usually supposed. In a certain number of cases, hasty examination may lead into error which a more careful one would have avoided, thus—

(A.) It sometimes happens that erysipelas, after spreading in one direction from the part first attacked, leaves this to diffuse itself in another direction. If then for some days this new direction has escaped observation, it may appear to have been erratic.

(B.) In some parts of the body it is difficult to follow the diffuse inflammation, as the back, nucha, and scalp. Now if the skin is not very tense, raised, and painful, the disease spreading to these parts may be lost to the inattentive observer, until it becomes more conspicuous,—as by spreading to the face, for instance.

(C.) It sometimes happens that in a part formerly attacked and now desquamating, before the disease has left off spreading, a fresh eruption may arise.

(D.) Solutions of continuity arising in the course of erysipelas from blisters, for instance, may be the starting point of a fresh eruption. (*Archiv. Gén. de Méd.*, t. xxiv, p. 540.) Fenger has never observed this, but Rennes has.

Out of the many cases in which authors for the above reasons have mistaken *simple ambulant* erysipelas for *erratic*, may be especially mentioned the one related by Bougon (*Clinique des Hôpitaux et de la Ville*, cit. *Lepelletier: Traité de l'Erysipèle*, p. 241), and the celebrated case by Desault. (*Œuvres Chirurgicales*; t. ii, p. 591.)

In a case related by Fenger, the erysipelas after spreading over the anterior surface of the arm, escaped his observation; then appeared on the back, nucha, and entire scalp; then suddenly attacking the face, presented a decided instance of erratic erysipelas. He has met with other similar cases.

A great mistake is made by authors in describing *erratic* and *ambulant* erysipelas as the same; but Swediaur (*Novum Medicinæ Rationalis Systemæ*; vol. ii), Frank (*De Curand. hominum morbis*; vol. ii), and Willan (*On Cutaneous Diseases*), give what appear to be decided instances of this anomaly; I have met with two cases—in one of simple erysipelas of the leg, after some days the diffuse inflammation suddenly appeared in the face, attended with severe typhoid symptoms, which persisted after the disappearance of the erysipelas, and terminated fatally; in the other, after erysipelas of the face from a scalp wound, a dusky patch of cellulose-cutaneous erysipelas appeared on the

right hip and extended down the leg—incisions were made, stimulants liberally given, and the man recovered.

Nunneley (*On the Nature, Causes, and Treatment of Erysipelas*; p. 161) is of opinion that “this erratic variety may be looked upon as one of the connecting links between erysipelas and typhus fever, which have many phænomena in common with each other.”

Sometimes before the disease has finished its course, a *fresh eruption* of erysipelas appears: in 217 cases, Fenger observed this ten times—two in men, eight in women. When this happens in various parts of the body, it always appears in or near the part in which the disease commenced; in one case on the sixth day of the disease, in two on the eighth, in two on the ninth, in three on the tenth, in twelve on the thirteenth day; in one case several secondary eruptions were observed.

Fenger relates three cases of erysipelas extending to the peritonæum; in these the cavity was found to contain flocculent sero-purulent fluid. I have met with one case in which erysipelas attacking an open bubo spread inwards to the peritonæum, causing death; and another fatal case, in which erysipelas attacking the wound resulting from operation for strangulated hernia, extended inwards to the peritonæum: other instances, corroborating the opinion already given on the alliances of erysipelas (p. 4) may be cited. (*Aubrée: Op. Cit.*, pp. 55—65. *Gazette Médicale de Paris*; 1856,7). *Delirium* occurred in sixty-five out of 217 cases—forty-one in men, twenty-one in women.

The delirium observed on the 1st or 2nd day in 13 cases.

“	“	“	3rd or 4th	“	21	“
“	“	“	5th to 7th	“	19	“
“	“	“	8th to 10th	“	7	“
“	“		after 10th day . . .		3	“
“	“		day not determined . .		2	“
					<hr/>	65

It would appear, then, that cases of delirium after the first week are rare, and are more frequent on the third or fourth day.

Endeavouring to ascertain whether any relation existed between the seat of the erysipelas and the presence of delirium, it was found that on that day in which the delirium was observed, the erysipelas was principally seated in the

Head	36 cases.
Trunk	10 “
Upper extremity	4 “
Lower extremity	14 “
Seat not determined	1 “
<hr/>	
65	

It may be added, that in four of the cases in which the erysipelas was seated in the trunk, it had descended from the head. This symptom, then, appears to be much more frequent in erysipelas of the head and face.

Parent-Duchatelet and Martinet have related two speedily fatal cases of arachnitis after the disappearance of erysipelas of the face; in both cases albuminous pseudo-membranous exudation covering the arachnoid was observed, and they thence conclude that this form of arachnitis is most likely to run into suppuration. Fenger has never met with a case, and thinks those much mistaken who suppose this common; for in cases of erysipelas with symptoms of arachnitis, no evidences of inflammation of the arachnoid are observed, but congestion of the whole substance of the brain: an opinion in which I fully concur. But cases assuming all these symptoms do occur, and one has lately come under my notice, in a healthy adult of temperate habits, who was attacked with phlegmonous erysipelas of the nose, in whom the diffuse inflammation appeared to extend to the membranes of the brain; but no *post mortem* examination was allowed. (P. 8.)

From the above series of its anomalies we see that this disease may put on various appearances,—serious and very dangerous forms; it may be added, however, that it may run through its course almost without fever. The patient may be well, with good appetite, no loss of rest, and have a defined, elevated, bullous inflammation, without any acceleration of the pulse. Other patches of the same kind follow, whilst the first becomes pale; and thus daily, for several days, a fresh erysipelatous spot appears, followed by desquamation. Of this, which he terms the *hybrid* form, and which is identical with the *apyretic* form of Chomel (*Op. Cit.*), Fenger has seen four examples. There is also a form which from its limited extent, slow progress, and liability to return may be termed chronic. (Colles: *on the Theory and Practice of Surgery*; 1845.)

5. Complications.

In distinguishing between simple and traumatic erysipelas; it was remarked, as proper to the former, 1st, that it most frequently attacked the face: 2ndly, that the precursory fever was more constant, and lasted longer, and was very often attended by sore throat and swelling of the lymphatic glands (p. 6); when complicated with diffuse inflammation of the cellular and adipose tissues, it constitutes the cellulocutaneous, or phlegmonous erysipelas of authors.

Fenger met with several cases complicated with delirium tremens; this, however, I have not observed, probably from the fact that all my cases were treated at once by stimulants;—opium gave sleep, but the erysipelas proceeded as usual. In some cases opium did not produce its effect, and the patients died: in these cases nothing was observed in the brain, but rather constantly, oedema and hepatization of the lungs.

The complication of typhoid fever, although rarely met with by Fenger, was occasionally observed by Chomel and Louis, and probably depends on epidemic influences. In these cases the erysipelas usually appeared at the end of the typhoid fever, most frequently attacking the face; and spreading over a greater or lesser portion of the body, attended with considerable increase of fever and delirium; nearly all the cases quickly proved fatal, either by the violence of the fever or the passage of the erysipelas into the cellulose-cutaneous and gangrenous forms.

Fenger mentions three cases, complicated with violent acute inflammation of the knee joint. In one case two days after, in the others, three days after excision—all died.

An American writer (*American Journal of Medical Sciences*; October, 1848) refers to numerous and severe cases of diseases of joints, some of them requiring amputation, the direct result of the extension of erysipelas from the superficial tissue surrounding them. The joints most frequently attacked were the ankle, wrist, and elbow. In the instances calling for amputation, it was found that after a period of a few weeks, the synovial tissues as well as the articular cartilages were completely destroyed, but the bare surfaces of the bone quite smooth and free from caries or interstitial deposit. I am by no means prepared to verify this statement, for out of my 260 cases I have only observed one in which joint disease supervened upon erysipelas, and this case does not come under the above category; for it was not an instance of the direct result of the extension of the diffuse inflammation of the skin to the tissue of the joint, but appeared to be totally unconnected with the erysipelas which was followed by consecutive abscesses.

6. Termination.

Fenger observed no crisis, as mentioned by Lorry (*Tractatus de Morbis Cutaneis*; vol. i, p. 36): in one of my cases the perspiration appeared decidedly critical. He occasionally met with the *critical* abscesses formed by extension of the disease to the cellular tissue; suddenly appearing towards the end of the disease without any preceding symptoms, in the axilla, nates, arm, and even occasionally in great number in various parts of the body untouched by the diffuse inflammation. In a case given by Fenger after erysipelas arising from abscess in the neck and spreading over the whole body, twelve of these abscesses appeared, three in the nates, two in the right arm, and seven in the left arm; all were opened except one which disappeared.

M. Landouzy (*Gazette Médicale de Paris*; 1839) has reported a case in which, after an attack of erysipelas, sixty of these small superficial abscesses formed in various parts of the body, even in parts to which the erysipelas had not extended. (See also *Sauvage: Nosologie Méthodique*; t. i, p. 601.)

I have met with four instances of the occurrence of these *cold* abscesses in various parts of the body after erysipelas, in the most

striking of which, eighteen formed—two in right arm (one near the wrist, the other at the elbow joint), two on the left hand (one over the first phalangeal joint of the middle finger, and the other over the wrist joint), two on the right thigh, two on the left thigh and one on the left leg, one on the left foot at the ankle joint, one on left knee, another behind left knee, two (one large and one smaller) on right hip, one on the outer side of left ankle, one on the calf of left leg, one on the inner and back part of right hip, and on the inner side of left ankle.

It would appear probable that the purulent diathesis is the cause of this phænomenon, and that it is happily confined to the structure of the skin. "In respect to *erysipelas*, in some cases the abscesses pursue exactly the same course as those observed in severe fevers, and in such must be referred to the original cause productive of the disease itself. In others, which have only been imperfectly observed, the abscesses much more nearly resemble the surgical ones; and then there is every reason to believe them due to purulent infection, whether we admit, with Ribes, that the erysipelatous inflammation has its seat in the venous capillaries, and there terminates by suppuration, or believe that the erysipelas has been complicated by a true phlebitis." (*MM. Castelnau et Ducrest: Archiv. Gén. de Méd.*; t. xii, 137.)

Metastasis. This term is applied to those cases in which, the erysipelas suddenly disappearing, decided inflammation of the serous or other membranes arises. Fenger relates a case of peritonitis and another of pleuritis; but is of opinion that it does not appear at all probable that the same inflammatory process, repelled from the skin, invades the serous membranes, constituting erysipelatous inflammation of the serous membranes: because erysipelas is very often remarked to vanish suddenly without any bad symptoms; and, again, it not uncommonly happens that the inflammation of the serous membrane commences a little before the erysipelas vanished. In these cases, therefore, the internal inflammation might be regarded as rather the cause than the effect of the delitescence of the diffuse inflammation. Moreover, inflammation of the serous membranes more often arises when the diffuse inflammation of the skin neither vanishes nor becomes paler, but continues its usual course.

In a case mentioned by Fenger, the three great serous cavities of the body were affected whilst the erysipelas continued to spread. Wherefore, when it cannot be denied that these inflammations arise without delitescence of the erysipelas, and that it is equally well demonstrated that these inflammations sometimes arise before its departure, and, moreover, do not appear at all when the diffuse inflammation of the skin vanishes, it may be doubted whether in such cases it is not a mere coincidence that the internal inflammation has arisen at the same time as that at which the erysipelas vanished.

It would appear, then, that other causes must exist to account for the

presence of those diffuse inflammations (properly termed erysipelas when confined to the skin) attacking the serous cavities. In nearly all the cases met with by Fenger, the peritonitis appeared only when there was diffuse inflammation of the skin of the abdomen—pleuritis, of the chest—arachnitis, of the head. Exceptions, however, to this rule occur. No case could be traced to the so-called causes of metastasis—cold, mental emotions, errors of diet, the application of repellent remedies. No harm resulted in Fenger's cases from the cold and astringent lotions usually applied. Sydenham, Chrestien (*Gazette Médicale*; 1833), Blandin (*Lancette Française*; No. 109), and others, relate instances of metastasis; but Louis, Cullen (*First Lines*, &c.; § 703), and Watson (*Lectures on the Practice of Physic*), either deny its possibility, or have never met with it; and such is the result of my own more limited observation. A case, however, is given in which the sudden disappearance of erysipelas of the face and scalp was followed by symptoms of broncho-pneumonia of the right side. Twelve hours after the application of a large blister, and the administration of acetate of ammonia, the erysipelas returned to its original seat, the chest symptoms gradually disappeared, and the patient recovered. (*Aubrée: Op. Cit.*; p. 27.)

Of Fenger's 260 cases, thirty-three, or one-eighth died:

Day of disease .	2	4	5	6	7	8	9	10	12	13	14	15	17	21	23	31	36	44	
Died	1	2	2	4	2	5	4	2	1	1	1	1	2	1	1	1	1	1	= 33

It thence appears that patients die at all periods of the disease, but it is to be remarked that two-thirds died on the first ten days of the disease, and half between the fifth and ninth day.

8 died with typhoid symptoms.

3 „ „ nervous fever (*febris nervosa lente*).

4 „ „ arachnitis.

5 „ „ peritonitis.

2 „ „ arachnitis, pleuritis, and peritonitis.

2 „ „ pneumonia.

1 „ „ purulent metastasis.

1 „ „ large critical abscess.

1 „ „ eruption of fresh erysipelas.

1 „ „ arteritis and phlebitis.

2 „ „ complication of delirium tremens.

2 „ „ complication of suppurative arthritis of knee.

1 „ „ complication of hypertrophy of heart.

The above is a good illustration of the Protean character of the disease, for not in one-fourth of the fatal cases are the *post mortem* appearances peculiar to the disease itself; and even if these cases are compared they present but little similarity.

In those cases in which death occurred while the skin was considerably implicated, all appearances vanish after death. Fenger never met with inflammation and suppuration in the vessels of the substance of the skin, as described by Blandin (*Journ. de Connaiss. Méd. Chir.*; July, 1837), Ribes (*Mémoires de la Société Médicale d'Emulation*; t. viii, p. 622), Cruveilhier, and Copland (*London Medical Journal*; vol. xxvi, p. 814); nor the redness, thickening, and friability, mentioned by others. (*Louis: Gazette des Hôpitaux*; May 2, 1833. *Gendrin: Histoire Anatomique des Inflammations*; t. i, p. 426. *Denonvilliers. A. Berard: Compendium de Chirurgie*, t. ii, p. 46.) Such phænomena may be observed in the skin from blisters, burns, and other causes.

Fenger, on attentively examining the skin fifteen to forty-eight hours after death from simple erysipelas, found—

1. The epidermis rough or desquamating, more readily separated from the chorion in the affected than in other parts of the body.

2. The substance of the chorion, pale, elastic, soft, free from infiltration, apparently healthy; when the erysipelas was seated in a depending position, as the back, the chorion was found infiltrated with a serous red or brownish liquid; but when the same was observed in other places on the back which had not been attacked by erysipelas, there were no means of distinguishing the one from the other. He never found inflammation of the capillaries of the skin as mentioned by Rayer (*Traité des Maladies de la Peau*; t. i, p. 119), and cannot imagine how this can ever be demonstrated; nor has he ever met with pus in the substance of the chorion itself.

3. In erysipelas with bullæ these were found sprinkled over the epidermis, as layers or crusts of greater or less thickness.

4. The subcutaneous cellular tissue in most cases perfectly healthy, but in those cases in which, during life, the swelling and tension were considerable, effusion of limpid or reddish serous, or purulent liquid, mixed with softened and destroyed cellular tissue; occasionally the pus was collected into an abscess.

5. Veins of the affected part generally healthy, but one case (detailed by Fenger) proved an exception: in this, inflammation of the principal artery and veins of the affected limb were observed, leading to gangrene and extensive swelling of the whole limb; but in the usual cases of simple erysipelas these symptoms neither arise during life, nor are any traces of inflammation found after death; we may conclude then that inflammation of the blood vessels is neither a constant primary or secondary phænomenon of simple erysipelas. The result of my own observations on this point is already given. (P. 12.)

Fenger occasionally noted firm clots on the right side of the heart, in one case so much so as to resemble the deposit from the interior of an

aneurism; there was also hepatization of the lungs. In another case of erysipelas of the lower extremity, Fenger found a clot in the vein, in a state of suppuration. I have met with two instances of large clots in the femoral and saphena veins; in the former the clot was firmly adherent to the side of the vein, in the latter it was softened in the interior by disintegration,—certainly not from suppuration, as Fenger suggests.

The substance of the brain was always found firm and pallid. (*Wells: Transactions of a Society for the Improvement of Medical Knowledge; vol. ii, p. 224. Bricheateau: Clinique Médicale de l'Hôpital Necker; p. 57.*)

In death from idiopathic erysipelas of the face and scalp, more than turgescence of the cerebral vessels is seldom found. Instances occur of violent cerebral symptoms, sufficient to warrant the conclusion that an intense meningeal inflammation was going on, in which after death no traces of it are found. In one case I found the veins of the pia mater filled up with long, firm, yellow clots, which extended into the sinuses and jugular veins; and the same in another case, but to a less extent.

Age. In the period of three and a half years, 4863 patients were admitted into the Frederick Hospital; in these, 217 cases of simple erysipelas occurred, of which, allowing for twenty instances of return of the disease in the same individuals, leaves 197 cases of this disease.

In the following table Fenger gives the number of men of all ages labouring under this disease, the number of various ages in the hospital, the relative frequency to 1000 of the disease in the various ages in men, the same as regards women, and then the relative frequency of the disease as to age and sex in both sexes.

Age.	Men.			Women.			Of 1000 patients of both sexes yearly attacked with erysipelas.
	Attacked with erysipelas	Number of patients in hospital.	Of 1000 yearly attacked with erysipelas.	Attacked with erysipelas	Number of patients in hospital.	Of 1000 yearly attacked with erysipelas.	
0—7 . . .	1	50	20	2	40	50	33
8—15 . . .	1	197	5	8	116	69	29
16—20 . . .	18	405	44	21	265	79	58
21—25 . . .	24	648	37	27	342	79	52
26—30 . . .	14	444	32	10	244	41	35
31—35 . . .	5	406	12	9	122	74	26
36—40 . . .	7	253	28	3	121	25	27
41—45 . . .	11	229	48	3	70	42	47
46—50 . . .	4	165	24	2	101	20	23
51—60 . . .	12	229	52	5	142	35	44
61—70 . . .	3	107	28	4	96	42	34
Above 70 . . .	—	19	—	2	34	59	38
Uncertain age	1	16	—	—	2	—	—
Total . . .	101	3168	32	96	1695	57	41

As regards sex, then, it was found that on comparing the number of either sex attacked, with the number of patients in the hospital, erysipelas was much more frequent in women than in men; the relative frequency between the two sexes being as seven to four.

With respect to *age* it was observed that the disease is at its maximum degree of frequency at about twenty, whence it gradually decreases to about thirty-five, then it is again increased, attaining the mean after the completion of the fiftieth year; the statement then that erysipelas is most frequent from the twentieth to the fortieth year (*Aubrée: Thèse de l'Erysipèle; 1857; p. 11*), is incorrect. A difference in this ratio results from the sexes, for while the minimum frequency of the disease in men was observed in the thirtieth to fortieth year, in women it was in the following decennial period, which does not confirm the opinion that the climacteric favours this disease.

Fenger then concludes that women are much more liable to this disease than men. Joseph Frank (*Prax. Med. Universa Proœcepta; 2nd edit., vol iii, cap. vi*) gives the extremely disproportionate ratio of sixteen women to four men: Blache and Chomel (*Dict. de Médecine, art. Erysipèle*) thirteen women to seven men: Louis (*Chomel, Op. Cit.*) twenty-five women to eighteen men. Of 630 cases, distributed amongst the Paris hospitals in 1830—1, 326 were women and 304 men.

Fenger appears to be quite correct in considering simple idiopathic erysipelas more frequent in women than in men; for although the 260 cases of erysipelas observed by me (p. 12) give a ratio of 147 men to 113 women, on separating the idiopathic from the traumatic cases, the ratio is sixty-one men to seventy-three women; the great preponderance of the traumatic variety in the former sex is probably due to the much larger number of men with various kinds of wounds, admitted into a large metropolitan hospital.

Aubrée (*Op. Cit.; p. 11*) from a considerable number of cases concludes that the excess in women is not more than one-sixth to one-eighth; it is probably to be accounted for by their greater delicacy of skin and susceptibility of constitution. There is no doubt of its greater frequency among the young than is shown by the above table, but this is explained by the fact that no children were admitted into the hospital. It appears to be peculiar to no trade or calling, but it seems to be more frequent in those parts that are habitually uncovered; for this reason the Romans, as Celsus informs us, were more frequently affected in the legs (*De Medicinâ; lib. v, cap. xxviii*): and Hutchinson accounts for its frequency in the same part amongst seamen, from the constant irritation of coarse, wet trowsers. (*Medico-Chirurgical Transactions; vol. v, p. 279.*)

Many have alluded to its frequency among spirit drinkers; and M. Imbert-Gourbeyre (*Gazette Médicale de Paris, and Nos. 17—18,*

Medical Times; 1857) draws attention to the frequent complication of erysipelas with the dropsy of Bright's disease; it is sometimes developed spontaneously, and sometimes (so to say) traumatically, in consequence of a simple puncture, or from the breaking of the distended skin. M. Rayer believes that, in the case of dropsy, the production of erysipelas is remarkably favoured by the phlogistic disposition which exhibits itself under so many forms in chronic albuminous nephritis; and he is confirmed in such opinion by having observed that these erysipelatous and phlegmonous inflammations are of far more frequent occurrence in the dropsies arising from nephritis, than in those which depend solely upon affections of the heart and large vessels. He maintains, moreover, that punctures and scarifications, which are so often useful in dropsy depending upon disease of the heart, are almost always mischievous (as, indeed, Blackall had already declared them to be) in dropsy consecutive to albuminous nephritis, when they induce inflammation of the skin. Erysipelas complicating dropsy especially affects the lower extremities, the labia, the scrotum, and the walls of the abdomen; and it is not unfrequently complicated with gangrene. Many cases of erysipelas are given in the works of Rayer, Bright, Gregory, Alison, Christian, Blackall, and others. In a total of 129 autopsies, M. Becquerel reports two cases of gangrene (one of the scrotum) and three of erysipelas; and among sixty-five cases, Malmsten (*Ueber die Brightsche Nierenkrankheit*; 1846) gives five of erysipelas, three proving fatal. In two of Malmsten's cases the erysipelas appeared spontaneously in acute and fatal forms of Bright's disease; although the general opinion is, supported by M. Rayer's cases, that the erysipelas is almost always of traumatic origin, occurring only in chronic cases. Erysipelas as a complication of albuminous dropsy, is almost a fatal occurrence; but that this is not always the case is shown by two instances of recovery, one of which occurred to M. Tardieu and the other to M. Imbert-Gourbeyre.

Besides erysipelas complicating the dropsies of Bright's disease, it may be directly symptomatic of the chronic and latent form of this disease, when it may play an important and often a terminating part. These relations of erysipelas with Bright's disease may to some extent furnish an explanation of those bad forms of erysipelas which so often appear in chronic diseases, exercising a fatal influence over their issue.

The influence of erysipelas itself in inducing anasarca is an interesting fact. That is to say, this affection is sometimes observed to terminate in anasarca, a circumstance that has not been borne in mind in considering the relations of erysipelas to Bright's disease. Allusion is not here made to the œdematous swellings which erysipelas sometimes leaves behind it, especially when it has been recurrent, and which are

known as œdematous erysipelas. The subject of this anasarca has scarcely been noticed by authors, notwithstanding the great attention paid since Bright's researches to the occurrence of anasarca after scarlatina, rubeola, and variola. M. Imbert-Gourbeyre adduces three examples; one of them is recorded as forming one of numerous instances of dropsy following an epidemic of erysipelas which prevailed in Paris in 1707; the other is related by M. Abeille; and the third occurred to M. Imbert-Gourbeyre himself. Like the anasarca after scarlatina, that following erysipelas may or may not be complicated with albuminuria; the presence of albumen in the latter case being, however, the exception—recovery having, in fact, taken place in all the cases known.

Idiopathic erysipelas of the face is sometimes complicated with a fugaceous, temporary albuminuria, which has been termed critical. M. Abeille seems first to have noted it, he having observed the occurrence of albuminuria in seven out of ninety-five cases of erysipelas. Dr. Begbie (*Medical Times*; June, 1852) has also published an account of the ephemeral albuminuria met with in certain febrile affections. He states that he found albumen in the urine from the period of the commencement of the convalescence of erysipelas. The author has examined the urine in a great number of severe cases of idiopathic erysipelas of the face, and he has only very rarely been able to detect a slight and temporary albuminuria. But towards the decline of the disease he has often met with the false albuminuria well known to observers, that is obtained with the acid, which rapidly renders the urine turbid when it is strongly charged with urates—a false albuminuria, that rapidly disappears upon the application of heat. Like the critical albuminuria in question it is very fugacious, seldom remaining longer than three days. Without denying that this critical albuminuria is really sometimes met with, he suspects that in other cases its existence is due to the employment of the acid in place of heat.

Allusion is also made to this subject in the *British and Foreign Medico-Chirurgical Review*; July, 1853: and Erichsen (*Op. Cit.*; p. 367) writes: "Some diseased states of the blood appear to predispose in the highest degree to the supervention of erysipelas. This is especially the case in diabetes, and in granular disease of the kidneys attended by albuminuria. As a consequence of renal disease, erysipelas will occur idiopathically, or from the most trivial causes—a scratch, the sting of an insect, or any of the minor operations in surgery, more especially about the lower part of the body, will occasion it. And not only is it readily induced in this way, but it will extend in an uncontrollable manner in those states of the system, there being apparently in them an utter want of limiting or reparative power in any inflammation, however set up."

Of the 197 cases, twenty, or nearly one-tenth, had a second attack of the disease. Of the whole 4863 patients labouring under various diseases during the same period of time, 197, or nearly one-twenty-fourth, were cases of erysipelas; so that the prevailing opinion that those who have already been attacked are predisposed to the disease appears to be confirmed—even periodicity in its return has been remarked (*Lorry; Hoffman; P. Frank; Aubrée, Op. Cit.*, p. 30), as well as remissions (*Piorri, Tractatus de Morbis Cutaneis de Erysipelata; Lepelletier, Op. Cit.; Roche and Sanson, Nouveaux Eléments de Pathologie*, t. i; *Rayer, Op. Cit.*); and, according to some authors, ambulant erysipelas may be habitual.—*Palissier: Essai sur l'Erysipèle Phlegmoneux. Lepelletier: Traité de l'Erysipèle*, p. 244. *Raimann. Aubrée: Op. Cit.*, p. 14.

Sojourn of patients in a hospital predisposes to this disease. Of 217 cases noted by Fenger, nineteen alone arose out of the hospital, the remaining 198 commenced in the hospital.

There can be no doubt, then, that the liability to both idiopathic and traumatic erysipelas is increased and favoured by hospital life.

Of these 198 cases commencing in the hospital,

50 commenced on the 7th day after admission.			
45	“	“	8th to 15th “
40	“	“	16th to 30th “
29	“	“	31st to 60th “
16	“	“	61st to 90th “
18	“	“	after 90th day.

The shortest time was one day, the longest 395 days, after admission.

The disease began

	In Men.	In Women.	Both sexes.
Mean time after admission	27 days	44 days	36 days
Half of the cases arose . . .	first 15 days	first 16 days	first 15 days
One-third	first 9 days	first 9 days	first 9 days
Two-thirds	first 25 days	first 30 days	first 27 days
Disease appeared more than			
150 days after admission	twice	10 times	12 times

The mean time, then, in which the disease arises is greater in women who, after several months sojourn in the hospital, appear more disposed to erysipelas than men.

It may be generally stated that the length of time patients remain in hospital does not greatly predispose them to the disease; for many more were attacked during the first month than the third, and the number of these is much less after three months sojourn than one

month; like the hospital attendants themselves they appear to become, as it were, *acclimated*, and thus able to resist, although constantly exposed to the danger of infection.

The great influence of the *morbid condition* on the development of this disease is manifest. Of 217 cases, seventeen were idiopathic, 200 traumatic; in 166 this morbid condition was in twelve a wound or some injury closely resembling it, viz., burn, blister, or leech-bite; of the 166 cases, twenty-six were accidental wounds, of which sixteen were scalp wounds, three of the face, the rest the result of the knife of the surgeon.

In 46 cases from opening abscesses.

„ 29	„	„	dilating old opening of abscess.
„ 15	„	„	dilating wound (ten, scalp; two, face).
„ 20	„	„	incision of inflamed limb.
„ 30	„	„	other surgical operations.

140

12 cases followed ulcers (five, syphilitic).

2	„	„	slight excoriations.
3	„	„	lupus (Willan).
1	„	„	eczema.
1	„	„	blennorrhœa of the ear.
3	„	„	inflamed skin or glands.

22

166 cases of wounds.

12 cases resembling wounds.

200 cases of traumatic erysipelas.

The size, situation, or cause of the wound seemed to have no effect.

It is said, however, that wounds made by caustic are much less frequently followed by this unfortunate complication than those caused by the knife. In my experience, scalp wounds are very frequently attacked by erysipelas, although idiopathic erysipelas is not common in that situation; and that traumatic erysipelas of the face is somewhat less frequent than that of the scalp, although idiopathic erysipelas is much more frequent there.

With regard to the condition of the suppuration at the time of the invasion of the disease, of thirty-four cases,

Wound accompanied by simple suppuration in	. . .	13
„ „ superficial sinuses in	. . .	3
„ „ deep sinuses in	. . .	18

With respect to what day after the wound the erysipelas appeared :

41 cases	.	2 days after.
76 „	.	3 to 8 days.
33 „	.	9 to 16 „
17 „	.	17 to 30 „
5 „	.	31 to 60 „
2 „	.	after 60 „
4 „	.	uncertain interval.
<hr/>		
178		

Shortest time after infliction of wound	.	.	.	$\frac{1}{2}$ day.
Longest	„	„	.	160 days.
Mean time	„	„	.	10 „
In half of the cases it appeared on the first	.	6	„	
In two-thirds	„	„	.	8 „
In five-sixths	„	„	.	16 „

It appears, then, that erysipelas usually quickly follows the wound, whence it spreads to the surrounding surface.

Fenger doubts the contagiousness of this disease, the probability of which appears to him reduced to a minimum; and in this opinion he is supported by Frank, Sennert, Hoffmann, Alibert, Chomel, Rayer, Cazenave, and most French authors; but all English authorities* are of opinion, and rightly so too, that it is not only epidemic, but contagious. Erichsen thinks this can no longer be denied. Travers, Copland, Bright, Nunnely, and others have adduced cases in proof of its contagious character; and Erichsen (*Science and Art of Surgery*; 2nd edition, p. 368) has repeatedly noticed cases in which erysipelas, often of a fatal form, was communicated to the attendants or relations of patients affected by it.

The history of various epidemics is given by authors from Hippocrates downwards; and nearly every hospital has its own experience of a circumscribed epidemic.†

Fenger (p. 147) considers the opinion advocated by Dr. Gregory (*Lancet*; July, 1848), that this disease is occasioned by too large a number of patients, untenable; but although this overcrowding does not act upon the wound or injury as the exciting cause, it undoubtedly renders the patient more predisposed.

With regard to the season most favourable to this disease he found, that in the months

* Wells, Pitcairn, Parr, Baillie, Dickson, Weatherhead, Stevenson, Arnott, Gibson, Williams, M'Dowel, Hutchinson, Good, Bateman, Blackett, Lawrence, Liston, Tweedie, Bright, Travers, James, Copland, Watson, Elliotson, &c., &c.

† For a very interesting example see *Archiv. Gén. de Méd.*; t. xii, p. 414.

From November to April . 22 cases in 100 occurred.
 „ May to October . . 18 „ „

Hippocrates (*Epidemicorum Morborum*; lib. iii, cap. ii) found cold (“vere calido”) favourable to the appearance of this disease. J. Frank (*Nosographie Medicale*; t. ii) had with more cases “vigente gelu sicco.” Hoffmann (*Medicinæ Rationalis Tract.*; t. iv) in cold and damp seasons. Boinet, in autumn, following a hot and damp summer. Hasper (*Die Krankheiten der Tropenländer*; vol. ii, p. 303), in warm climates, met with epidemics of this disease in the cold seasons.

The year 1838 was, in England, characterized by its low *temperature* throughout, and its more than average moisture; although the quantity of rain that fell in the metropolis was two and half inches less than the average amount between the years 1826—35; the general annual fall being about 24 inches.

The deaths from erysipelas were considerably above the average, and more fatal amongst males than females.

			Males.		Females.		Total.
Winter	. 36°	. .	57	. .	49	. .	106
Spring	. 53°	. .	57	. .	48	. .	105
Summer	. 61°	. .	43	. .	45	. .	88
Autumn	.	. .	61	. .	45	. .	106

The epidemic recorded by Hippocrates, is an instance of a pestilence breaking out, and being most virulent during the spring. The following statistics bear out the Hippocratic observation of its being a disease of the *cold seasons*.

	Winter.	Spring.	Summer.	Autumn.
Average of ten years	101·	87·	79·	98·
Weekly average .	7·10	6·9	6·1	7·7
1848	195	129	128	126
1849	127	113	99	109
1854	96	115	109	128
	418	367	336	363

It appears, then, that erysipelas is most prevalent in the metropolis during the winter and spring; that it is least so in the summer; and that it begins to rise again during the autumn.

Meteorological conditions conducive to erysipelas.

From the fact that erysipelas is a disease which is most fatal during the cold seasons, we may suppose that a reduction of temperature, and the other attributes of winter and spring, are conducive to its development; and such in fact is the case, for we find that exposure to *cold* and *moisture* is one of the most frequent atmospheric causes. The year 1848, in the winter quarter of which the number of deaths in the

metropolis rose to 195, nearly double the amount of the average, was *southerly*, and distinguished by a *large fall of rain*. The winter quarter of 1855, remarkable for the excess of deaths from erysipelas, which is to be attributed to the very low temperature that has characterized the three first months of the year.

At Inverness, for the last nine months of 1848, erysipelas was very prevalent. The application of a blister, an irritating liniment, or a wound, however trifling, were, in five cases out of ten, sure to be followed by this disease. Many persons died of erysipelatous sore throat and inflammation of the lungs, all unyielding to depletive remedies. In the infirmary of that town, the dread of erysipelas was so great for a considerable time as to deter many persons from entering it. (*London Journal of Medicine*; No. i, p. 115. Haviland on *Climate, Weather, and Disease*; p. 113.) I have found it more frequent in winter and spring.

As the above observations especially refer to *traumatic simple* erysipelas, the number of which variety greatly preponderates, Fenger adds a few words on the causes of *idiopathic simple* erysipelas. Of seventeen cases observed, nine commenced out of the hospital and eight in the hospital; of twelve cases recorded in hospital note books, three began out of the hospital and nine in the hospital: it appears, therefore, that sojourn in a hospital is a cause of idiopathic erysipelas; but this more frequently commences out of a hospital than traumatic.

The epidemic genius possesses great influence in these cases; and it is worthy of remark that Fenger noticed in the same years that simple traumatic erysipelas appeared in the hospitals, an epidemic of idiopathic erysipelas reigned in the city.

Duration of disease—i. e., to the day the pulse returned to its natural beat, and good appetite enjoyed—of 191 cases:

Day	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	26	27	34	uncertain
Cases	3	9	12	10	10	8	15	7	16	8	21	11	10	6	5	8	2	3	6	4	2	1	2	1	5

Thus half of the cases (ninety-six) were cured by the tenth day. The probability of duration is, therefore, ten days; but the duration of the disease itself is uncertain.

During four years (1838—41) 260 cases of erysipelas were observed:

	Ill.	Died.	Convalescent on the ninth day.
In 1838 . . .	30	4 = 1 in 7.5	10 = 1 in 3.0
In 1839 . . .	75	9 = 1 in 8.3	20 = 1 in 3.8
In 1840 . . .	82	8 = 1 in 10.3	35 = 1 in 2.3
In 1841 . . .	73	12 = 1 in 6.1	27 = 1 in 2.7

Thus, of Fenger's cases, in 1840 most examples occurred; but the disease was much milder—a smaller number of patients died, and a

larger number of cases were cured by the tenth day. But in 1841 the disease was so serious, that of sixty-nine deaths from all diseases, twelve were from erysipelas; nor did any single disease take off half so many as this.

The following was the ratio in the various months:

	Ill.	Died.	Convalescent on the ninth day.	
December . . .	30	4	12	32 = 1 in 2·3
January . . .	26	2	12	
February . . .	19	2	8	
March . . .	14	2	2	14 = 1 in 3·7
April . . .	26	5	9	
May . . .	12	2	3	
June . . .	18	1	6	19 = 1 in 2·9
July . . .	20	4	7	
August . . .	17	2	6	
September . . .	19	3	6	27 = 1 in 2·9
October . . .	26	1	12	
November . . .	33	5	9	

From this it would appear that the disease is both most fatal in spring, and of longer duration; mildest in winter; in summer and autumn it holds an intermediate position. With regard to the influence of sex, it was found of—

	Ill.	Died.	Convalescent on the ninth day.
Men . . .	111	16 = 1 in 6·9	40 = 1 in 2·8
Women . . .	106	10 = 1 in 10·6	40 = 1 in 2·7

The disease, then, is less fatal in women; but the degree of difference is not such as to decidedly establish that it is invariably more serious in men.

Age has doubtless some influence:

Age.	Ill.	Died.	Convalescent on the ninth day.	
0—7 . . .	3	0	2	44 = 1 in 2·3
8—15 . . .	9	2	4	
16—20 . . .	39	2	16	
21—25 . . .	51	4	22	
26—30 . . .	24	1	6	22 = 1 in 2·2
31—35 . . .	14	—	8	
36—40 . . .	10	2	8	
41—45 . . .	14	4	3	14 = 1 in 3·1
46—50 . . .	6	2	—	
51—60 . . .	17	3	9	
61—70 . . .	7	3	2	
Beyond 70 . . .	2	2	—	
Uncertain age . . .	1	1	—	

Thus, erysipelas is much more dangerous after the age of forty; and it would appear to be of longer duration,—but this is not so well demonstrated.

With regard to the question whether it is less fatal out of a hospital, the evidence is not conclusive; but of nineteen cases observed by Fenger, three died and two were cured by the tenth day. He thence concludes that the disease is a very serious one even out of a hospital.

In examining whether the disease was more severe in those attacked some while after admission into the hospital, it was found that—

	Ill.	Died.	Convalescent on the ninth day.
From the 1st to 15th day	. 95	. 10 = 1 in 9.5	. 37 = 1 in 2.6
„ 15th 60th „	. 69	. 8 = 1 in 8.6	. 27 = 1 in 2.6
After the . . 60th „	. 34	. 5 = 1 in 6.8	. 13 = 1 in 2.6

It would appear, then, that it is much more fatal in those who have remained some time in the hospital; but immediately after admission cases happen of as long duration as those in patients attacked after some months sojourn.

With regard to the question whether traumatic is more serious than idiopathic erysipelas, in seventeen cases of idiopathic erysipelas one died, and eight or one in 2.1 were convalescent on the ninth day; but in twelve cases from other sources, four died, the fatal result being due to impaired constitutions and other diseases. Fenger thinks it probable that idiopathic erysipelas is both less dangerous and of less duration than traumatic; but in determining this question, the state of the constitution of each individual patient must be taken into consideration. Louis gives eight days duration: Fenger's cases, *idiopathic*, ninth day; *traumatic*, eleventh: Aubrée, (*Op. Cit.*) from thirty-five observations, between the seventh and tenth day: I find the average of my own cases, from eight to ten days.

Out of 178 cases of traumatic erysipelas observed by Fenger, on the

	Ill.	Died.	Convalescent by the ninth day.
Two 1st days after infliction of wound	. 41	. 6 = 1 in 6.8	. 14 = 1 in 2.9
3rd to 8th day „ „ „	. 76	. 8 = 1 in 9.5	. 26 = 1 in 2.9
After 8th day „ „ „	. 57	. 6 = 1 in 9.5	. 25 = 1 in 2.3
Uncertain interval „ „ „	. 4		

It would hence appear that the disease is both more fatal and of longer duration the more closely it follows upon the infliction of the wound. Nothing can be determined as to its duration from the precursory fever or diffuse inflammation.

With respect to its situation —

	Cases.	Died.	Convalescent on the ninth day.
Head	77	11 = 1 in 7.0	24 = 1 in 3.2
Trunk	44	7 = 1 in 6.3	14 = 1 in 3.1
Upper extremity .	44		22 = 1 in 2.0
Lower extremity .	52	8 = 1 in 6.5	20 = 1 in 2.6

Thus erysipelas of the head is neither more fatal nor of longer duration than when it commences in the trunk and lower extremities, in both which respects, erysipelas of the upper extremities appears more benign; but whether this is really the nature of the disease, or merely a fortuitous circumstance, further experience will decide.

Now, with regard to its extent in relation to the prognosis, of 217 cases in which it—

	Cases.	Died.	Lastest beyond nine days.
Spread over 1 region .	120	12 = 1 in 10.0	59 = 1 in 2.0
Spread over 2 regions .	76	11 = 1 in 6.9	18 = 1 in 4.2
Spread over 3 regions .	18	3 = 1 in 6.0	3 = 1 in 6.0
Spread over 4 regions .	3	—	—

It is clear, therefore, that those cases in which erysipelas is confined to one part of the body are not only cured more quickly but are less dangerous; it may also be remarked that the mortality is rather high in those cases in which erysipelas is restricted to one part of the body, and that, in two fatal cases, the erysipelas was confined to the immediate neighbourhood of the wound; and it is worthy of note that none of the three cases in which the erysipelas was nearly universal were fatal.

In forming a prognosis, the condition of the *pulse* is of great importance. To determine the influence of this symptom is subjoined a table exhibiting the mean frequency of the pulse in three divisions; the first the mean frequency of the pulse in fatal cases, the second in those convalescent on the ninth day, the third in those cured after the tenth day:

Mean frequency of the Pulse.	In fatal cases.	Number of Observations.	In those convalescent on the ninth day.	Number of Observations.	In those convalescent after the tenth day.	Number of Observations.
First day . .	109	9	117	37	119	37
Second day .	106	11	105	27	111	45
Third day . .	110	10	98	24	107	35
Fourth day .	110	12	91	18	108	46
Fifth day . .	112	12	94	12	102	34
Sixth day . .	131	7	92	5	100	39
Seventh day .	122	7	85	5	99	36
Eighth day .	113	7	80	1	97	35

From this table we learn :

(A.) That on the first day of the disease the frequency of the pulse is nearly equal in cases of short and long duration : indeed, in many cases cured by the third or fourth day, the pulse has been observed to be 140—150 on the first day.

(B.) When the pulse, frequent on the first day, decidedly diminishes on the second, and this decrease continues on the third and fourth, it is a sign that the disease will be of short duration.

(C.) But as often as the frequency of the pulse diminishes slightly on the second day, and especially on the third or fourth either remains the same or becomes greater than on the second, and on the next days keeps the rate of 100 and upwards, this is a sign that the disease will be tedious.

(D.) In fatal cases the frequency of the pulse on the two first days is rather less than greater ; but from the third day the frequency of the pulse is always increased ; and especially when it assumes a high number on the sixth or seventh day, it is a sign of a fatal issue.

But there are exceptions to these rules, for the pulse may be suddenly raised by extension of the disease to the head, a fresh eruption, inflammation attacking the internal organs, various complications of the disease, without necessarily a fatal result or greatly increased duration. Great and continued acceleration of the pulse from the third to the sixth day, is one of the most reliable signs of a fatal result. Yet Fenger met with a case in which the pulse suddenly assumed a frequency of nearly 200, with great prostration, and apparently approaching dissolution ; but the patient recovered. Irregular or intermittent pulse is usually a sign of fatal result.

Nunneley has found it to be a rule with 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.” (*Op. Cit.* ; p. 189.) This I have found to be pretty generally the case ; but it must be borne in mind that the pulse is very apt to vary in this disease, and slight causes will make it rise and fall ; and fatal cases have come under my notice, in which the pulse of one day was considerably less than on the day previous.

The *bellows sound* being heard both in slight and severe cases, and being also wanting in both, is obviously of no prognostic value. The same applies to the state of the blood, and the occurrence of hæmorrhage ; but history teaches us, that in many epidemics of erysipelas, hæmorrhage, chiefly from the nose, occurs. (*Ozanam : Histoire Médicale des Maladies Epidémique, &c.* ; t. v, p. 223.) In the epidemic observed by Tozzi (*M. Hippocratis Aphorismos Comment.* ; t. vii), at Naples, in 1700, it was a fatal symptom ;—in that by Richa, at Turin, in 1724, a salutary one.

Although the respiration is observed to become short and frequent towards the end of the disease, it is otherwise of no prognostic value. All cases in which *sudamina* were observed were very severe ones.

In nearly all fatal cases, the *tongue* was either immediately dry or soon became so; but this is by no means an invariable sign of fatal issue. It is a good sign when it becomes moist again; but even this was observed in two fatal cases. The dry, fissured, brown, scaly tongue, indicated a severe case, but not an invariably fatal one; the aphthous tongue was, for the most part, observed towards the end of a tedious and exhausting case. Very foul tongue, nasty taste, nausea, vomiting, cardialgia, occurred in fatal and severe cases.

Diarrhœa was seldom observed in those cases cured before the tenth day, unless the patient be hectic or purgatives are given; it was more frequently observed in tedious cases, and is rather a frequent symptom in fatal cases, mostly indicating a serious complication of the disease; if fœtid, profuse, and bloody, the unfavourableness of the prognosis is increased. Return of appetite and sleep is a sign of the termination of the disease.

Cases of *fresh eruption* of the erysipelas appeared mostly free from danger.

Its spreading to the *mucous membrane* of the eye is often observed in slight cases. However, it may involve all the structures of the eye, producing glaucoma and consequent loss of sight; and may lead to disease and protrusion of the eyeball, and arachnitis. (*Lancet*; 1856; p. 199. *Fenger: Op. Cit.*; 48.) In one case in which it spread to the cellular tissue of the orbit, complete amaurosis followed. I have met with an instance in which the diffuse inflammation reflected inwards, caused purulent infiltration at the back of the orbit; and lately an interesting case of protrusion of the eye, consequent on diffuse inflammation of the orbit, followed by suppurative inflammation of the ophthalmic vein, extending to the cavernous sinus and middle cerebral veins, has been recorded. (*Ophthalmic Hospital Reports, &c.*; October, 1857, p. 26.) Mackenzie (*Practical Treatise on Diseases of the Eye*; p. 122) relates from Dr. Piorri, a case which (with numerous others of a similar character recorded by the same physician) makes it appear that one of the modes—perhaps the most frequent, but least suspected mode—in which erysipelas of the face and scalp proves fatal, is the spreading of the inflammation from the eyelids to the cellular tissue of the orbits, and the termination of it in abscess within that cavity. “It sometimes happens,” he adds, “that the cellular membrane of the orbit, although considerably affected, does not suppurate. On the subsiding of the acute symptoms, the eyeball in such cases is found to be deprived of its power of motion, is protruded, or has even become amaurotic from the pressure it has

undergone." Dr. Malle (*Gazette Médicale*; 1833; t. i, No. 46) has justly observed, however, that there are cases in which the eyelids are severely affected without any cerebral disturbance, and others in which the encephalic organs are seriously compromised, although the eyelids and orbits are not at all affected.

The extension of the diffuse inflammation to the mouth and fauces is very serious—to the *serous membranes* most so; indeed, all cases attacking the peritonæum were fatal; but one case of recovery, when affecting the pleura, is reported by Fenger. The same applies to the head affection: in sixty-five in which delirium was observed, twenty-one died, or one-third; eight were cured within the tenth day; thirty-six after the tenth day. Of these sixty-five cases, thirty-one had delirium, stupor, or spasmodic symptoms; of these, twelve died, nineteen cured after tenth day, but none before this day.

The so-called cerebral symptoms, therefore, do not necessarily foretell a fatal event. Cases are met with which recover with all the symptoms of arachnitis and of typhus combined; yet it must be observed that the probability of death which in usual cases is one to eight, in cases with delirium is increased to one in three, and if to the delirium, coma, or and other cerebral symptoms be added, even this ratio is increased. Tremor, subsultus tendinum, and convulsions, render the prognosis most unfavourable.

The *hybrid form*, as may be supposed, is free from all danger. Critical abscesses, forming towards the end of the disease, protract the disease but rarely make it more dangerous, except when of such extent as to prove exhausting. (*Sauvage: Nosologie Méthodique*; t. i, p. 601.)

From the above it may be inferred (*A*) that the fatal result is to be feared in a patient more than forty years old, beyond two months after his admission into a hospital, but a short time after the infliction of the wound—spreading over a large surface, or down the cavity of the mouth, with a pulse of increasing frequency on the third to the sixth day, irregular, intermittent; great and increasing frequency of respiration; tongue dry, fissured, scaly; diarrhœa; attacking the serous membranes, especially the peritonæum; typhoid symptoms; depression of vital power; pneumonia; large bed sores; or complicated with delirium tremens, typhus fever, acute suppurative arthritis.

(*B.*) That the disease will be *tedious* when the erysipelas occurs in spring, in patients of either sex, more than forty years old, with frequent pulse, not decreasing on the third or fourth day of the disease; with the presence of sudamina, relaxed bowels, delirium, coma, low nervous fever, formation of abscesses, complication of hectic fever.

(*C.*) The disease may be expected to be of short duration, *i. e.*, the patient convalescent on the ninth day, when it occurs in young subjects,

and in the winter season, seated in the upper extremity, involving a small extent of surface, the pulse decidedly decreasing on the third and fourth day, moist tongue, sluggish bowels, returning appetite, no delirium nor complications. However, it must be added, *first*, that these symptoms possess no absolute certainty, either alone or many combined; *secondly*, the most reliable prognostic signs are not noted until the fourth day or later, so that early in the disease the result may be always considered uncertain.

In some instances even erysipelas seems to have been the salutary crisis of other, and indeed, inveterate complaints. Hippocrates writes: "Erysipelas ab exterioribus verti ad interiora non est bonum; ab interioribus vero ad exteriora bonum." Frank (*Op. Cit.*) states that he saw women completely freed from leucorrhœa and from gouty and rheumatic pains by a supervening erysipelas. Hoffman (*Op. Cit.*) mentions other diseases, especially "convulsive asthma and convulsive colics," finally put an end to by a critical erysipelas.

Dr. Gordon, of Aberdeen (on *Puerperal Peritonitis*; 1795; p. 75), states: "one of the most favourable symptoms is an erysipelas on the extremities, or abscesses on different parts of the body, for such are certain signs of a salutary crisis; and he further observes, (*Op. Cit.*, note at p. 58.) "this critical erysipelas most commonly fixes on the extremities, but in a few instances on the external surface of the abdomen."

Cullen (*Lectures on the Practice of Physic*; vol. i, p. 149) states that "sometimes the disease disappears on the second or third day, while an erysipelas makes its appearance on some external part, and if this continue fixed, the pneumonic inflammation does not occur."

When treating of hepatitis, Cullen also observes (vol. i, p. 171) that "it would seem to be sometimes cured by an erysipelas appearing in some external part."

Mackintosh (*Practice of Physic*; vol. ii, p. 181), from the repeated observation of such facts, cannot avoid considering erysipelas in the light of a natural blister, and thinks it probable that the ancients were first led to apply external irritants and the actual cautery from observing the beneficial effects of erysipelatous inflammation recurring under severe internal disease. An instance of chronic gastralgia removed after an attack of erysipelas of the face is given. (*Medical Times*, 1848.) A case of lupus and also of amaurosis cured by an attack of erysipelas are reported. (*Lancet*; June, 1850.) This important point of view, moreover, suggested to Dr. Sabattier (*Thèses de Paris*; 1831; No. 209) the idea of his interesting thesis "on erysipelas considered as a therapeutical means." He saw many instances of the salutary influence, sometimes of the permanently curative effects, of erysipelas in eczema, sycosis, psoriasis, lichen, and even in lupus and elephantiasis.

He gives an interesting case of severe erysipelas that was followed by rapid cicatrization of syphilitic ulcers, and the disappearance of syphilitic nodes and tubercles, and also of a double incipient cataract that had been diagnosed before the invasion of the erysipelas. But he observed that the various accidents that depend upon a syphilitic cause reappeared after a certain time if not suitably treated.

Fenger (*Op. Cit.*, p. 172) has seen indolent abscesses and fistulæ rapidly heal up after an attack, and has observed the same result in an obstinate case of lupus (Willan); but he adds that it may have the contrary effect, and quotes a case in which an abscess became diffuse, extending to the joint and rendering amputation necessary, and gives an interesting case of fatal perforation of the peritonæum. (P. 174.)

Pidoux (*Journal de Méd. et de Chirurg.*) has seen acute articular rheumatism cured by this result; but M. Monneret, from observing contradictory cases, denies the possibility of its occurrence. I lately saw a remarkable case of the salutary action of an attack of erysipelas: a man had a most severe and obstinate attack of ophthalmia in both eyes, the conjunctiva, schlerotic, and cornea were much inflamed, the latter being quite hazy; part of the treatment consisted in applying a seton to the neck;—a few days afterwards erysipelas appeared at the wound, apparently caught from a neighbouring patient, and it soon spread all over the face, producing much œdema of the eyelids, so as completely to prevent his separating them; after desquamation had come on and the œdema had subsided, it was found on examining the eyes that all traces of inflammation had disappeared, and that the cornea, previously dull, was quite clear and vision perfect; thus affording at the same time a good instance of the beneficial effects of occlusion of the eyelids in eye diseases. I have also seen the pain and effusion of chronic joint diseases much lessened, and long standing sciatica apparently cured, by an attack of erysipelas of the limb.

Leroy (*Gazette des Hôpitaux*; Jan. 16th, 1851) writes, "If in the course of an acute fever, an attack of erysipelas appears, either on the face or limbs, the eruption is usually advantageous, and sometimes even quite critical." Vogel (*De cognoscendis et curandis corp. hum. affectibus*, 1789): "Scire autem oportet erysipelas spontaneum non solum per se excludi, verum etiam aliis morbis tam acutis quam longis cachecticis aliquando supervenire; inque priori casu salutare esse et pro criticâ excretionem haberi debere, in altero vero hominem celeriter jujulare."

DIAGNOSIS.

Fenger (*Op. Cit.*; p. 195) looks upon *erysipelas ambulans* and *erysipelas vulgaris* as two distinct diseases. In three and a half years he met with 194 cases of *erysipelas vulgaris*, occurring in 187 cases—eighty-nine men and ninety-eight women. Thus it would also appear to be more frequent in women than men; but on investigating the

influence of age in the same method as used in the case of *e. ambulans* it was found that—

Of 1000 patients, there were attacked with *erysipelas vulgaris* :

Age.	Men.	Women.	Both sexes.
6—20	14 . .	62 . .	33
21—30	32 . .	68 . .	45
31—40	27 . .	70 . .	39
41—50	28 . .	41 . .	32
Beyond 50	48 . .	29 . .	40

Now, as previously pointed out, *e. ambulans* is most frequent before the twentieth year; but in *e. vulgaris*, it is much more frequent after this age than before. Again, the minimum frequency of *e. ambulans* is 31—40; of *e. vulgaris*, 41—50. With regard to the influence of sex, in men the frequency of *e. vulgaris* is least before the twentieth year, from the twenty-first to fiftieth remaining nearly the same, arriving at its maximum in the aged; but in women the frequency of *e. vulgaris* is nearly of the same high ratio until the age of forty; it then descends, and is lowest in the aged—a very different result to that observed in *e. ambulans*.

Of the 194 cases, eighty-two arose in the hospital, 108 out of the hospital,—doubtful in four. Fenger, therefore, considers that *e. vulgaris* cannot be reckoned amongst nosocomial diseases although surgical cases showed a manifest disposition to this disease; for in forty-five cases of recent wound, in twenty-eight the disease originated in a superficially suppurating wound; but, as above shown, *e. ambulans* is not excited by the irritation of superficial suppuration.

Now, in *e. vulgaris* the contrary is the case, as it is most frequently observed around lacerated, contused, and poisoned wounds, or containing foreign bodies, or wounds to which sutures have been applied, confined abscesses or with small openings, neglected ulcers, the friction and pressure of rough clothing; and an attack is rendered more likely by abuse of spirits, indigestible food—shell fish, the suppression and healing up of discharges, &c. Of the 194 cases—

In 1838	49 cases of <i>e. vulgaris</i> occurred.
In 1839	61 „ „
In 1840	57 „ „
In 1841	27 „ „

The following was the mean ratio of the months in which they were observed :

December 8·0	April 5·8	August . 5·7
January . 4·0	May 5·8	September 3·7
February 4·3	June 2·5	October . 3·3
March . 3·5	July 6·3	November 3·3

We find for 100 patients there occurred in—

Winter 3·0 Spring 2·9 Summer 3·3 Autumn 2·0

Autumn alone differs from the rest by its minimum ratio; the contrary is the case in *e. ambulans*.

Erysipelas vulgaris is sometimes fugacious, but not *ambulant*; does not spread regularly or symmetrically, nor is stayed by folds of skin, vanishing from one part while it attacks another; but its extension is similar to that which obtains in all inflammatory diseases.

There is a difference in the frequency of its seat in the various parts of the body.

In 194 cases of *e. vulgaris*—

	Men.		Women.	Total.
Face	24	. . . .	19	} 45
Scalp	2	—	
Mamma . . . . .	—	. . . .	4	
Genitals	4	. . . .	3	} 15
Rest of trunk	2	. . . .	2	
Superior extremity .	7	. . . .	10	17
Thigh	6	. . . .	4	} 114
Leg	32	. . . .	45	
Foot	13	. . . .	14	
Whole body	2	. . . .	1	3
	<hr/> 92		<hr/> 102	<hr/> 194

Erysipelas vulgaris, then, would appear to be rather frequent in the head, rare on the trunk and upper extremity, but most common in the lower extremity; in the cases in which the disease was observed to attack the whole body, the redness was patchy and diffused over a large portion of the superficies of the skin.

The attendant fever is ephemeral, lasting only a few days, never giving rise to bad symptoms; beginning with a rigor followed by heat, thirst, lassitude, frequent pulse, seldom beyond 100; often headache with vertigo, sour taste, white tongue, nausea, oppression at cardia, seldom diarrhoea: the anomalies of *e. ambulans* are not met with.

Erysipelas vulgaris is a trivial disease. Of 194 cases, two died; one with delirium tremens, the other with puerperal fever. With such complications they can hardly be said to have died from *e. vulgaris*, which may be considered as free from all danger. Nor does it last long; of the eighty-two cases in the hospital, in seventy the day of the commencement and termination was determined. In these cases the disease lasted—

Days .	1	2	3	4	5	6	7	8	9	10	12	14	15	21	Total.
Men .	3	4	9	3	5	2	4	1	2	1	1	—	1	—	= 36
Women	3	7	5	10	—	4	—	1	1	—	1	1	—	1	= 34

On the fourth day, then, more than half of the patients were convalescent. The mean duration of the disease was 4·8 days; in men 4·9, in women 4·7. It is difficult, says Fenger, to imagine how this disease can be confounded with *e. ambulans*, the mean duration of which is nearly eleven days.

This, however, refers only to those cases seen early and properly treated, for the duration of the disease when left to itself is very different; for of 102 cases arising out of the hospital, in ninety-eight previous to admission it had lasted in twelve, two weeks; in four, three weeks; in one, four weeks; and in one, six months. The mean duration of the disease previous to admission, was found in all the ninety-eight cases, 8·9; in forty-four men, 6·4; fifty-four women, 11·9. But omitting the case in which the case persisted six months, 7·2 days, in forty-four men 6·4 days; fifty-three women, 7·9 days. Thus it would appear that *e. vulgaris*, properly treated, scarcely lasts five days; but left to itself, seven days even before the patients sought relief.

But when the disease is thus neglected, it readily yields to proper treatment; for in eighty-one cases of this kind, the mean duration of the disease, after admission into the hospital, was 5·0 days. Thus: in thirty-five men, 4·1; in forty-six women, 5·7. It appears, then, that this variety of erysipelas is readily cured, even when neglected for several days, if properly treated; and in this greatly differs from *e. ambulans*, in which the power of remedies is not nearly so evident.

Fenger (*Op. Cit.*; 204) looks upon *e. vulgaris* as merely simple inflammation of the skin, entirely resembling inflammation of other organs, and distinguished from *e. ambulans* by its raised margin and symmetrical disposition; but while I fully agree with him in the diagnostic signs between *erysipelas ambulans* and *erysipelas vulgaris*, I cannot coincide with his views on this point; and only admit that they are varieties—and very distinct ones, too—of erysipelas; that is, of diffuse inflammation of the skin. (See definition; p. 10.)

TREATMENT.

Of Fenger's 216 cases of idiopathic ambulant erysipelas, twenty-six died; eighty were convalescent on the ninth day; therefore, one died in 8·3, one convalescent before the tenth day. He passes in review the expectant, the abortive, and the rational system of treatment, giving the results of each; but the universally adopted system of treatment in the metropolis, by stimulants and support, does not appear to have been put in force; whence, probably, to some extent the explanation of his expression of the result—"Nos non magna gloriari posse efficacia remediorum nostrorum in his casibus" (*Op. Cit.*; p. 192); and it is but reasonable to suppose that, had a

different mode of treatment been followed, a somewhat more satisfactory result would be recorded.

I may here briefly remark, that the treatment I recommend is that of free and steady support by alcoholic stimulants, bark and quinine, and early incisions when necessary, preceded, if the case is seen early, by the administration of an emetic and mercurial purgative. Two new remedies have lately been put forward—the perchloride of iron, and camomile. Mathey, in his thesis on the use of perchloride of iron, states that its action on erysipelas is evident, and the course of the disease is modified a short time after its administration. In fact, on the second day, and sometimes even on the first, M. Mathey has seen the disease become limited and circumscribed, and its further progress arrested. As to the duration of the disease, the effect of the perchloride is still very remarkable: not only is the progress of the erysipelas sensibly modified from the first few hours which follow the administration of the medicine, but it is completely arrested; the radical cure of the disease is obtained in a very short time. It was observed that in ten rather severe cases of erysipelas treated by the internal use of the perchloride of iron, three were cured in two days; three were cured in three days; two were cured in four days; one in five days; and one in seven days. It cannot, therefore, be denied that erysipelas is advantageously modified by the internal use of chloride of iron; that the cessation of the symptoms proper to erysipelas is sometimes very rapid after the administration of this medicine; that in a series of ten observations, made upon varied cases, this treatment never failed; that even where its efficacy may be doubted, it has never given rise to any bad symptom; and that when administered in the dose of thirty drops to a healthy subject, it has never given rise to any painful sensation, and has never produced any notable functional disturbance: even 100 have been given in certain exceptional cases. M. Aran believes that it would be vain to expect advantageous results from the administration of perchloride of iron in all cases of erysipelas. He is convinced that some cases of erysipelas will not yield to this remedy: as, for instance, the cases which occur in young, strong, and robust subjects of a sanguine temperament, and which are accompanied by a well marked inflammatory action. On the other hand, the cases of erysipelas which are developed in feeble, delicate subjects, of a well marked lymphatic or scrofulous temperament; in individuals already weakened by previous diseases; the cases especially which exhibit, with well marked tendency to spread, the œdematous form; and in which, even with a marked acceleration of the pulse, the arterial throbs are weak and easily depressed, or when fever is completely wanting, as happens sometimes in old persons—these cases are remarkably modified, and often arrested in twenty-four, thirty-six, and forty-eight hours, by the

administration of the perchloride. The erysipelas which is still more atonic, and which supervenes in the course of serious diseases around punctures, abrasions, or lacerations of the skin, at other times even without appreciable causes, are amenable to the perchloride of iron. Lastly, the cases which, even when they show themselves in strong and robust subjects, after having been reduced by various and appropriate treatment, still linger on, and pass from one part to another, throwing out unexpectedly its eruptions in places where the disease appeared to have long been extinguished—such cases are often terminated in twenty-four hours by the perchloride of iron.

Another point connected with this subject is the propriety of administering the perchloride of iron as a prophylactic. "There are certain epochs and years," says M. Mathey, "when cases of erysipelas of traumatic origin are multiplied to infinity, and show themselves in such great number, that the disease is truly epidemic. The application of a seton, a moxa, or a blister, is followed by an erysipelatous inflammation; and, *a fortiori*, the great wounds united by sutures and bandages of diachylon are almost infallibly attacked with the disease. The surgeon who operates under these circumstances is pretty sure to see erysipelas among his patients. It would, perhaps, be proper to postpone the operation; but sometimes the case is urgent, and the surgeon would think himself fortunate, and could act with more confidence, if he could hope to put his patient beyond the reach of a troublesome complication. Might we not, for the first few days which follow a delicate operation, and during which inflammation is to be feared, add to soothing beverages some drops of perchloride of iron, because it is fully established that its use in moderate doses is not followed by any bad effect?"—*Bulletin Général Thérap.*; July, 1857. *British and Foreign Medical Review.*

It may be here mentioned that a new remedy has lately been announced by M. Ozanam, at a recent sitting of the Academy of Sciences at Paris: this is the camomile (*anthemis nobilis*), which possesses, it is said, the virtue of preventing suppuration when the local disease is not too far advanced, and of gradually stopping it when it has existed for a long time. For this purpose it is administered in powerful doses of four, eight, and even twenty-four scruples of the flower in a pint and a half of water; the infusion to be drunk in the course of the day, and to be continued until the cure is effected. Compresses, moistened with the infusion, may be locally applied; they aid the cure, but are not necessary—the infusion alone, taken internally, being quite sufficient. Among other cases is quoted one of a man, aged thirty-three, labouring under phlegmonous erysipelas of the face and head, with five enormous tumours; the skin was separated from the skull by a vast quantity of pus; a sixth tumour was being

formed at the angle of the lower jaw. The patient had violent fever, accompanied with incessant delirium. On the twenty-eighth day, camomile was administered in $\mathfrak{z}\mathfrak{j}$ doses per diem. During the first days, the suppuration increased, whereupon the doses were reduced to $\mathfrak{z}\mathfrak{ss}$.; the suppuration rapidly diminished, and on the twentieth day after the commencement of the treatment the patient was discharged in perfect health. Three other cases, all worse than the above, are mentioned.

I have not yet had any opportunity of testing either of these remedies, but I think it very probable that the remarkable properties so lately discovered in the latter plant are very much overrated.

